PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
OAKLANDS GOLF COURSE
8970 STANLEY AVENUE
NIAGARA FALLS, ONTARIO

Submitted to:

RICCI LAW PROFESSIONAL CORPORATION
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Submitted by:

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Distribution:

- Ricci Law Professional Corporation – 1 copy; and
- Wood Environment & Infrastructure Solutions – 1 copy.

EXECUTIVE SUMMARY

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood) was retained by Ricci Law Professional Corporation (the Client), to conduct a Phase One Environmental Phase One Property Assessment (ESA) of the property located at 8970 Stanley Avenue, in the City of Niagara Falls, Ontario (Phase One Property). The Phase One Property is currently vacant and was previously occupied by commercial property use (the Oaklands Golf Course). A Phase Two ESA report is being completed for the Phase One Property under separate cover.

The Client retained Wood to provide an evaluation of known and possible environmental issues at the Phase One Property prior to the redevelopment of the property for residential land use. The Client has indicated that, as a condition of potential development, they require a Record of Phase One Property Condition (RSC) be filed for the Phase One Property in accordance with Ontario Regulation 153/04 *Records of Phase One Property Condition, Part XV.1 of the Environmental Protection Act* (EPA), as amended, (*O. Reg. 153/04*, as amended). The objective of the Phase One ESA is to provide an evaluation of known and possible environmental issues at the Phase One Property as required to support an RSC for the Property. It is noted that the Phase One ESA report must not be older than 18 months (as indicated in *O. Reg. 153/04*) at the time of filing of the RSC and therefore, the current report would need to be updated prior to RSC filing.

This Phase One ESA was carried out in accordance with the Terms of Reference as described in Wood's proposal, dated July 11, 2019 and Authorization to Proceed, signed by the Client on July 17, 2019.

Under the supervision of Patrick Shriner, P.Geo., QP, Loren Kamps, EPt., of Wood conducted a reconnaissance on January 24, 2019 and February 8, 2019 to evaluate possible Phase One Property issues, and to assess whether any surrounding land uses may have and/or are currently impacting the environmental condition of the Phase One Property. On the day of the reconnaissance the weather was approximately 0°C with overcast (January 24, 2019) and -4°C with overcast (February 8, 2019). Ground cover conditions at the time were wet and snow covered.

According to the records review, the first use of the Phase One Property was between 1970 and 1975 when the Phase One Property was developed for commercial property use as a golf course. It appears to have remained in this use until present day.

Based on the Phase One ESA conducted by Wood, evidence of potential contamination associated with the Phase One Property has been identified with respect to activities of the Phase One Property acting as a golf course, in particular: two historic ASTs (PCA #28), the general use of the

maintenance workshop and shed to maintain equipment (PCA #52), the suspected presence of fill materials (PCA #30), the use of pesticides throughout the golf course (PCA #40), pesticide storage inside the maintenance shed (PCA #40), and the presence of a transformer suspended on a pole (PCA #55). These resulted in APECs on the Phase One Property. A Phase Two ESA would be required at this Phase One Property to address the APECs identified in this Phase One ESA before an RSC could be submitted.

The presence of suspected LCPs, ACMs, and PCBs as well as moisture/mould were identified as potential operational/management issues by Wood. To address potential operational/ management issues, Wood offers the following recommendations:

- Suspected LCPs may be present at the Phase One Property based on criteria outlined in the Canadian Hazardous Products Act – Surface Coating Materials Regulation, as revised in 2010. As enforced by the Ministry of Labour (MOL), all LCP in poor condition must be removed by a qualified lead abatement contractor as outlined in the MOL Guideline titled the *"The Control of Lead Exposures During the Removal of Lead on Construction Projects"*. Although many companies eliminated the use of lead in paint in the early 1990s, the legislative definition of LCP in Canada was revised in 2010 to include a much lower acceptable concentration of lead than was previously regulated. Based on these revised levels, paint manufactured in 1991 could still contain concentrations of lead above the regulated levels as defined in 2010.

- A Designated Substances Survey (DSS) is required if future repair, renovation or demolition activities are planned in areas of the building where suspect ACMs and LCPs are located. A DSS is required to fulfil the Owner's requirements under Section 30 of the *Ontario Occupational Health and Safety Act*, (the OHSA), Revised Statutes of Ontario 1990, (as amended). The building owner must provide the DSS report to all contractors working on the Phase One Property. Subsequently, all contractors must provide the DSS report to their subcontractors.

- Wood noted the particle board on the walls and ceiling of the maintenance shed appeared to be heavily stained with a black and grey colour, and possibly contained mould. This issue should be addressed.

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1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood) was retained by Ricci Law Professional Corporation (the Client), to conduct a Phase One Environmental Phase One Property Assessment (ESA) of the property located at 8970 Stanley Avenue, in the City of Niagara Falls, Ontario (Phase One Property). A key plan showing the location of the Phase One Property is provided on **Figure 1**. The Phase One Property is currently vacant and was previously occupied by commercial property use (the Oaklands Golf Course). **Figure 2** illustrates the lot configuration of the Phase One Property. Phase Two ESA reports are being completed for the Phase One Property under separate cover.

The Client retained Wood to provide an evaluation of known and possible environmental issues at the Phase One Property prior to the redevelopment of the property for residential land use. The Client has indicated that, as a condition of potential development, they require a Record of Phase One Property Condition (RSC) be filed for the Phase One Property in accordance with Ontario Regulation 153/04 *Records of Phase One Property Condition, Part XV.1 of the Environmental Protection Act* (EPA), as amended, (*O. Reg. 153/04*, as amended). The objective of the Phase One ESA is to provide an evaluation of known and possible environmental issues at the Phase One Property as required to support an RSC for the Property. It is noted that the Phase One ESA report must not be older than 18 months (as indicated in *O. Reg. 153/04*) at the time of filing of the RSC and therefore, the current report would need to be updated prior to RSC filing.

Legal Description	Pt lots 1 & 2, Con BF Welland River; Pt rdal btn lots 2 & 3 Con BF as Parts 13 & 14, 59R7833; Part Lot 20, Con 3 Willoughby desig. At Part 15, 59R7833; Part lot 3, Con BF Welland River Pts 4-7, 59R14106 & Pts 9 & 10, 59R7833; Pt rdal btn lots 2 & 3 Con BF as Pts 9-12, 59R7833	
PIN	64255-0009, 64255-0337, 64255-0012	
Area	58 hectares (ha) (142 acres)	
Location	East side of Stanley Avenue, north side of Lyons Creek Road east to the Welland River	
Client	Ricci Law Professional Corporation on behalf of the owner 2610832 Ontario Inc.	4025 Dorchester Road, Suite 331 Niagara Falls, Ontario L2E 7K8 Contact: Ms. Jennifer Ricci 289-932-1640 riccilaw2008@gmail.com

Owner	2610832 Ontario Inc.	8485 Montrose Road, Niagara Falls, Ontario L2H 3L7 Contact: Mr. Frank Ianniello franki@panoramicproperties.ca

A key plan showing the location of the Phase One Property and the Phase One ESA Study area is provided on **Figure 1**. A legal survey plan was not available at the time of completion of this report; however it will be included at the time of filing of the RSC. It will be included in **Appendix A**.

2.0 SCOPE OF INVESTIGATION

This Phase One ESA was conducted in accordance with the Phase One ESA standard as defined by *O. Reg. 153/04*, as amended. This report also complies with the 2003 CSA Phase One ESA Standards defined by CAN/CSA Z768-01 Phase I Environmental Phase One Property Assessment published November 2001 (reaffirmed 2016). The date the last work on the records review, interviews and reconnaissance components were completed was March 26, 2020.

This Phase One ESA was carried out in accordance with the Terms of Reference as described in Wood's proposal, dated July 11, 2019 and Authorization to Proceed, signed by the Client on July 17, 2019. The scope of work for the Phase One ESA consisted of the following tasks:

- Reviewing the historical occupancy of the Phase One Property, using available archived and relevant (in Wood's opinion) municipal and business directories, fire insurance plans (FIPs), other historical mapping and aerial photographs and documenting the history of the Phase One Property to its development or 1875, whichever is earlier;
- Obtaining licensed copies of FIPs, Underwriters' reports and plans (via Opta Information Intelligence [Opta]) and an Ontario Base Map for the Phase One Property;
- Obtaining chain of title for the Phase One Property (back to Crown or 1875);
- Reviewing the current use of the Phase One Property and any land use practices that may have impacted its environmental condition;
- Reviewing the current use of the surrounding properties and any land use practices that may have impacted the environmental condition of the Phase One Property;
- Mapping the Phase One Property and the surrounding properties within a minimum of 250 metres (m) of the Phase One Property;
- Conducting a 'walk-through' visual assessment (i.e., Phase One Property reconnaissance) of the Phase One Property and building facilities, to identify the presence of actual and / or potential environmental contaminants or concerns of significance;
- Conducting interviews with multiple Phase One Property representatives to obtain knowledge of all historical activities on enhanced investigation properties as practicable, as well as to provide Wood staff with unrestricted access to all areas of the Phase One Property and buildings (as required by *O. Reg. 153/04*);

- Contacting municipal and provincial agencies to determine the existence of records of environmental regulatory non-compliance, if any, and reviewing such records where available. Certain provincial searches are only conducted from the period of 1987 to present. Should Wood feel it appropriate to search prior to 1987, additional fees will be required. It should be noted that responses from these agencies may not be received prior to preparation of the report. The Client would be notified when a response is received and any additional costs to obtain these records;

- Obtaining a complete Environmental Risk Information Services Ltd. (ERIS) report for the Phase One Property and a 250 m surrounding perimeter. ERIS is a national service that provides Phase One Property-specific environmental and property use information from detailed government and private sector records;

- Developing a Conceptual Phase One Property Model (CSM) by a Qualified Person (QP) as defined by Part XV.1 of the Environmental Protection Act. The CSM will combine regional geologic and hydrologic data with data available for the Phase One Property to produce a comprehensive view of the environmental conditions at the Phase One Property; and

- The results of the Phase One ESA will be included in a draft report issued to the Client and final bound copies could be issued upon approval from the Client. The reports would include Phase One Property plans, aerial photographs, Phase One Property photographs, etc.

In completing the scope of work, Wood did not conduct any intrusive investigations, including sampling, analyses or monitoring. This Phase One ESA report is not to be construed as a regulatory compliance audit or review. Although this report discusses designated substances and hazardous materials including asbestos-containing materials (ACMs), lead, mercury, ozone depleting substances (ODS), polychlorinated biphenyls (PCBs) and mould, the review was performed at a cursory level and for the Phase One Property. No sampling or analytical testing for designated substances and/or hazardous materials was performed. This report should not be construed as a designated substance or hazardous materials survey or assessment. Recommendations made with respect to these items are provided as guidance only.

All activities of the Phase One ESA were completed under the supervision of a QP as defined by *O. Reg. 153/04*, as amended. In addition, the QP prepared the CSM, in accordance with Part VII of *O. Reg. 153/04*, as amended. A reference document, outlining the definitions and legislation references for the Phase One ESA, is provided in **Appendix B**.

3.0 RECORDS REVIEW

3.1 General

The date the last work on all the records review, interviews and Phase One Property reconnaissance components of the Phase One ESA was March 26, 2020.

3.1.1 Phase One Study Area Determination

The default 250 m buffer from the Phase One Property boundaries was selected for the Phase One Study Area (**Figure 1**).

Lands inferred upgradient of the Phase One Property, beyond 250 m, were primarily vacant, agricultural, and residential and it is not anticipated that environmental impacts affecting the Phase One Property would result from these land uses.

3.1.2 First Developed Use Determination

According to the records review, the first use of the Phase One Property was between 1970 when the Phase One Property was developed for commercial property use as a golf course. It appears to have remained in this use until present day.

3.1.3 Fire Insurance Plans, Property Underwriters Reports and Plans

The City was listed in the *Catalogue of Canadian Fire Insurance Plans 1875-1975*. Wood contacted Opta to conduct a search of their Historical Environmental Services Enviroscan™ (HESE) to obtain any available FIPs, Property Underwriters Reports, and other plans.

According to Opta, FIPs were not available for the Phase One Study Area. FIPs for The City were available from the Brock University Special Collections Library. However, the location of the Phase One Property and surrounding properties was not covered by the FIPs.

According to the Opta search, three Inspection Reports were available for the Phase One Property: a Property & Liability Evaluation Report (2003; the 2003 Evaluation Report), a Cope Report (1985; the 1985 Cope Report), and a Siteplan Report (1985; the 1985 Siteplan Report). Based on these reports, the following was noted:

- Two (2) ASTs, 2,000 litres (L) each, were present at the Phase One Property in 2003 with an estimated age of 1990.

Based on the information provided by Opta, these 2 ASTs represent a potential environmental concern. These ASTs are not visible through air photos and therefore the locations are unknown. In the case that the ASTs were for waste oil (ERIS indicates the Phase One Property is registered as a waste generator) purposes or re-fueling of golf carts, it is estimated that the ASTs were in the vicinity of the maintenance building with golf cart storage

A copy of the Opta response is available in **Appendix C.**

3.1.4 Chain of Title

A chain of title was prepared by Mr. Dominic Bertucci of Domson's Title Search Inc. and provided to Wood to document the ownership of the Phase One Property from its conversion from Crown to the present owner.

PIN # 64255-0009 & 64255-0012:

Registration Date	Document Type	Party From	Party To
June 22, 1796	Patent	Crown	William Lyons
March 29, 1819	Deed	William Lyons	Thomas Cummings
May 24, 1825	Deed	Thomas Cummings – estate	Wilbert Micking
November 1, 1848	Will	Wilbert Micking	George Micking
March 13, 1889	Deed	John Sibbel, exor. Of the estate of George Micking	William Walmsley
April 21, 1928	Deed	William Walmsley	Harry Oakes
August 25, 1931	Deed	Harry Oaks	Welland Securities Ltd.
March 28, 1966	Deed	Welland Securities Ltd.	Welland Securities (1964) Ltd.
November 5, 1991	Deed	Welland Securities (1964) Ltd.	Marineland of Canada Inc.
December 12, 2002	Deed	Marineland of Canada Inc.	Marineland of Canada Inc.
December 29, 2017	Deed (Present Owner)	Marineland of Canada Inc.	2610832 Ontario Inc.

PIN # 64255-0337:

Registration Date	Document Type	Party From	Party To
March 30, 1811	Patent (100 acres)	Crown	John Burch
May 10, 1811	Deed	John Burch	Lanty Shannon

Registration Date	Document Type	Party From	Party To
January 14, 1824	Deed	Thadeus Davis, exor. Of the estate of Lanty Shannon	William Terry
July 16, 1830	Deed	William Terry	John Darling
October 22, 1831	Deed	John Darling	David Davis
February 15, 1866	Deed	David Davis	James Crane
June 13, 1872	Deed	James Crane	Andrew Simpson
October 18, 1921	Deed	Andrew Simpson	Charles Kimele
May 20, 1934	Deed	Charles Kimele	George Glasgow
September 19, 1958	Deed	George Glasgow	Andrew Harris & Shirley Harris
May 14, 1971	Deed (Pts 9-12, 59R7833)	Andrew Harris & Shirley Harris	Welland Securities (1964) Ltd.
March 15, 1972	Easement	Welland Securities (1964) Ltd.	The Consumers' Gas Company
September 1, 1972	Deed	George Glasgow	Welland Securities (1964) Ltd.
April 27, 1976	Deed (Pts 4-7, 59R14106)	Welland Securities (1964) Ltd.	The Regional Municipality of Niagara
November 5, 1991	Deed	Welland Securities (1964) Ltd.	Marineland of Canada Inc.
December 12, 2002	Deed	Marineland of Canada Inc.	Marineland of Canada Inc.
March 3, 2017	Deed	The Regional Municipality of Niagara	Marineland of Canada Inc.
December 29, 2017	Deed (Present Owner)	Marineland of Canada Inc.	2610832 Ontario Inc.

A copy of the Chain of Title documents is available in **Appendix D.**

3.1.5 City Directories

Wood reviewed city directories for the Phase One Property and surrounding areas for various years between 1928 and 2014, available at Brock.

Phase One Property:

According to the city directories review, the Phase One Property has been occupied by a golf course of varying names since 1970 and was listed as being 4527 Chippawa Creek Parkway until 1980. Before 1970, the addresses were not listed in the city directories.

From	To	Occupant
1980	2014	Oakland's Golf Course
1970	1975	Oakland's Golf and Country Club Oakland's Pro Shop

Surrounding Properties:

According to the city directories reviewed, the following occupants were listed at the properties surrounding the Phase One Property that may have impacted its environmental condition:

From	To	Occupant
9015 Stanley Avenue (adjacent to the west of the Phase One Property, across Stanley Avenue)		
1985	2014	King Waldorf's Tent & Trailer Park - formerly Oaklands Tent & Trailer Park Ltd.
5795 Don Murie Street (approximately 190 m NW, across the Welland River)		
2014		Edscha of Canada Augustine Group Innovative Civil Constructors Inc Viking Rigging Solutions
1990	2010	Edscha of Canada
9565 Stanley Avenue (approximately 30 m S, across Lyons Creek Road and Lyons Creek)		
2014		Bingley Windows Siding & Roofing
2010		Residential

3.1.6 Environmental Reports

No previous environmental reports were available for the Phase One Property.

3.2 Environmental Source Information

3.2.1 Local Municipal Agencies

Wood submitted an online request to the Regional Municipality of Niagara (RMON) Online Environmental Records Search Application on January 23, 2020 to inquire if they had records of environmental concerns with the Phase One Property.

A response dated January 24, 2019 was received from the City. The response included a map of Potential Pollution Sources located within 500 m of the Phase One Property. No pollution sources were identified on the Phase One Property or immediately surrounding the Phase One Property. Some identified pollution sources were located on the north side of the Welland River, and included a landfill Phase One Property, current and past manufacturing and air emissions sources. In addition, past manufacturing was identified east of the Phase One Property, on the opposite side of Lyons Creek and Lyons Creek Road. Lastly, a small landfill site was located on the south side of Lyons Creek on Ort Road. Due to the presence of the Welland River and Lyon's Creek between the Phase One Property and the industrial uses, none of the noted land uses are expected to represent a significant concern with respect to the environmental condition of the Phase One Property.

A response, dated January 21, 2019, was received from the RMON's Public Works Water & Wastewater Services branch. The Environmental Record Search indicated they did not find any documents in their Niagara Falls Misc. Files (1991-present), Action Request/Violation Notices (1985-present) or Incident Reports (2001-present) related to environmental concerns, orders, spills, inspections or permits pertaining to the Phase One Property.

A copy of the RMON correspondence are provided in **Appendix E**.

3.2.2 Technical Standards and Safety Authority

Fuel storage at industrial facilities in Ontario is regulated by the *Technical Standards and Safety Act 2000* (*TSS Act*). The *TSS Act* has consolidated the seven acts that the TSSA previously administered, including the *Gasoline Handling Act* and the *Energy Act*. Under the *TSS Act*, the *Liquid Fuel Handling Regulation*, *Liquid Fuel Handling Code* and the *Environmental Management Protocol* (also known as GA1/99) have replaced the *Gasoline Handling Act*, The *Gasoline Handling Code* and *GH13* (1993 Environmental Cleanup Guideline). The *TSS Act* applies to all storage tank systems utilized for the storage and handling of gasoline, diesel and fuel oil. According to discussions with a representative of the TSSA - Fuels Safety Division, underground storage tanks (USTs) and aboveground storage tanks (ASTs) installed under the *Liquid Fuel Handling Regulation*, *Liquid Fuel Handling Code* require registration with the TSSA. Fuel oil tanks utilized in residential buildings will also require registration with the TSSA.

The TSSA was contacted by email and requested to supply any available information concerning the presence of petroleum storage tanks, fuel spill records, accidents, or fuel-related incidents, which may be registered on the subject, or surrounding properties. The TSSA responded by email

on January 4, 2019 and indicated that they have no record of fuel storage tanks at the Phase One Property or surrounding properties.

A copy of the TSSA response is provided in **Appendix E**.

3.2.3 Provincial Government Sources

3.2.3.1 Ministry of the Environment, Conservation and Parks

Through the Freedom of Information (FOI) and Protection of Privacy Office the Ministry of the Environment, Conservation and Parks (MECP) was requested to identify any outstanding actions, violations, control orders, summons, complaints, spills hazardous waste documents, or certificates of approval for the Phase One Property. The request to the FOI department involved an electronic search of their records since 1985. Information filed with the MECP prior to 1985 is not included in the FOI records search. Retrieval of such information requires a manual document search by the MECP initiated by a specific request and additional fees.

A response was received from the MECP dated February 5, 2019. After a thorough search of their files, the MECP notified Wood that they do have records of complaints for the property and the information would be forwarded to Wood. This information was not received and Wood will follow up with the MECP prior to the RSC filing.

A copy of the MECP correspondence is included in **Appendix E.**

3.2.3.2 Waste Disposal Phase One Property Inventory

Wood reviewed the document entitled "*Waste Disposal Phase One Property Inventory*", prepared by the Waste Management Branch of the MECP (dated June 1991). No active or closed waste disposal sites were listed as being present within one kilometre (km) of the Phase One Property.

3.2.3.3 Inventory of Coal Gasification Plant Waste Sites in Ontario

Wood reviewed the document entitled *"Inventory of Coal Gasification Plant Waste Sites in Ontario"*, prepared for the MECP (dated April 1987) and *"Inventory of Industrial Sites Producing or Using Coal Tar and Related Sites in Ontario"*, prepared for the MOE (dated November 1988). No coal tar or waste Sites were listed within the Phase One Study Area.

3.2.3.4 Brownfields Environmental Phase One Property Registry

The MECP on-line Brownfields Environmental Phase One Property Registry was accessed on January 3, 2019 to determine if any RSCs have been filed under Part XV.1 under the *Environmental Protection Act* (EPA) for the Phase One Property or any of the surrounding properties since October 1, 2004. A search of the registry indicated that there are no RSCs filed for the Phase One Property and surrounding properties.

3.2.3.5 Ontario Oil, Gas and Salt Resources

The Ontario Oil, Gas and Salt Resources Library (*http://www.ogsrlibrary.com/maps/index.php*), maintained by the Oil, Gas and Salt Resources Corporation (OGSRC) was accessed on March 10, 2020. No test wells, disposal wells, oil wells, or gas wells were found to have been in the Phase One Study Area.

3.2.4 Environmental Risk Information Services Ltd. (ERIS)

A standard ERIS database report was obtained for the Phase One Property and Phase One Study Area. ERIS is a national service that provides Phase One Property specific environmental and property-use information. An ERIS report contains detailed government and private sector records concerning possible environmental liabilities associated with a property and the surrounding neighbourhoods.

For the purposes of this report, the ERIS Project number is 20180627025. The ERIS report identified information potentially relevant to the environmental conditions of the Phase One Property and are summarized by location as follows:

Phase One Property (8970 Stanley Avenue)

- Permit to Take Water
- Waste Generator Registration in 2001 for Class 252 – Waste Oils and Lubricants

Marineland of Canada Inc, 9015 Stanley Avenue (approx. 20 m to the west of the Phase One Property)

- This property has a record for an ECA for Municipal and Private Sewage Works.

None of the other records in the ERIS report were significant with respect to the environmental condition of the Phase One Property. Based on the review of the above-noted information

sources, the Phase One Property historically acting as a waste generator for waste oils and lubricants represents an environmental concern. The complete findings of the ERIS search may be referenced **Appendix F**.

3.3 Physical Setting Sources

3.3.1 Aerial Photographs

Aerial photographs of the Phase One Study Area were obtained from the Brock Map Library for the years 1955, 1960, 1965, 1970, 1975, 1980, 1983, 1989, and 1994 and from Niagara Navigator for the years 1934, 2000, 2006, 2010, and 2015. The earliest available aerial for the Phase One Property was for the year 1934 and was reviewed. An interval of approximately 5-10 years between each aerial, subject to aerial availability and scale, was deemed sufficient to characterise changes at the Phase One Property during its history. During periods of rapid change at the Phase One Property and surrounding properties, an attempt was made to reduce the interval between aerials to gain a better understanding of the Phase One Property and the surrounding area.

The following significant information concerning the Phase One Property and its surrounding properties was inferred from the aerial photographs reviewed:

Date	Phase One Property	Surrounding Properties
1934	The Phase One Property appeared to be an agricultural field.	Immediately north of the Phase One Property was the Welland River. North of the Welland River was agricultural land use. All other surrounding properties were also agricultural lands.
1955	No significant changes observed.	No significant changes observed.
1960	No significant changes observed.	No significant changes observed.
1965	No significant changes observed.	To the west of the Phase One Property, the lands have been developed for a campground.
1970	No significant changes observed.	No significant changes observed.
1975	The Phase One Property had been developed as a golf course.	North of the Welland River, some of the land had been developed for industrial/commercial land use. To the south of the Phase One Property, some of the lands had been developed for residential land use.
1980	No significant changes observed.	More industrial/commercial land use had been developed to the north of the Welland River. The campground to the west of the Phase One Property had expanded.

Date	Phase One Property	Surrounding Properties
1983	No significant changes observed.	No significant changes observed.
1989	No significant changes observed.	The lands to the north of the Phase One Property, across the Welland River had been developed by Marineland as an amusement park.
1994	No significant changes observed.	No significant changes observed.
2000	Cleared portion of land at the northeast corner of Stanley Avenue and Lyons Creek Road. No other significant changes observed.	No significant changes observed.
2006	Cleared portion appears to have soil disturbance or potential fill. No other significant changes observed.	No significant changes observed.
2010	No significant changes observed.	No significant changes observed.
2015	No significant changes observed.	No significant changes observed.

Copies of the aerial photographs are presented in **Appendix G**.

3.3.2 Topography, Hydrology, Geology

The Phase One Property lies at an approximate elevation of 177 metres above sea level (mASL). The UTM coordinates at the approximate centre of the Phase One Property are 656587 m east and 4767656 m north (NAD 83 UTM 17N). The topography across the Phase One Property is relatively flat, however, slopes steeply at the north end towards the Welland River.

According to the **2010 Surficial Geology of Southern Ontario Miscellaneous Release – Data 128 REV**, published by the **Ontario Geological Survey (OGS)**, the geology near the Phase One Property is interpreted to consist of fine textured glaciolacustrine deposits consisting of silt and clay with minor sand, and described as massive to well laminated.

The **2007 Paleozoic Geology of southern Ontario Miscellaneous Release – Data 219**, published by the **Armstrong, D.K. and Dodge, J.E.P. of the OGS**, describes the bedrock in the area to consist of dolostone, shale and evaporites of the Salina Formation. Bedrock is anticipated to be encountered at depths in the range of 26 to 44 metres below ground surface (mbgs) (**Bedrock Topography of the Niagara and Niagara-on-the-Lake Area, Southern Ontario**, Ontario Geological Survey Preliminary Map P.2400, 1981).

The regional ground water flow direction, based on topographic features and knowledge gained from other Sites in the area, is expected to be generally to the north towards the Welland River. Locally, however, the shallow ground water flow may be influenced by underground utility trenches, conduits, and structures, variations in soil type, and minor fluctuations in topography.

3.3.3 Water Bodies and Areas of Natural Significance

The Welland River is located approximately 15 m north of the western parcel, approximately 30 m north of the central parcel, and approximately 30 m north of the eastern parcel. Lyon's Creek is also located approximately 35 m to the south of the Phase One Property across Lyon's Creek Road. Therefore, the Phase One Property does include land that is within 30 m of a "water body".

Based on a review of the Ministry of Natural Resources and Forestry's Natural Heritage Areas map, there is a Provincially Significant Wetland (PSW) that is located as little as less than 5 m to the north of most of the Phase One Property. Therefore, the Phase One Property is within 30 m of land that is considered an Area of Natural Significance and is therefore classified as an Environmentally Sensitive Area.

3.3.4 Well Records

At the time of reconnaissance, Wood did not note the presence of any domestic drinking water wells on the Phase One Property. No additional water wells, test wells, disposal wells, oil, gas or salt wells were observed at the Phase One Property by Wood during the reconnaissance.

A search of the MECP Well Records Database conducted by Wood on January 3, 2019 showed no water well records for domestic (potable) ground water wells on the Phase One Property, however, one (1) domestic (potable) ground water well was identified within the study area, approximately 130 m to the southwest. An observation or monitoring well was also identified approximately 175 m northwest of the Phase One Property.

3.4 Phase One Property Operating Records

The Phase One Property is not currently, nor has it historically been used in whole, or in part, for an industrial use. No Phase One Property operating records were available.

3.5 Summary of Records Review

Phase One Property

According to the records review, the first use of the Phase One Property was 1975 when the Phase One Property was developed for commercial property use as a golf course. It appears to have remained in this use until present day.

Based on the records review, two potentially contaminating activities (PCAs) were identified in relation to activities at the Phase One Property that resulted in areas of potential environmental concern (APECs) as follows:

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity*	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC-1: General use of the maintenance workshop and shed to maintain equipment associated with site operations	Northwestern area of the property (area inside and surrounding maintenance workshop and shed)	#52 – storage, maintenance, fueling and repair of equipment, vehicles, and material used to maintain transportation systems	On-Site (inside maintenance workshop and shed)	PHCs/VOCs/ Metals/PCBs	Soil and Ground Water
APEC-2: Fuel storage (in ASTs) fuel equipment associated with site operations	Northwestern area of the property (area inside and surrounding maintenance workshop and shed)	#28 – gasoline and associated products storage in fixed tanks	On-Site (inside maintenance workshop and shed)	PHCs/VOCs/ Metals/PCBs	Soil and Ground Water
APEC-3: Potentially contaminated fill materials	Southwestern corner of the Phase One Property (southern area of the western parcel)	#30 – importation of fill material of unknown quality	On-Site (Southwestern corner of the Phase One Property)	Metals/PHCs/ BTEX	Soil

PHCs – Petroleum Hydrocarbons, VOCs – Volatile Organic Compounds, BTEX – Benzene, Toluene, Ethylbenzene, and Xylene, PCBs – Polychlorinated Biphenyls

Surrounding Properties

Wood identified one PCA that is not believed to have resulted in APECs at the Phase One Property:

- Identified in the environmental review by the City of Niagara Falls and provided to Wood, approximately 110 m southeast of the Phase One Property was a former landfill (the Ort Road Landfill; PCA #58). However, due to separation distance and the presence of Lyon's Creek between the former landfill and the Phase One Property, this PCA does not result in an APEC at the Phase One Property.

4.0 INTERVIEWS

Contacts were made as required to evaluate the existing/historical Phase One Property operations and obtain additional information, as follows:

Name or Affiliation	Position	Interview Details (Date, Place, Method, Reason for Interview)	Validity of Information from Interview
Mr. Ralph Terrio	Property Manager	The 'Record of Interview' form was completed with Mr. Terrio on January 24, 2019 directly following the Phase One Property reconnaissance on the same day. Mr. Terrio is knowledgeable about operations at Phase One Property from working at the property for a year prior to the interview.	Information provided by Mr. Terrio is included throughout the report as required.

Pertinent information obtained during the interviews are noted in the applicable portions of Section 5. Records of the interviews are provided in **Appendix E**.

5.0 PHASE ONE PROPERTY RECONNAISSANCE

5.1 General Requirements

Under the supervision of Patrick Shriner, P.Geo., QP, Loren Kamps, EPt., of Wood conducted a reconnaissance on January 24, 2019 and February 8, 2019 to evaluate possible Phase One Property issues, and to assess whether any surrounding land uses may have and/or are currently impacting the environmental condition of the Phase One Property. On the day of the reconnaissance the weather was approximately 0°C with overcast (January 24, 2019) and -4°C with overcast (February 8, 2019). Ground cover conditions at the time were wet and snow covered.

5.2 Specific Observations at Phase One Property

5.2.1 Phase One Property Description and Buildings

At the time of the reconnaissance, three buildings were present on the Phase One Property: The main clubhouse building, a maintenance workshop/golf cart storage building and a shed. The building foundation was primarily concrete block, with no basement. The majority of the Phase One Property was occupied by a golf course, including related features such as semi-maintained grass and other vegetation, greens, tee boxes, fairways, sand traps, and ponds. The Phase One Property was also partially fenced along the western edge. Gates are present along each entrance to the property at the perimeter.

The flooring in the maintenance building/garage was mainly concrete with some areas of dirt and gravel flooring, while the maintenance shed had a dirt and gravel floor. The interior walls in both maintenance buildings were plywood, while the exterior was siding.

The heat source for the buildings was three electric heat pumps located on the exterior of the clubhouse, however the buildings are not heated in the winter. These pumps were only used for heat during cool days at the beginning and end of the golf season. These pumps were used for air conditioning purposes in the summer as well. It is believed that the buildings have not had any other historic heat source. No evidence (e.g., fill or vent pipes) of potential historic oil or coal heating sources was observed during the reconnaissance.

Selected photographs of the Phase One Study Area are presented in **Appendix H**.

5.2.2 Utility Easements

According to the Chain of Title obtained by Wood, The Consumers' Gas Company purchased an easement of the western parcel of the Site in 1972. This is assumed to have been for natural gas.

5.2.3 Drains, Pits and Sumps

Wood is not aware of any drains, pits, or sumps on the Phase One Property.

5.2.4 Tanks

The Phase One Property representative advised Wood that he was not aware of any ASTs or USTs at the Phase One Property. Wood did not observe any ASTs or USTs during the reconnaissance and did not observe fill or vent pipes suggesting the presence of USTs. As previously noted, the TSSA did not have any records of ASTs or USTs registered to the Phase One Property. However, according to the *Simmlands Clubpac Property & Liability Evaluation* report provided through Opta, two ASTs, 2,000 L each, were present at the Site in 2003 with an estimated age of 1990; ASTs are not visible through air photos and therefore the locations are unknown. In the case that the ASTs were for waste oil (ERIS indicates the Site is registered as a waste generator) purposes or re-fueling of golf carts, it is estimated that the ASTs were in the vicinity of the maintenance building with golf cart storage.

5.2.5 Phase One Property Production and Manufacturing

No manufacturing activities are currently taking place nor have historically occurred on the Phase One Property.

5.2.6 Chemical Storage/Handling and Floor Condition

Chemicals or hazardous materials such as minor amounts of motor oil, hydraulic oil, varsol, Mirage Stressgard (fungicide), Roundup (liquid herbicide) and jerry cans of gasoline were observed in the maintenance shed at the time of the reconnaissance. Potential environmental issues regarding chemical storage at the Phase One Property were identified due to pesticide storage, petroleum odour within the maintenance shed, and flooding.

Wood was also informed that solvents were used for cleaning purposes in the workshop within the maintenance shed when servicing golf carts and lawn maintenance equipment.

The condition of the flooring in the maintenance building/garage was good, however there was flooding and petroleum-like odours noted in the maintenance shed.

5.2.7 Areas of Stained Soil or Pavement, or Stressed Vegetation

Wood conducted a walkover of the Phase One Property and did not observe any areas of ground staining or stressed vegetation (under winter conditions). Due to the above noted flooding and odours, it is likely that the floor in the maintenance shed has some surface staining.

5.2.8 Spills

Wood is not aware of any chemical spills having occurred at the Site. Potential evidence of a petroleum spill/leak is suspected due to odour and flooding within the maintenance shed.

5.2.9 Fill / Debris

In general, the Site appeared to be moderately well maintained. Wood did not observe significant amounts of debris on-Site at the time of the reconnaissance. However, moderate amounts of waste/garbage storage were observed in and around the maintenance shed.

At the time of the reconnaissance, the Site was generally graded even with the surrounding properties. However, aerial photographs observed appear to show a cleared portion of land at the northeast corner of Stanley Avenue and Lyons Creek Road in 2000. In the 2006 air photo, the cleared portion appears to have soil disturbance or potential infilling. As such, this represents a potential environmental concern.

5.2.10 Methane

Methane is a colourless and odourless gas commonly formed by the decomposition of organic material. Methane is a large component of natural gas associated with active and closed waste disposal sites. Natural sources of methane include marshes, swamps, bogs, fens or coal and/or peat deposits. Potential risks associated with methane include explosion hazards where methane enters closed spaces and concentrations exceed the lower explosive limit.

Based on observations made at the time of the reconnaissance, no significant amounts of potentially methane-generating fill materials were noted to have been placed on the Phase One Property and no putrescible materials were observed.

The environmental review completed by the City of Niagara Falls did note two landfills on surrounding properties. The Marineland Park Landfill is located approximately 400 m north of the Phase One Property. Additionally, the Ort Road Landfill was located approximately 110 m southeast of the Phase One Property. Due to the separation distances, and the presence of the Welland River and Lyon's Creek between the Phase One Property and these landfills, methane gas is not inferred to be an environmental issue at the Phase One Property.

5.2.11 Radon

Radon is a naturally occurring gas produced by Uranium-238 decay and tends to concentrate in formations of granite, sandstone, coal, phosphate and uranium deposits. It percolates through soil, where it may accumulate in basements of buildings. As the existence of radon is dependent upon geological factors, it is more of a regional concern than Phase One Property-specific.

The location of the Phase One Property was evaluated against the locations of a soil radon gas study published by the Ontario Geological Survey (OGS) (19) (20). The City and the location of the Phase One Property are not within the four main study areas investigated by the OGS. Wood is not aware of other records of the presence or emission of radon gas in the immediate area of the City. Based on this information, Wood does not suspect radon gas to be a significant environmental issue at the Phase One Property.

5.2.12 Air Emissions and Odours

As previously noted, Wood observed flooding of approximately 5-8 cm and petroleum odours inside the shed on the Phase One Property. Otherwise, Wood did observe the presence of air emission sources at the time of the reconnaissance that could possibly affect the environmental condition of the Phase One Property (i.e., building surfaces and/or surficial soils). No significant environmental issues regarding air emissions at the Phase One Property have been identified during the reconnaissance.

5.2.13 Mould

Moulds (also known as filamentous fungi) are present everywhere in the natural environment, indoors and outdoors. Mould growth can occur on building materials that are impacted by moisture and/or water. The extent of potential mould growth was not investigated as part of this report. Wood noted the particle board on the walls and ceiling of the maintenance shed appeared to be heavily stained with a black and grey colour, and possibly contained mould.

5.2.14 Designated Substances and Hazardous Building Materials

There are eleven designated substances that are regulated by the Occupational Health & Safety Act (OHSA) (21), including asbestos, lead, mercury, silica, arsenic, acrylonitrile, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

5.2.14.1 Asbestos

Asbestos refers to a group of naturally occurring fibrous mineral silicates that is known to have been used in over 3,000 products. Friable asbestos materials can be readily crumbled using hand pressure, separating asbestos fibres from the associated binding materials and is commonly seen in boiler and pipe insulation. Non-friable asbestos is associated with a binding agent that prevents the ready release of airborne fibres and is typically found in roofing tars, floor and drywall compound, plaster and pre-cast asbestos cement products commonly referred to as "transite" (e.g., roof drains and transite panels).

Suspected ACMs were identified in the form of ceiling tiles, drywall joint compound, shingles, and concrete block and brick mortars. In addition, due to the age of the Site buildings (i.e., early 1970s) it is likely that other ACMs are present.

5.2.14.2 Lead

Lead is a heavy metal, which is typically found in the following three forms:

- Metallic lead used to make water distribution pipes, electrical batteries, lead solder, and electric cable sheathes;
- Inorganic compounds often occurring as components of products, such as insecticides, pigments, paints, and glass; and
- Organic lead compounds, the most commonly known of which are tetramethyl lead and tetraethyl lead, used as antiknock additives to gasoline.

The presence of lead-containing paints (LCPs) in buildings represents the most significant hazard of all the above noted lead containing products where persons, notably small children, may ingest peeling or flaking LCPs. The generation of airborne lead containing dust created during renovation, demolition, or construction activities (i.e., during sanding and grinding), or like actions on deteriorated painted surfaces also comprises a potential health concern.

In 1976, the federal government passed the Hazardous Products (Liquid Coating Materials) Regulations under the Hazardous Products Act limiting the amount of lead for interior paints to 0.5%. Exterior and commercial paints could still contain lead. In 1991, members of the Canadian Paint and Coatings Association agreed to voluntary eliminate all added lead from their products. In November 2010, under the Canadian Hazardous Products Act, the Federal Government issued revisions to the Surface Coating Materials Regulations SOR/2005-109, which limits the amount of lead permissible in paints and other surface coating materials to 0.009% lead by dry weight (i.e., 90 micrograms per gram [µg/g]).

The Site buildings were noted to contain painted surfaces. Most of these painted surfaces were noted to exist in good condition. Considering the age of these buildings (i.e., early 1970s) it is likely that LCPs exist.

5.2.14.3 Mercury

Minor amounts of mercury are commonly found in a variety of building materials including mercury vapour lamps and thermostats and other electrical control switches. Mercury vapour is suspected to be present in fluorescent and high intensity discharge (HID) lamps. Mercury is suspected to be present in thermostats. Given the potential quantities of mercury present and their intended use, no potential concerns are expected.

5.2.15 Unidentified or Other Substances

No unidentified substances were observed at the Phase One Property.

5.2.15.1 Urea Formaldehyde Foam Insulation

Urea formaldehyde foam insulation (UFFI) was typically made at a construction Phase One Property from a mixture of urea-formaldehyde resin, a foaming agent, and compressed air. The mixture was injected as a thermal insulating material for difficult-to-reach cavities in walls of existing buildings in the 1970s. The urea and formaldehyde 'cured' into insulating foam plastic. UFFI was discontinued in 1980 after its ban in Canada under the HPA.

Visual indicators suggesting the possible presence of UFFI were not observed at the Site.

5.2.15.2 Polychlorinated Biphenyls

PCB-containing products (e.g., oil in light ballasts and liquid-filled transformers) were manufactured for use in applications where stable, fire-resistant, and heat-transfer properties

were demanded between 1926-29 and 1977. Most PCBs were sold for use as dielectric fluids (insulating liquids) in electric transformers and capacitors. Other uses included heat transfer fluid, hydraulic fluid, dye carriers in carbonless copy paper, plasticizers in paints, adhesives, and caulking compounds.

In Canada, PCBs were prohibited from being used in products, equipment, machinery, electrical transformers and capacitors that were manufactured or imported into the country after July 1980. However, older equipment in use after this date may still contain PCBs if the equipment's fluid has not been changed, or if there was sufficient inventory of such equipment.

The presence of fluorescent light fixtures was observed within the Site buildings. Given the date of construction of the Site buildings (i.e., early 1970s), the light ballasts at the Site may contain PCBs as the use of PCBs in light ballasts was not discontinued until the early 1980s. Wood did not note the presence of any leaking light ballasts at the time of reconnaissance, and the Site representative indicated that light ballasts are replaced as required.

A transformer was noted to be present on a pole supporting inferred electrical power lines on the western border of the Phase One Property. The age of the transformer is unknown and therefore the presence of PCBs within the transformer is possible.

5.2.15.3 ODS

ODSs include any substances containing chlorofluorocarbon (CFC), hydrochlorofluorocarbon (HCFC), halon or any other material capable of destroying ozone in the atmosphere. ODSs have been used in rigid polyurethane foam and insulation, laminates, aerosols, air conditioners, fire extinguishers, cleaning solvents and the sterilization of medical equipment. Federal regulations introduced in 1995 required the elimination of production and import of CFCs by January 1, 1996 (subject to certain essential uses) and a freeze on the production and import of HCFC-22 by January 1, 1996. These regulations also require the complete elimination of HCFC-22 by the year 2020.

Three (3) electric heat pumps are located on the exterior of the club house. These pumps are also used for air conditioning purposes, therefore, there is a potential for ODS to be present.

5.2.15.4 Radioactive Materials

The Canadian Nuclear Safety Commission (CNSC) is responsible for the management and licensing of radioactive materials, to ensure that the use of nuclear energy and materials do not

pose undue risk to health, safety, security and the environment. Industrial equipment such as X-ray imagers, metal detection devices and measuring devices may contain radioactive materials and may be a hazard if used or stored improperly.

Radioactive materials or equipment (labelled as such) was not observed at the Site. No testing for the presence of radioactive material was undertaken.

5.2.15.5 Animals and Pest Control

Exposure to bird/bat droppings, rodent excreta and raccoon droppings can cause adverse health effects in humans. Thus, accumulation of this material should be kept to the lowest practical level. The presence of these droppings/excreta is not inferred to be an issue at the Phase One Property.

5.3 Enhanced Investigation Property Observations

Part VI, 22(1) of *O. Reg. 511/09* defines an *enhanced investigation property* as a property where (i) a listed potentially contaminating activity has occurred or is occurring, (ii) has or is being used for industrial purposes, (iii) that is being used or has been used, in whole or in part, as a garage, as a bulk liquid dispensing facility, including a gasoline outlet, or (iv) for the operation of dry cleaning equipment.

The Phase One Property is classified as an enhanced investigation property due to the historic presence of two ASTs of unknown contents, assumed to be related to the maintenance and/or fueling of golf carts.

5.3.1 Industrial/Commercial Operations

According to Mr. Terrio, no industrial operations have ever taken place at the Phase One Property. Further, the Phase One Property has been in commercial land use as a golf course since development (i.e., early 1970s).

5.3.2 Hydraulic Lift Equipment

Mechanical equipment including piston type elevators, vehicle hoists, loading dock lifts, and compactors comprise typical hydraulically operated devices. Such equipment contains hydraulic oils which are operated under high pressures and can be released into the environment because of leaks or equipment failure.

No hydraulically driven mechanical equipment was observed by Wood at the time of the reconnaissance. Furthermore, based on the nature of historical use of the Site (i.e., use as a golf course), no major mechanical equipment is expected to have been present.

5.3.3 Vehicle/Equipment Maintenance Areas

Currently, vehicle maintenance does not take place at the Phase One Property because the golf course is closed and unexpected to re-open. However, discussions with the Phase One Property representative and observations made during the reconnaissance indicated that golf cart and other equipment maintenance took place with the maintenance workshop and shed.

5.3.4 Oil/Water Separators

No oil/water separators were observed on the Phase One Property at the time of reconnaissance.

5.3.5 Hazardous Materials Use/Storage

No hazardous materials are used or stored at the Phase One Property.

5.3.6 Generated Wastes

5.3.6.1 Liquid Waste

The generation, storage or disposal of liquid wastes was not observed at the Site at the time of the reconnaissance. However, as mentioned in Section 3.2.4, the Site was listed as a waste generator for Class 252 - Waste Oils and Lubricants.

5.3.6.2 Solid Waste

The Site is not listed in the current MECP computer database or the ERIS report as a registered generator of solid hazardous waste. The generation of non-hazardous solid waste was observed at the Site at the time of the reconnaissance in a large disposal bin in the northwest corner of the Site and is hauled by Modern Waste Solutions.

5.3.7 Liquid Discharge Points and Spills History

The Phase One Property representative was unaware of any spills or discharges that have taken place at the Phase One Property. No areas of significant surface staining or stressed vegetation (under winter conditions) were observed by Wood at the Phase One Property at the time of the

reconnaissance. However as noted in Section 5.2.8, potential evidence of a petroleum spill/leak is suspected due to odour and flooding within the maintenance shed.

5.4 Adjacent Land Uses

Wood reviewed the current land uses of neighbouring properties from publicly accessible locations to assess possible environmental impacts to the Phase One Property that may arise from off-Phase One Property operations. Properties surrounding the Phase One Property are summarized as follows:

North of the Phase One Property

North of the Phase One Property was the Welland River followed by commercial land use (Marineland).

East of the Phase One Property

East of the Phase One Property was the confluence of the Welland River and Lyon's Creek followed by residential land use.

South of the Phase One Property

South of the Phase One Property was Lyon's Creek Road and Lyon's Creek followed by agricultural and undeveloped land uses.

West of the Phase One Property

West of the Phase One Property was Stanley Avenue and commercial use (Oaklands Campground) followed by undeveloped land.

Summary

No PCAs were identified on properties within the Phase One Study Area during the reconnaissance.

5.5 Written Description of Investigation

Findings of Wood's inspection and interviews were outlined throughout this section of our report. In summary, the reconnaissance and related inquiries identified six PCAs on the Phase One Property that resulted in APECs as follows:

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity*	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC-1: General use of the maintenance workshop and shed to maintain equipment associated with site operations	Northwestern area of the property (area inside and surrounding maintenance workshop and shed)	#52 – storage, maintenance, fueling and repair of equipment, vehicles, and material used to maintain transportation systems	On-Site (inside maintenance workshop and shed)	PHCs/VOCs/ Metals/PCBs	Soil and Ground Water
APEC-2: Fuel storage (in ASTs) fuel equipment associated with site operations	Northwestern area of the property (area inside and surrounding maintenance workshop and shed)	#28 – gasoline and associated products storage in fixed tanks	On-Site (inside maintenance workshop and shed)	PHCs/VOCs/ Metals/PCBs	Soil and Ground Water
APEC-3: Potentially contaminated fill materials	Southwestern corner of the Phase One Property (southern area of the western parcel)	#30 – importation of fill material of unknown quality	On-Site (Southwestern corner of the Phase One Property)	Metals/PHCs/ BTEX	Soil
APEC-4: Use of pesticides throughout the golf course	Majority of the eastern and central parcels of the property and the central portion of the western parcel	#40 – pesticides (including herbicides, fungicides and anti-fouling agents) manufacturing, processing, bulk storage and large-scale applications	On-Site (greens, fairways, and tee boxes of the golf course and driving range)	Organochlorine pesticides	Surface Soils
APEC-5: Pesticide storage	Inside the maintenance shed	#40 – pesticides (including herbicides, fungicides and anti-fouling agents) manufacturing, processing, bulk storage and large-scale applications	On-Site (inside the maintenance shed)	Organochlorine pesticides	Surface Soils
APEC-6: Presence of electrical transformer	Western edge of the property underneath the electrical pole	#55 - transformer manufacturing, processing and use	On-Site (located on an electrical pole on the western edge of the property)	PCBs	Soil

No PCAs were identified on properties within the Phase One Study Area during the reconnaissance.

A Copy of Wood's Interview notes are provided in **Appendix E** and were outlined throughout this report.

6.0 REVIEW AND EVALUATION OF INFORMATION

6.1 Current and Past Uses

According to historical records obtained by Wood, including aerial photography and discussions from the Phase One Property representative, the history of the occupancy of the Phase One Property is as follows:

PIN # 64255-0009 & 64255-0012:

Years	Name of Owner	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, etc.
Prior to 1796	Crown	Undeveloped	Agricultural or Other Use	Inferred. No other documentation available.
1796-1819	William Lyons	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1819-1825	Thomas Cummings	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1825-1848	Wilbert Micking	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1848-1889	George Micking	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1889-1928	William Walmsley	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1928-1931	Harry Oakes	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1931-1966	Welland Securities Ltd.	Field Crops	Agricultural or Other Use	This property use is inferred based on title search and 1934, 1955, 1960, and 1965 aerial photographs. FIPs and city directories not available.

Years	Name of Owner	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, etc.
1966-1970	Welland Securities (1964) Ltd.	Field Crops	Agricultural or Other Use	This property use is inferred based on title search and city directories. FIPs not available.
1970-1991	Welland Securities (1964) Ltd.	Developed Golf Course (Oakland's Golf and Country Club and Oakland's Pro Shop [until 1980], Oakland's Golf Course [post-1980])	Commercial	This property use is inferred based on title search, 1975, 1980, 1983, and 1989 aerial photographs, and city directories. FIPs not available.
1991-2017	Marineland of Canada Inc.	Developed Golf Course (Oakland's Golf Course)	Commercial	This property use is inferred based on title search, 1994, 2000, 2006, 2010, and 2015 aerial photographs, and city directories. FIPs not available.
2017-Present	2610832 Ontario Inc.	Developed Golf Course (Oakland's Golf Course)	Commercial	This property use is inferred based on the title search, Phase One Property reconnaissance, and interviews. FIPs and city directories not available.

PIN # 64255-0337:

Years	Name of Owner	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, etc.
Prior to 1811	Crown	Undeveloped	Agricultural or Other Use	Inferred. No other documentation available.
1811	John Burch	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1811-1824	Lanty Shannon	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.

Years	Name of Owner	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, etc.
1824-1830	William Terry	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1830-1831	John Darling	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1831-1866	David Davis	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1866-1872	James Cranes	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1872-1921	Andrew Simpson	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories, and aerial photographs not available.
1911-1934	Charles Kimele	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership, title search, and the 1934 aerial photograph. FIPs and city directories not available.
1934-1972	George Glasgow	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership, title search, and the 1934, 1955, 1960, 1965, and 1970 aerial photographs. FIPs not available.
1958-1971	Andrew Harris & Shirley Harris	Field Crops	Agricultural or Other Use	This property use is inferred based on title search and 1960, 1965, and 1970 aerial photographs. FIPs not available.
1971-1991	Welland Securities (1964) Ltd.	Developed Golf Course (Oakland's Golf and Country Club and Oakland's Pro Shop [pre-1980], Oakland's Golf Course [post-1980])	Commercial	This property use is inferred based on title search, 1975, 1980, 1983, and 1989 aerial photographs, and city directories. FIPs not available.

Years	Name of Owner	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, etc.
1976-2017 (Pts 4-7, 59R14106)	The Regional Municipality of Niagara	Developed Golf Course (Oakland's Golf and Country Club and Oakland's Pro Shop [pre-1980], Oakland's Golf Course [post-1980])	Commercial	This property use is inferred based on title search, 1980, 1983, and 1989, 1994, 2000, 2006, 2010, and 2015 aerial photographs. FIPs not available.
1991-2017	Marineland of Canada Inc.	Developed Golf Course (Oakland's Golf Course)	Commercial	This property use is inferred based on title search, 1994, 2000, 2006, 2010, and 2015 aerial photographs, and city directories. FIPs not available.
2017-Present	2610832 Ontario Inc.	Developed Campground (Oaklands Campground)	Parkland	This property use is inferred based on the title search, Phase One Property reconnaissance, and interviews. FIPs and city directories not available.

Additionally, The Consumers' Gas Company purchased an easement on the western parcel of the Phase One Property from Welland Securities (1964) Ltd. in 1972, and it does not appear that this easement has been released to a subsequent owner.

6.2 Potentially Contaminating Activities and Areas of Potential Environmental Concern

Wood's findings regarding potential areas of environmental concern as a result of the Records Review are presented in Section 3.5, and findings as a result of Interviews and the Phase One Property Phase One Property reconnaissance are presented in Section 5.5. Based on the findings of the Phase One ESA, six PCAs have been identified associated with activities at the Phase One Property which result in APECs as follows:

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity*	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC-1: General use of the maintenance workshop and shed to maintain equipment associated with site operations	Northwestern area of the property (area inside and surrounding maintenance workshop and shed)	#52 – storage, maintenance, fueling and repair of equipment, vehicles, and material used to maintain transportation systems	On-Site (inside maintenance workshop and shed)	PHCs/VOCs/ Metals/PCBs	Soil and Ground Water
APEC-2: Fuel storage (in ASTs) fuel equipment associated with site operations	Northwestern area of the property (area inside and surrounding maintenance workshop and shed)	#28 – gasoline and associated products storage in fixed tanks	On-Site (inside maintenance workshop and shed)	PHCs/VOCs/ Metals/PCBs	Soil and Ground Water
APEC-3: Potentially contaminated fill materials	Southwestern corner of the Phase One Property (southern area of the western parcel)	#30 – importation of fill material of unknown quality	On-Site (southwestern corner of the Phase One Property)	Metals/PHCs/ BTEX	Soil
APEC-4: Use of pesticides throughout the golf course	Majority of the eastern and central parcels of the property and the central portion of the western parcel	#40 – pesticides (including herbicides, fungicides and anti-fouling agents) manufacturing, processing, bulk storage and large-scale applications	On-Site (greens, fairways, and tee boxes of the golf course and driving range)	Organochlorine pesticides	Surface Soils
APEC-5: Pesticide storage	Inside the maintenance shed	#40 – pesticides (including herbicides, fungicides and anti-fouling agents) manufacturing, processing, bulk storage and large-scale applications	On-Site (inside the maintenance shed)	Organochlorine pesticides	Surface Soils
APEC-6: Presence of electrical transformer	Western edge of the property underneath the electrical pole	#55 - transformer manufacturing, processing and use	On-Site (located on an electrical pole on the western edge of the property)	PCBs	Soil

PHCs – Petroleum Hydrocarbons, VOCs – Volatile Organic Compounds, BTEX – Benzene, Toluene, Ethylbenzene and Xylene, PCBs – Polychlorinated Biphenyls

6.3 Phase One Conceptual Phase One Property Model

The Phase One CSM provides a description of the areas where potentially contaminating activities occurred, a physical description of the Phase One Property including the geology, hydrogeology and sub-surface structures that can influence the potential movement of any contaminants that may have been released, and any known contaminant impacts to the Phase One Property.

The CSM is described in the following figures: **Figure 1** is the Property Location Map (Key Plan); **Figure 2** illustrates the existing layout of the Phase One Property; **Figure 3** includes the CSM and the Phase One ESA Study Area.

6.3.1 Physical Setting

6.3.1.1 Topography and Hydrogeology

The Phase One Property lies at an approximate elevation of 177 metres above sea level (mASL). The UTM coordinates at the approximate centre of the Phase One Property are 656587 m east and 4767656 m north (NAD 83 UTM 17N). The topography across the Phase One Property is relatively flat, however, slopes steeply at the north end towards the Welland River.

According to the **2010 Surficial Geology of Southern Ontario Miscellaneous Release – Data 128 REV**, published by the **Ontario Geological Survey (OGS)**, the geology near the Phase One Property is interpreted to consist of fine textured glaciolacustrine deposits consisting of silt and clay with minor sand, and described as massive to well laminated.

The **2007 Paleozoic Geology of southern Ontario Miscellaneous Release – Data 219**, published by the **Armstrong, D.K. and Dodge, J.E.P. of the OGS**, describes the bedrock in the area to consist of dolostone, shale and evaporites of the Salina Formation. Bedrock is anticipated to be encountered at depths in the range of 26 to 44 metres below ground surface (mbgs) (**Bedrock Topography of the Niagara and Niagara-on-the-Lake Area, Southern Ontario**, Ontario Geological Survey Preliminary Map P.2400, 1981).

The regional ground water flow direction, based on topographic features and knowledge gained from other Sites in the area, is expected to be generally to the north towards the Welland River. Locally, however, the shallow ground water flow may be influenced by underground utility trenches, conduits, and structures, variations in soil type, and minor fluctuations in topography.

6.3.1.2 Fill Activities and Water Wells

At the time of the reconnaissance, the Site was generally graded even with the surrounding properties. However, aerial photographs observed appear to show a cleared portion of land at the northeast corner of Stanley Avenue and Lyons Creek Road in 2000. In the 2006 air photo, the cleared portion appears to have soil disturbance or potential infilling. As such, this represents a potential environmental concern.

At the time of reconnaissance, Wood did not note the presence of any domestic drinking water wells on the Phase One Property. No additional water wells, test wells, disposal wells, oil, gas or salt wells were observed at the Phase One Property by Wood during the reconnaissance.

A search of the MECP Well Records Database conducted by Wood on January 3, 2019 showed no water well records for domestic (potable) ground water wells on the Phase One Property, however, one (1) domestic (potable) ground water well was identified within the study area, approximately 130 m to the southwest. An observation or monitoring well was also identified approximately 175 m northwest of the Phase One Property.

6.3.1.3 Water Bodies and Areas of Natural Significance (if any)

The Welland River is located approximately 15 m north of the western parcel, approximately 30 m north of the central parcel, and approximately 30 m north of the eastern parcel. Lyon's Creek is also located approximately 35 m to the south of the Phase One Property across Lyon's Creek Road. Therefore, the Phase One Property does include land that is within 30 m of a "water body".

Based on a review of the Ministry of Natural Resources and Forestry's Natural Heritage Areas map, there is a Provincially Significant Wetland (PSW) that is located as little as less than 5 m to the north of most of the Phase One Property. Therefore, the Phase One Property is within 30 m of land that is considered an Area of Natural Significance and is therefore classified as an Environmentally Sensitive Area.

6.3.1.4 Phase One Property Structures and Preferential Pathways

At the time of the reconnaissance, three buildings were present on the Phase One Property: the main clubhouse building, a maintenance workshop/golf cart storage building and a shed. The majority of the Phase One Property was occupied by a golf course, including related features such as semi-maintained grass and other vegetation, greens, tee boxes, fairways, sand traps, and ponds. The Phase One Property was also partially fenced along the western edge. Gates are present

along each entrance to the property at the perimeter. Ground cover conditions at the time were wet and snow covered.

Underground services were provided for at least municipal water and the sewage is connected to the septic bed at Oaklands Campground, the adjacent property to the west. Natural gas is connected to the club house for kitchen needs and the Site representative assumes natural gas was connected at the time of construction early 1970s. The trenches for these utilities likely remain intact. If so, they could act as preferential pathways for mobile contaminants to migrate onto or off the Phase One Property.

6.3.2 Sources of Contamination

Six sources of potential contamination at the Phase One Property have been identified as noted throughout this report, and as documented in Section 6.2. The PCAs were identified in relation to the activities of the Phase One Property acting as a golf course, in particular: two historic ASTs (PCA #28), the general use of the maintenance workshop and shed to maintain equipment (PCA #52), the suspected presence of fill materials (PCA #30), the use of pesticides throughout the golf course (PCA #40), pesticide storage inside the maintenance shed (PCA #40), and the presence of a transformer suspended on a pole (PCA #55). These resulted in APECs on the Phase One Property.

6.3.3 Contaminant Migration

PHCs and VOCs are potentially mobile, while any metal and/or inorganic-impacted soils would remain where they are found in surficial soils. Regional ground water flow direction is anticipated to be to the north towards the Welland River, however, at a local level, the shallow ground water flow may be influenced by underground utility trenches, conduits, and structures, variations in soil type, and minor fluctuations in topography. All five of the PCAs identified within the Phase One Study Area were located on the Phase One Property.

6.3.4 Uncertainty and Data Gaps

Uncertainty exists regarding the depth to ground water, and whether manmade features influence ground water flow.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Summary

Based on the Phase One ESA conducted by Wood, evidence of potential contamination associated with the Phase One Property has been identified with respect to activities of the Phase One Property acting as a golf course, in particular: two historic ASTs (PCA #28), the general use of the maintenance workshop and shed to maintain equipment (PCA #52), the suspected presence of fill materials (PCA #30), the use of pesticides throughout the golf course (PCA #40), pesticide storage inside the maintenance shed (PCA #40), and the presence of a transformer suspended on a pole (PCA #55). These resulted in APECs on the Phase One Property.

7.2 Whether Phase Two Environmental Phase One Property Assessment Required Before Record of Phase One Property Condition Submitted

A Phase Two ESA would be required at this Phase One Property to address the APECs identified in this Phase One ESA before an RSC could be submitted.

7.3 Recommendations and Potential Operational/Management Issues

The presence of suspected LCPs, ACMs, and PCBs as well as moisture/mould were identified as potential operational/management issues by Wood. To address potential operational/ management issues, Wood offers the following recommendations:

- Suspected LCPs may be present at the Phase One Property based on criteria outlined in the Canadian Hazardous Products Act – Surface Coating Materials Regulation, as revised in 2010. As enforced by the Ministry of Labour (MOL), all LCP in poor condition must be removed by a qualified lead abatement contractor as outlined in the MOL Guideline titled the *"The Control of Lead Exposures During the Removal of Lead on Construction Projects"*. Although many companies eliminated the use of lead in paint in the early 1990s, the legislative definition of LCP in Canada was revised in 2010 to include a much lower acceptable concentration of lead than was previously regulated. Based on these revised levels, paint manufactured in 1991 could still contain concentrations of lead above the regulated levels as defined in 2010.

- A Designated Substances Survey (DSS) is required if future repair, renovation or demolition activities are planned in areas of the building where suspect ACMs and LCPs are located. A DSS is required to fulfil the Owner's requirements under Section 30 of the *Ontario Occupational Health and Safety Act*, (the OHSA), Revised Statutes of Ontario 1990, (as amended). The building owner must provide the DSS report to all contractors working on the Phase One Property. Subsequently, all contractors must provide the DSS report to their subcontractors.

- Wood noted the particle board on the walls and ceiling of the maintenance shed appeared to be heavily stained with a black and grey colour, and possibly contained mould. This issue should be addressed.

8.0 CLOSURE

Under the supervision of Patrick Shriner, P.Geo., QP, Ms. Loren Kamps, EPt., of Wood conducted the Phase One Property reconnaissance. Any practice of geoscience documented within this report was undertaken by or under the supervision of a Professional Engineer or Professional Geoscientist licensed in the Province of Ontario. The Qualifications of the Assessors are provided in **Appendix I.**

This report was prepared for the exclusive use of Ricci Law Professional Corporation and is intended to provide a Phase One ESA of 8970 Stanley Avenue, Niagara Falls, Ontario, at the time of the reconnaissance. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from Wood will be required. With respect to third parties, Wood has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The report is based on data and information collected during the Phase One ESA of the property conducted by Wood. It is based solely on the conditions of the Phase One Property encountered at the time of the visit on January 24, 2019 supplemented by a review of historical information and data obtained by Wood as described in this report, and discussion with a representative of the owner/occupant, as reported herein. Except as otherwise may be specified, Wood disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to Wood after the time during which Wood conducted the Phase One ESA.

In evaluating the property, Wood has relied in good faith on information provided by other individuals noted in this report. Wood has assumed that the information provided is factual and accurate. In addition, the findings in this report are based, to a large degree, upon information provided by the current owner/occupant. Wood accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

Wood makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

This Report is also subject to the further Standard Limitations contained in **Appendix J**.

If you have any questions or require further information, please contact the undersigned.

Wood Environment & Infrastructure Solutions,
a division of Wood Canada Limited.

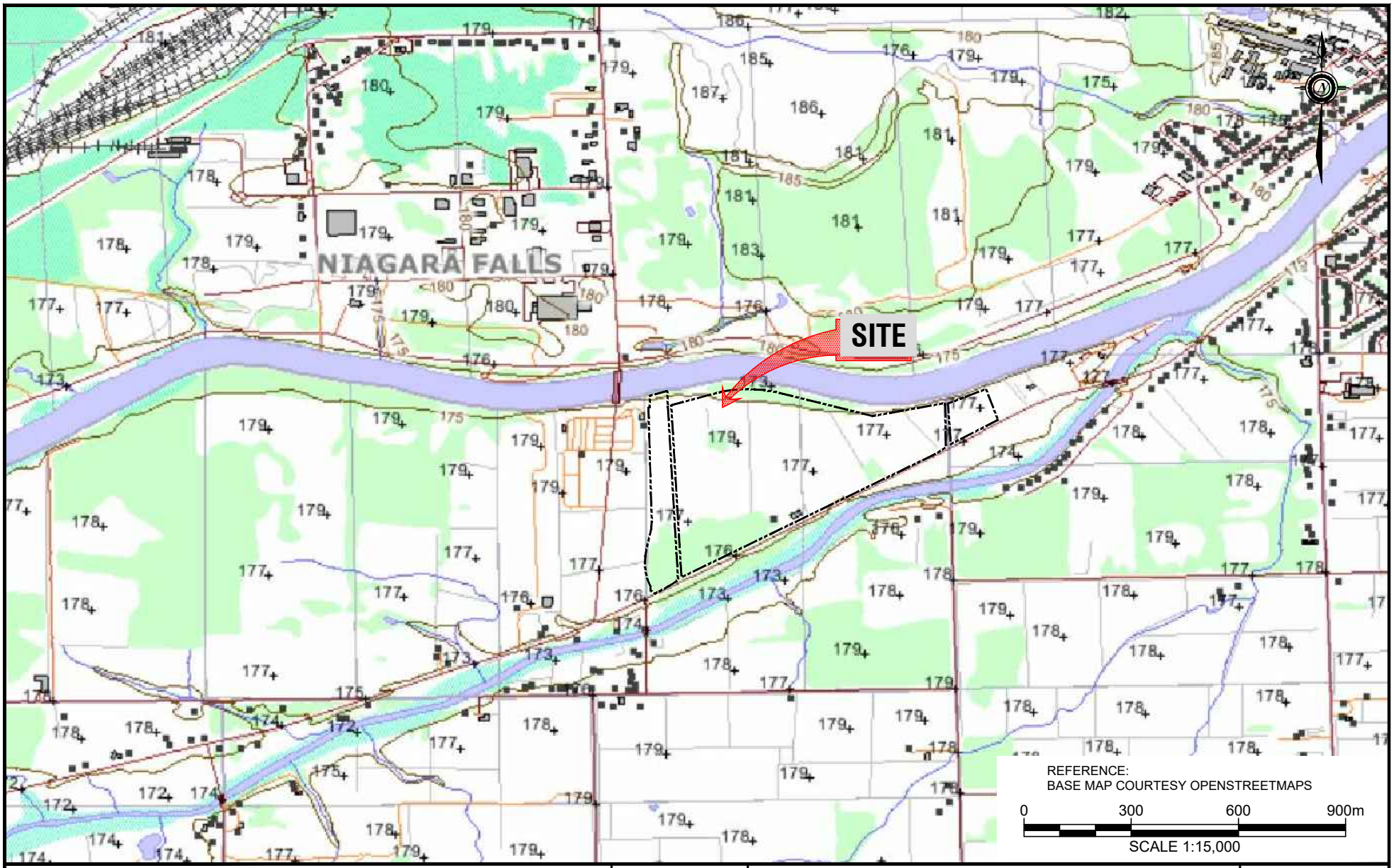
Prepared by:

Braedan Huras, B.Sc., EPt
Environmental Technician

Reviewed by:

Patrick Shriner, P.Geo.
Associate Environmental Geoscientist

Figures



CLIENT: RICCI LAW PROFESSIONAL CORPORATION	DWN BY: ZF	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT OAKLANDS GOLF COURSE 8970 STANLEY AVENUE, NIAGARA FALLS, ON	REV. NO.: A
	CHK'D BY: TW		DATE: NOVEMBER 2019
	DATUM: NAD 83		PROJECT NO: SCT196351
	PROJECTION: UTM ZONE 17T	TITLE: SITE LOCATION PLAN	FIGURE No. 1
	SCALE: 1:30,000		

Wood Environment & Infrastructure Solutions
3300 Merrittville Highway, Unit 5
Thorold, Ontario L2V 4Y6

wood.

C:\Users\zhanna.furman\appdata\local\temp\AcPublish_11500\SCT196351_8970_Phase One.dwg – Figure 1 – Apr. 07, 2020 2:26pm – zhanna.furman

LEGEND:

- PROPERTY BOUNDARY
- (T) POLE-MOUNTED TRANSFORMER

CLIENT:
RICCI LAW PROFESSIONAL CORPORATION

Wood Environment & Infrastructure Solutions
3300 Merrittville Highway, Unit 5
Thorold, Ontario L2V 4Y6

wood.

DWN BY:	ZF
CHK'D BY:	TW
DATUM:	NAD 83
PROJECTION:	UTM ZONE 17T
SCALE:	AS SHOWN

PROJECT
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
OAKLANDS GOLF COURSE
8970 STANLEY AVENUE, NIAGARA FALLS, ON

TITLE
PHASE ONE PROPERTY LAYOUT PLAN

DATE:	MARCH 2020
PROJECT NO:	SCT196351
REV. NO.:	A
FIGURE No.	2

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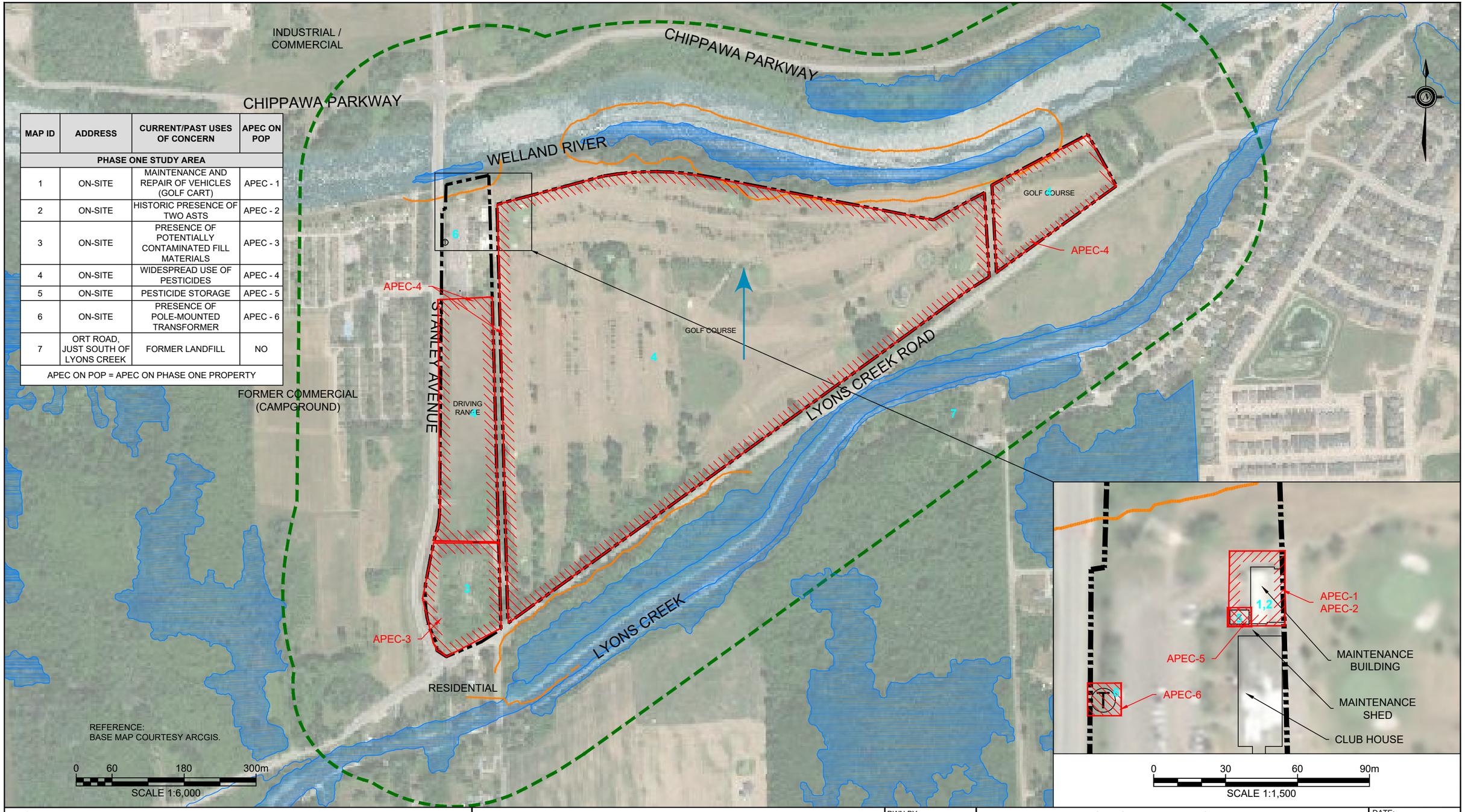
MAP ID	ADDRESS	CURRENT/PAST USES OF CONCERN	APEC ON POP
PHASE ONE STUDY AREA			
1	ON-SITE	MAINTENANCE AND REPAIR OF VEHICLES (GOLF CART)	APEC - 1
2	ON-SITE	HISTORIC PRESENCE OF TWO ASTS	APEC - 2
3	ON-SITE	PRESENCE OF POTENTIALLY CONTAMINATED FILL MATERIALS	APEC - 3
4	ON-SITE	WIDESPREAD USE OF PESTICIDES	APEC - 4
5	ON-SITE	PESTICIDE STORAGE	APEC - 5
6	ON-SITE	PRESENCE OF POLE-MOUNTED TRANSFORMER	APEC - 6
7	ORT ROAD, JUST SOUTH OF LYONS CREEK	FORMER LANDFILL	NO
APEC ON POP = APEC ON PHASE ONE PROPERTY			



LEGEND:

- PHASE ONE PROPERTY BOUNDARY
- PHASE ONE STUDY AREA (250 m RADIUS)
- 1 POTENTIALLY CONTAMINATING ACTIVITY (PCA)
- INFERRED GROUNDWATER FLOW DIRECTION
- AREA OF POTENTIAL ENVIRONMENTAL CONCERN (APEC)
- LYONS CREEK WETLAND COMPLEX AND WELLAND RIVER EAST WETLAND COMPLEX
- 30m BUFFER FROM THE WETLANDS

CLIENT:
RICCI LAW PROFESSIONAL CORPORATION

Wood Environment & Infrastructure Solutions
3300 Merrittville Highway, Unit 5
Thorold, Ontario L2V 4Y6

DWN BY:	ZF
CHK'D BY:	TW
DATUM:	NAD 83
PROJECTION:	UTM ZONE 17T
SCALE:	AS SHOWN

PROJECT: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
OAKLANDS GOLF COURSE
8970 STANLEY AVENUE, NIAGARA FALLS, ON

TITLE: CONCEPTUAL SITE MODEL AND PHASE ONE STUDY AREA

DATE:	MARCH 2020
PROJECT NO:	SCT196351
REV. NO.:	A
FIGURE No.	3

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Appendix A

Legal Survey Plan

Appendix B

Phase One ESA Reference Document

Phase One Environment Site Assessment

Reference Document

Asbestos	Asbestos refers to a group of naturally occurring fibrous mineral silicates that is known to have been used in over 3,000 products commonly referred to as asbestos-containing materials (ACM). Friable ACM can be readily crumbled using hand pressure, separating asbestos fibres from the associated binding materials and is commonly seen in boiler and pipe insulation and spray fireproofing. Non-friable ACM is associated with a binding agent that prevents the ready release of airborne fibres and is typically found in vinyl flooring, tars and sealants, drywall compound, plaster and pre-cast asbestos cement products commonly referred to as "Transite" (e.g., roof drains and transite panels). The handling, identification, documentation, and removal of asbestos are regulated by *Ontario Regulation278/05 Designated Substance – Asbestos On Construction Projects And In Buildings And Repair Operations*. The presence of ACMs can only be verified through multiple samples and analysis of suspect materials as outlined in *O. Reg. 278/05*. ACMs must be addressed through the implementation of an appropriate management and/or abatement program to protect the health of persons working at the Site, as required under the OHSA and *O. Reg. 278/05*. ACMs in poor or deteriorated condition may be addressed through repair, encapsulation, enclosure or removal.
Hydraulic Equipment	Mechanical equipment including piston type elevators, vehicle hoists, loading dock lifts, and compactors comprise typical hydraulically operated devices. Such equipment contains hydraulic oils which are operated under high pressures and can be released into the environment as a result of leaks or equipment failure.
Lead	Lead is a heavy metal typically found in metallic lead (used to make water distribution pipes, electrical batteries, lead solder, and electric cable sheathes); inorganic compounds (components of products such as insecticides, pigments, paints, and glass); and organic lead compounds (the most commonly known of which are tetramethyl lead and tetraethyl lead, used as antiknock additives in gasoline). The presence of lead-containing paints (LCPs) in buildings represents a potential hazard where persons, notably small children, may ingest peeling or flaking LCPs. The generation of airborne lead containing dust created during renovation, demolition, or construction activities (i.e., during sanding and grinding), or like actions also comprises a potential health concern. The MOL issued the "*Lead on Construction Projects*" guideline in September

2004. The guideline includes legal requirements, health effects, control of the health hazard, classification of construction operations, and measures and procedures for working with the designated substance during operations that create lead dust or fumes.

The United States Department of Housing and Urban Development (the U.S. HUD) guideline of 1 milligram per square centimetre (mg/cm^2), 0.5 percent lead by weight, or 5,000 parts per million (ppm) lead is used in the United States as a guideline for determining whether the use of safety precautions would be required during operations that create lead dust or fumes.

In 1976, the Canadian Federal Government introduced the Liquid Coating Materials Regulations under the Federal Hazardous Products Act (HPA), restricting the maximum total lead content of paints and other liquid coating materials used in or around premises attended by children or pregnant women to 0.5% by weight (5,000 mg/kg). In January 1991, Health Canada negotiated a voluntary reduction of lead content in all Canadian produced consumer paint to a maximum of 0.06%. Recently the Canadian Federal Government revoked Part 1 of the HPA and enacted the Surface Coating Materials Regulations (SOR/2005-109) under the Canada Consumers Product Safety Act (S.C. 2010) which reduce the maximum total lead content of any new surface coatings for consumer products to 0.009% (90 mg/kg). This reduction does not generally apply to surface coating applied to buildings or other structures used for agricultural or industrial purposes or as an anti-weathering or anti-corrosive coating.

The OHSA does not set a regulatory limit on the concentration of lead in paint and based on discussions with the MOL, any concentration of lead in paint applications should be considered to be lead-containing. The presence of LCPs can only be verified through sampling and analysis of suspect paint samples or by using a handheld XRF. If present, LCPs may be addressed through the implementation of an appropriate management or abatement plan to protect the health of workers. Where LCPs are in poor condition (i.e., peeling or flaking) they may be addressed through removal. Appropriate management plans are also required where maintenance, alteration, renovation, or demolition activities may disturb these materials.

Methane

Methane is a colourless and odourless gas commonly formed by the decomposition of organic material, and is a large component of natural gas associated with waste disposal sites. Natural sources of methane include marshes, swamps, bogs, fens or coal and/or peat deposits. Potential methane risks include explosion hazards where methane enters closed spaces and concentrations exceed the lower explosive limit.

Mercury	Mercury can be used in fluorescent, compact fluorescent and high intensity discharge (HID) lamps, electrical switches, thermostats, thermometers, and certain batteries. All fluorescent and compact fluorescent lights contain mercury regardless of the date of manufacture. The Canadian Council of Ministers of the Environment (CCME) "Canada-Wide Standard for Mercury-Containing Lamps" (2001) is largely geared towards reducing the amount of mercury in lamps at the manufacturing stage; however, they do recommend that the release of mercury can be minimized through the proper recycling and disposal of mercury-containing lamps. Mercury was also added to some leaded paints as a fungal retardant. In January 1991, under the voluntary industry program negotiated by Health Canada, the intentional addition of mercury to Canadian produced consumer paints for interior use ceased. Under the Federal Surface Coating Materials Regulations (SOR/2005-109), the maximum total mercury concentration of paints and other surface coatings is restricted to 10 mg/kg (0.001%) when a dried sample is tested in accordance with a method that conforms to good laboratory practices. The 10 mg/kg mercury restriction is unique to Canada and is based on a toxicological assessment by Health Canada in 1995, which was reconfirmed in 2004.
Mould	Mould spores are ubiquitous in both indoor and outdoor environments and in the presence of adequate moisture, may pose a concern in a building environment. There are currently no regulations specifically covering exposure to mould and/or mould remediation practices in Canada and there are no occupational exposure limits that define acceptable levels of mould exposure without adverse health effects. However, Section 25 and 27 of the OHSA states that an employer and supervisor must take every reasonable precaution to ensure the health and safety of their workers. This includes exposure to moulds and other biological matter. Direction on the assessment and remediation of mould in Ontario is based on the *"Mould Guidelines for the Canadian Construction Industry"* Canadian Construction Association (document CCA82). February 2004, and the *"Mould Abatement Guidelines, Second Edition."* Environmental Abatement Council of Ontario (EACO). 2010.
Ozone depleting substances	Ozone depleting substances (ODSs) include any substances containing chlorofluorocarbon (CFC), hydrochlorofluorocarbon (HCFC), halon or any other material capable of destroying ozone in the atmosphere. ODSs have been used in rigid polyurethane foam and insulation, laminates, aerosols, air conditioners, fire extinguishers, cleaning solvents and the sterilization of medical equipment. Federal regulations introduced in 1995 required the elimination of production and import of CFCs by January 1, 1996 (subject to certain essential uses) and a freeze on the production and import of HCFC-22 by January 1, 1996. These regulations also require the complete

elimination of HCFC-22 by the year 2020. ODSs and other halocarbons are regulated by Ontario Regulation 463/10 made under the Environmental Protection Act (EPA).

Polychlorinated Biphenyls

PCB-containing products (e.g., oil in light ballasts and liquid-filled transformers) were manufactured for use in applications where stable, fire-resistant, and heat-transfer properties were demanded between 1926-29 and 1977. Most PCBs were sold for use as dielectric fluids (insulating liquids) in electric transformers and capacitors. Other uses included heat transfer fluid, hydraulic fluid, dye carriers in carbonless copy paper, plasticizers in paints, adhesives, and caulking compounds.

In Canada, PCBs were prohibited from being used in products, equipment, machinery, electrical transformers and capacitors that were manufactured or imported into the country after July 1980. However, older equipment in use after this date may still contain PCBs if the equipment's fluid has not been changed, or if there was sufficient inventory of such equipment.

PCB-containing lamp ballasts in good condition and still in service do not require removal or replacement. Leaking ballasts should be verified for PCB content, and if found to be PCB containing, managed in accordance with MOE regulations regarding PCB wastes. According to Environmental Canada's *Handbook on PCBs in Electrical Equipment*, "any substance that contains 50 ppm or greater is considered to be contaminated and must be treated as a PCB-containing substance." Where maintenance alteration, renovation, or demolition activities undertaken at a Site may result in the generation of more than 1.0 kg of PCB waste, it will be necessary to establish a secure licensed PCB storage facility at the Site or dispose of the wastes at an approved PCB disposal or destruction facility. PCB wastes totaling less than 1.0 kg may be disposed as non-hazardous waste at any licensed waste disposal site.

Radioactive Materials

The Canadian Nuclear Safety Commission (CNSC) is responsible for the management and licensing of radioactive materials, to ensure that the use of nuclear energy and materials do not pose undue risk to health, safety, security and the environment. Industrial equipment such as X-ray imagers, metal detection devices and measuring devices may contain radioactive materials and may be a hazard if used or stored improperly.

Radon

Radon is a naturally occurring gas produced by the decay of Uranium-238 that tends to concentrate in formations of granite, sandstone, coal, phosphate and uranium deposits. Radon is colourless, odourless and tasteless and tends to percolate up through soil where it may enter and accumulate in basements of buildings through foundation cracks and joints. Because the existence of radon is dependent upon geological factors, it is

more of a regional concern than site-specific.

In June 2007, following a review of the 1988 federal radon guidelines, Health Canada announced a new (non-regulatory) guideline for acceptable levels of radon in indoor air in a residential setting: *"remedial measures should be undertaken in a dwelling whenever the average annual radon concentration exceeds 200 Becquerels per cubic metre (200 Bq/m³) in the normal occupancy area. The higher the radon concentration, the sooner remedial measures should be undertaken. When remedial action is taken, the radon levels should be reduced to a value as low as practicable. The construction of new dwellings should employ techniques that will minimize radon entry and will facilitate post-construction radon removal, should this subsequently prove necessary*."

Health Canada and the Federal Provincial Territorial Radiation Protection Committee (FPTRPC) worked collaboratively to form the new radon guideline, and since 2004 have also worked to develop a program of implementation for the guideline, under the National Radon Program. Several research projects have been ongoing to test radon across the country, and develop a radon potential mapping methodology, which will help to target more research and education efforts. The two year *Cross-Canada Survey of Radon Concentrations in Homes, Final Report* (12) *e*stimated that the percentage of Canadian homes with radon levels above the 200 Bq/m³ guideline is 6.9%. The estimate for Ontario of homes exceeding the guideline was less, at 4.6%. Further studies are ongoing to determine any correlations between radon levels and home characteristics, as well as regional potential mapping. The study's conclusions found that no areas of the country are 'radon free', and also emphasized that the results should not be used to determine risk potential, as the only way to know if a building has elevated radon is to test for it.

Silica

Silica (SiO_2) is the name of a group of minerals that are used in the manufacture of glass, ceramics, abrasives, water treatment products, cosmetics, insecticides, paint, and foods, as well as a drying agent or preservative. Crystalline silica materials also are used in the production of concrete or mortar-based building materials, cement, acoustic ceiling tiles, and ceramic tiles which are used for construction purposes. Common construction sand contains free crystalline silica and is present in ceiling tiles, concrete products, mortar, and brick. Dusts containing more than 1% crystalline free silica by weight are considered to pose a potential exposure hazard. *O. Reg. 490/09* specifies the occupational exposure limit for respirable crystalline silica is 0.05 milligrams per cubic metre (mg/m^3) of air by volume as a 40-hour weekly time-weighted average for cristobalite and tridymite. In the case of quartz and tripoli, the occupational exposure limit is 0.10 mg/m^3 of air by volume. The MOL issued the "Silica on Construction

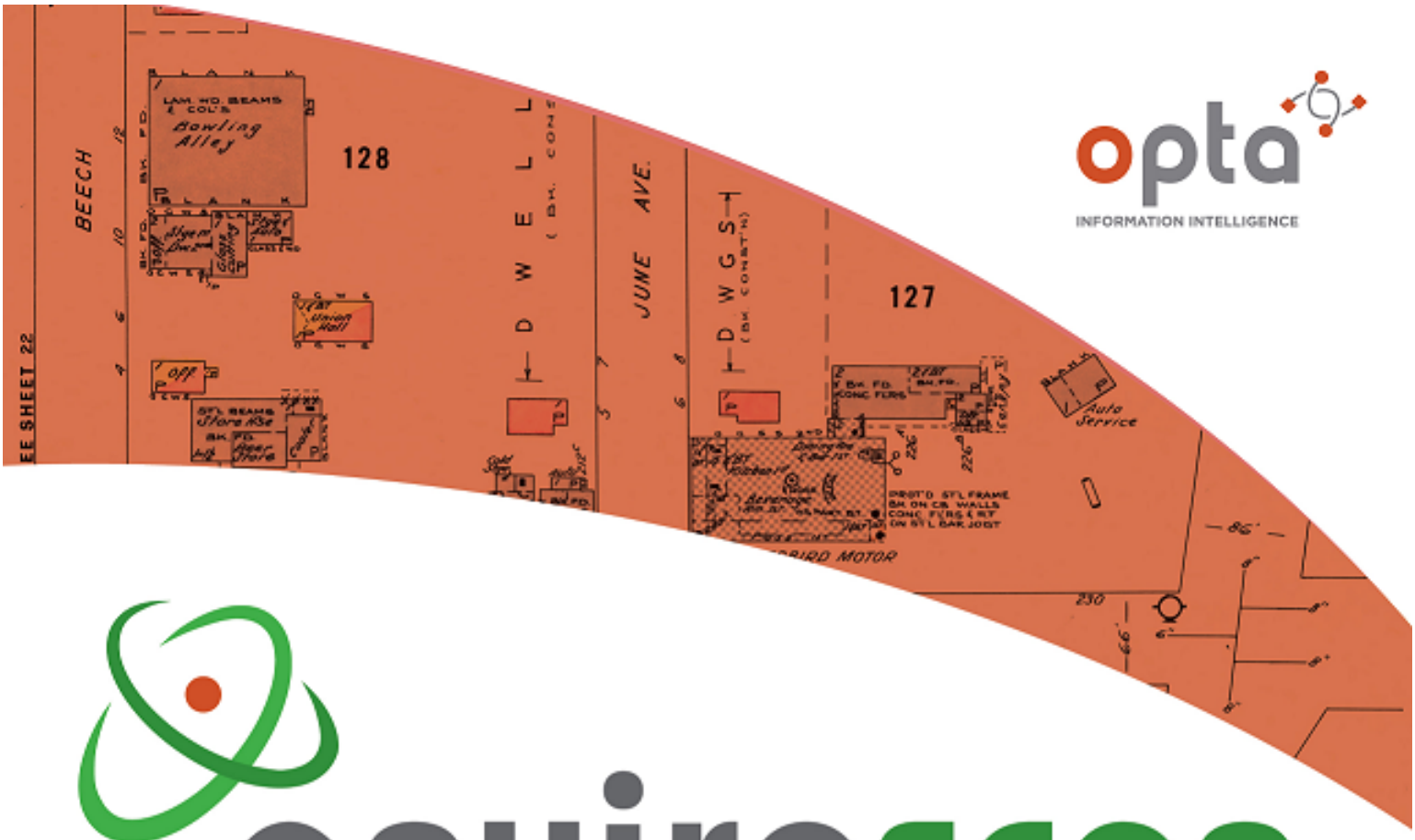
Projects" guideline in September 2004. The guidelines include legal requirements, health effects, control of the health hazard, classification of construction operations, and measures and procedures for working with the designated substance during operations that create silica dust.

UFFI

Urea formaldehyde foam insulation (UFFI) is a thermal insulation material that is pumped into interstitial spaces between the walls of buildings where it hardens to form a solid layer of insulation. The sale and installation of UFFI was banned for health-related reasons because of the formation of formaldehyde gas, which is released from the UFFI to the building interior. The spray application of UFFI was reportedly used between 1977 and its ban in Canada in 1980. UFFI was banned due to developing concerns of the release of toxic formaldehyde vapor emitted in the curing process and from the breakdown of old insulation due to water or moisture damage. Health Canada has reportedly determined that 0.1 parts per million (ppm) is a safe level of formaldehyde in a residential building. Sensitivity to this concentration may vary based on individual age and health.

Appendix C

Opta Report



opta
INFORMATION INTELLIGENCE

enviroscan

An SCM Company

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

Report Completed By:

Sunita

Site Address:

8970 Stanley AvenueNiagara Falls

Project No:

20190116121

Opta Order ID:

57301

Requested by:

Eleanor Goolab
ERIS

Date Completed:

1/23/2019 12:27:47 PM

Project Name: Phase I ESA
8970 9015 Stanley Ave

Project #: 20190116121
P.O. #: TG181134

ENVIROSCAN Report

Search Area: 8970 Stanley AvenueNiagara Falls

Requested by:
Eleanor Goolab
Date Completed: 01/23/2019 12:27:47

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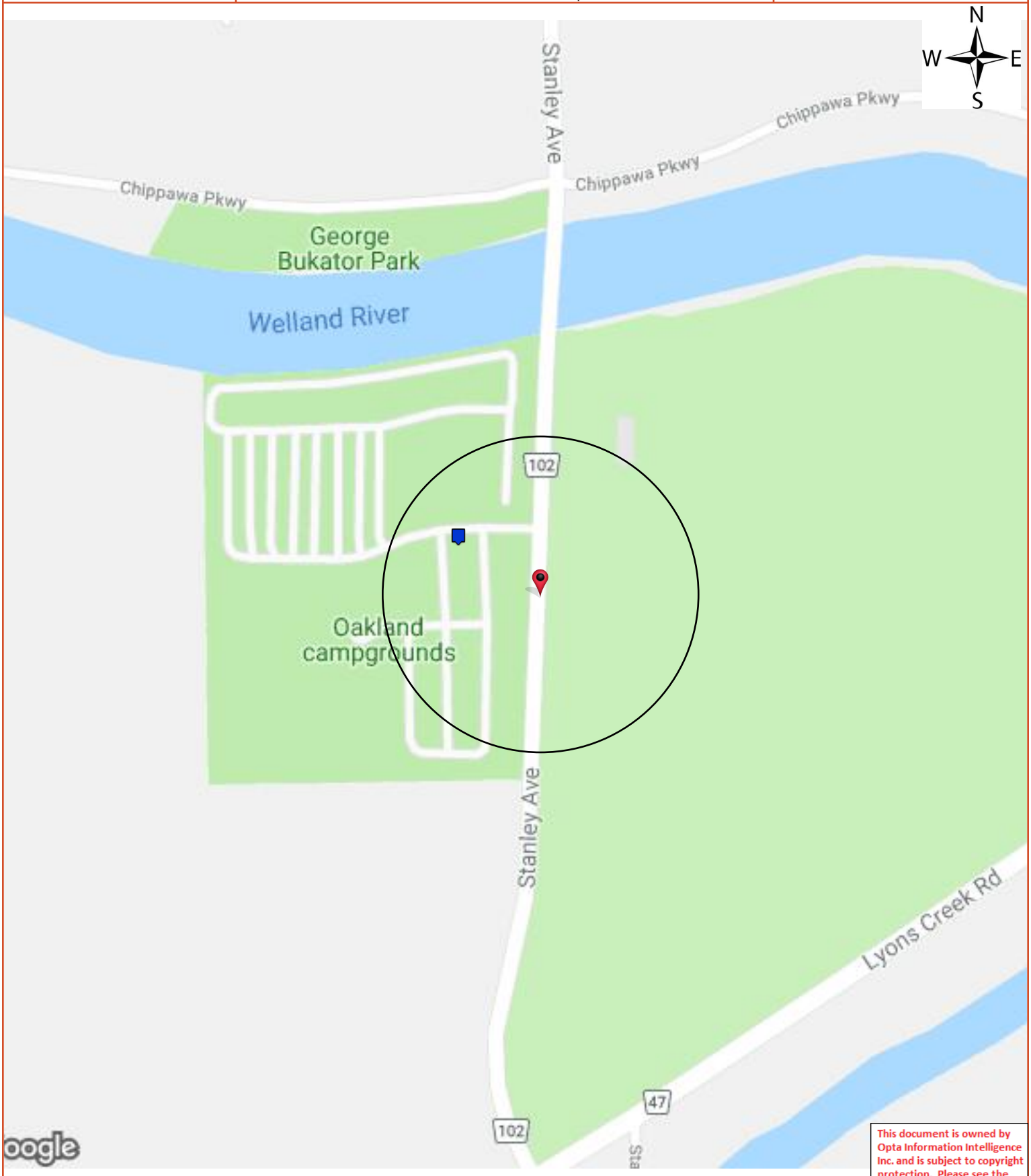
OPTA INFORMATION INTELLIGENCE



Opta Historical Environmental Services Enviroscan™ Terms and Conditions

Report

The documents (hereinafter referred to as the "Documents") to be released as part of the report (hereinafter referred to as the "Report") to be delivered to the purchaser as set out above are documents in Opta's records relating to the described property (hereinafter referred to as the "Property"). Opta makes no representations or warranties respecting the Documents whatsoever, including, without limitation, with respect to the completeness, accuracy or usefulness of the Documents, and does not represent or warrant that these are the only plans and reports prepared in association with the Property or in Opta's possession at the time of Report delivery to the purchaser. The Documents are current as of the date(s) indicated on them. Interpretation of the Documents, if any, is by inference based upon the information which is apparent and obvious on the face of the Documents only. Opta does not represent, warrant or guarantee that interpretations other than those referred to do not exist from other sources. The Report will be prepared for use by the purchaser of the services as shown above hereof only.

Disclaimer

Opta disclaims responsibility for any losses or damages of any kind whatsoever, whether consequential or other, however caused, incurred or suffered, arising directly or indirectly as a result of the services (which services include, but are not limited to, the preparation of the Report provided hereunder), including but not limited to, any losses or damages arising directly or indirectly from any breach of contract, fundamental or otherwise, from reliance on Opta Reports or from any tortious acts or omissions of Opta's agents, employees or representatives.

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.

ENVIROSCAN Report

Report Index

PROPERTY & LIABILITY EVALUATION Report - 2003 OAKLAND GOLF COURSE 8970 STANLEY AVENUE NIAGARA FALLS ON L2E

SIMMLANDS
CLUBPAC
PROPERTY & LIABILITY EVALUATION
CONFIDENTIAL

NOTE: The sole purpose of this report is to provide insurance pricing and underwriting information about the particular insured and location named below. Only the person requesting this survey will receive a copy of the report, and IAO/CRRS 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.

OCCUPANCY

Name of Facility: *Oaklands Golf Course*
Type of Golf Facility: ☐ Private, ☐ Semi-Private, ☒ Public, ☐ Driving Range, ☐ Other: _____
Address: *8970 Stanley Avenue* Surveyed By: *R. Maki*
Niagara Falls, Ontario L2E 6E6 Date of Survey: *2003-05-06*
Person Contacted: *Norma Restivo* Season of Operations: *April to November*
Telephone #: *905-295-6643*

BUILDINGS

Club House: Year Built: *1980* Additions: *1999* Storeys: *1* Height: *2.7* Renovated: ☐ No ☒ Yes
Ground Floor Area: *392* m² Total Area: *392* m² Basement: ☒ No ☐ Yes _____ m²
Building Condition: ☒ Good ☐ Fair ☐ Poor Describe:
Lightning Protection: ☒ No ☐ Yes, Describe: _____
Construction: Walls: *Wood joist covered with vinyl siding.*
Roof: Age: *1999* Type: *Peak* Construction: *Wood joist* Covering: *Asphalt shingles*
Floors: Construction: *Wood joist* Coverings: *Carpet* Condition: *Average*
Heating: Age: *1999* Type: *HVAC* Fuel: *Gas* Portable Heaters: ☒ No ☐ Yes : _____
Appliances enclosed in a non-combustible room: ☐ Yes ☐ No ☒Not required
Fuel Tanks: ☒ None ☐ Inside ☐ Outside ☐ Above Ground ☐ Below Ground Age: _____
Installation deficiencies: ☒ No, ☐ Yes, Describe: _____
Air Conditioning: Describe: *Central*
Electrical: Age: *1999* Type: *BX*
Temporary wiring or extension cords: ☐ Yes ☒ No Location: _____
Overcurrent protection: *Circuit Breaker* Installation appears safe: ☒ Yes ☐ No _____
Remarks: _____
Plumbing: Type: Copper Condition: Good Replaced: ☒ No ☐ Yes 19_____
Evidence of Corrosion: ☒ No ☐ Yes Describe: _____

Club House Uses: Kitchen: ☒ Yes ☐ No, Dining Room: ☒ Yes ☐ No,
Pro Shop: ☒ Yes ☐ No
Maintenance Shop or Storage of Equipment ☐ Yes ☒ No
Locker Rooms: ☐ Yes ☒ No, Swimming Pool: ☐ Yes ☒ No, Sauna: ☐ Yes ☒ No
Indoor Practice Range: ☐ Yes ☒ No, Teaching Facilities: ☐ Yes ☒ No
Billiards Room: ☐ Yes ☒ No, Darts: ☐ Yes ☒ No, Pub/Lounge: ☐ Yes ☒ No
Dance Floor: ☐ Yes ☒ No, Squash/Racquet Ball Courts: ☐ Yes ☒ No,
Tennis: ☐ Yes ☒ No, Curling: ☐ Yes ☒ No, Figure Skating: ☐ Yes ☒ No,
Badminton: ☐ Yes ☒ No, ☐ Other: _____

Kitchen/Cooking Facilities - Club House

Interior Finish: Walls: *Painted gypsum board* Ceilings: *Suspended tiles* Floors: *Clay tile*

Finish of walls exposed by/adjacent to cooking appliances: ☐ None, ☒ Non-combustible ☐ Combustible

Cleanliness: ☒ Good ☐ Fair ☐ Poor : _____ Pest Control Program: ☐ No ☐ Yes Describe: _____

COOKING APPLIANCES AND EXHAUST INSTALLATION

		Fuel				Automatic Shut-off		Stainless Steel Hoods		Protection		
Appliance Type	Number	Electric	Nat gas	Propane	Charcoal	Yes	No	Yes	No	Fixed System	Auto Sprink	None
Oven		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Grill/Griddle	*1*	☐	☒	☐	☐	☒	☐	☒	☐	☒	☐	☐
Deep Fat Fryer	*2*	☐	☒	☐	☐	☒	☐	☒	☐	☒	☐	☐
Stove/Range		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Char Broiler		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Fixed Extinguishing System last serviced:2002-01-01 **Name of Servicing Company:Tyco**

Exhaust System Cleaning

Element	Weekly	Monthly	Other	Name of Company	Clean at time of inspection
Filter(s)	☐	☐	☒	*Sundance*	☒ Yes ☐ No
Hood	☐	☐	☒	*Sundance*	☒ Yes ☐ No
Ducts	☐	☐	☒	*Sundance*	☒ Yes ☐ No

Exhaust Ducts: ☐ Discharges directly to outside ☒ Passes through combustible materials
☒ Extends through the roof ☒ Protected by a fixed extinguishing system

Year of installation: 19*90*, Any Ducts over 20' length: ☒ No ☐ Yes, Clean out doors: ☒ Yes ☐ No

Comment: _____

OTHER USES OF CLUB

Are facilities used for outside (non-club) events: ☐ Yes ☒ No, Types: _____

Is catering/bar services provided with use agreement: ☐ Yes ☐ No

Crowd control at Tournaments or Special Events: ☒ Yes ☐ No, Provided by Club: ☒ Yes ☐ No

WINTER SHUTDOWN

Is the facility a seasonal operation: ☐ No ☒ Yes, What is season: *Spring, summer, fall*

Are buildings heated during closed season: ☒ Yes ☐ No

Is water drained from plumbing system: ☐ Yes ☒ No

Is electrical service turned off: ☐ Yes ☒ No

Regular security patrols: ☒ No ☐ Yes, Describe details/frequency: _____

Is access to grounds restricted during off season: ☐ Yes ☒ No

FLOODING POTENTIAL

Any bodies of water on or near facility: ☐ No ☒ Yes, Name: *Chippewa Creek*

Any evidence of previous flooding: ☒ No ☐ Yes, Describe: _____

Are buildings located on Flood Plain: ☒ No ☐ Yes

Course/Buildings susceptible to ice flow damage: ☒ No ☐ Yes, Describe: _____

Bridges: ☒ No ☐ Yes, Describe: _____

OTHER BUILDINGS: (Separate from Clubhouse)

Pro Shop: ☐ No ☐ Yes, Location:_____

Maintenance Equipment Storage: ☐ No ☒ Yes, Location: *50 m. north of Club house*

Tennis Facilities: ☒ No ☐ Yes ☐ Outdoor ☐ Indoor ☐ Winter Cover Bubble

Curling Facilities: ☒ No ☐ Yes Location:

Swimming Pool: ☒ No ☐ Yes ☐ Outdoor ☐ Indoor ☐ Winter Cover Bubble

Golf Cart Storage: ☐ No ☒ Yes, Location: *Alongside maintenance storage*

Other: ☒ NONE ☐ Yes, List and describe location and use: _____

PRO SHOP

Separate Building: ☐ Yes (if a separate building complete the following) ☒ No Where
Year Built: _____ Additions: _____ Storeys: _____ Height: _____ Renovated: ☐ No ☐ Yes
Ground Floor Area: _____ m^2 Total Area: _____ m^2 Basement: ☐ No ☐ Yes _____ m^2
Building Condition: ☒ Good ☐ Fair ☐ Poor Describe:
Lightning Protection: ☒ No ☐ Yes, Describe: _____
Construction: Walls: _____
Roof: Age: _____ General Condition: *Good* Type: _____ Construction: _____ Covering: _____
Floors: Construction: _____ Coverings: _____ Condition: _____
Heating: Age: _____ General Condition: *Good*
Type: _____ Fuel: _____ Portable Heaters: ☐ No ☐ Yes : _____
Appliances enclosed in a non-combustible room: ☐ Yes ☐ No ☒Not required
Fuel Tanks: ☒ None ☐ Inside ☐ Outside ☐ Above Ground ☐ Below Ground Age: _____
Installation appears safe: ☒ Yes ☐ No _____
Air Conditioning: Describe: _____
Electrical: Age: _____ General Condition: *Good*
Type: *BX* Temporary wiring or extension cords: ☐ Yes ☒ No Location: _____
Overcurrent protection: *Circuit Breaker* Installation appears safe: ☒ Yes ☐ No _____
Plumbing: Age: _____ General Condition: *Good*
Type: Copper Replaced: ☒ No ☐ Yes 19_____
Evidence of Corrosion: ☒ No ☐ Yes Describe: _____

PRO SHOP SECURITY

Hours of Operation: *7AM to 9PM* **Operated by Club:** ☒ **Yes** ☐ **No**
☒ **Rural** ☐ **Isolated** ☐ **Residential** ☐ **Commercial** **Or Third Party** ☐ **Yes** ☐ **No**
Character of Area: *Rural roadside south of Marineland*
Night Traffic: ☐ **Busy** ☐ **Moderate** ☒ **Light**
Shop Protected from vehicle impact? ☒ **Yes** ☐ **No** **How Protected: Parking lots and driveways separated from building by lawns and walking paths.**
Visibility Impaired: **Front:** ☐ **Yes** ☒ **No** **Rear:** ☐ **Yes** ☒ **No** **Fence:** ☐ **Yes** ☒ **No**
Exterior Light: ☒ **Yes** ☐ **No** **Interior Light:** ☒ **Yes** ☐ **No** **Security Guard:** ☐ **Yes** ☒ **No**
Minimum Number of Staff in Store: *1*

STOCK VALUES INVENTORY

Inventory Last taken: 2003-03-31
Method of Inventory: ☒ **Manual** ☐ **Perpetual** ☐ **Other:** _____
Comments regarding stock: *Clothing 90%, clubs 10%*
Average value of stock: $3.000 **Maximum Stock value: $10.000**

Golf Set Displays:	**Display racks hold clubs locked in place except 1(one) club**	☐ **Yes** ☒ **No**
	High end clubs displayed away from exits	☐ **Yes** ☒ **No**
	High end clubs "tagged" with alarm device	☐ **Yes** ☒ **No**
	Main stock kept out of public view	☒ **Yes** ☐ **No**
Golf Apparel	**Security tags that must be removed at cash register**	☐ **Yes** ☒ **No**

Off-site storage: ☒ **No** ☐ **Yes.** **(If Yes, describe include where, what and protection):** _____

Cash Management:
Maximum Cash at anyone time: $ *10.000* Frequency of Deposits: *Twice weekly*
Safe: ☒ No ☐ Yes Location of Safe: *Office* Type of Safe: *Sentry*
Surveillance Camera: ☐ None ☒ CCTV ☒ VCR VCR Location: *Office*
Area covered by cameras: *Proshop and restaurant*
Taping times: ☒ 24 hr ☐ Business hr ☐ Other: _____
Does VCR work: ☐ No ☒ Yes Is a Business week of tapes being used ☒ No ☐ Yes
How often are tapes replaced: *Not replaced at this time*

How often are tapes checked to see if they are taping: *Not a procedure at this time*

MEMBERS CLUB STORAGE

☒ None

Number of sets stored(maximum) _____ Average value per set: $ _____
Location of Bag drop: (arrival) _____ Location of Bag drop: (after round) _____
Bag drop area secured or patrolled ?:
Written Club Storage Policy: ☒ No ☐ Yes - (attach a copy)
Is access by members or Guests Permitted to storage: ☒ No ☐ Yes - Describe: _____
Location of Bag Storage Area: _____ Exposure on either side: _____
Is Storage Area cleared out in Off Season: ☐ No ☐ Yes

PHYSICAL PROTECTION OF PRO SHOP

Door Construction:
Front: *Glass in aluminum frame* Rear: _____ Side: *Glass in wood frame*
Door Locks:
Front: *Panic* Rear: _____ Side: *Deadbolt*
Windows
Front: Fixed in frame Rear: Side: Fixed in frame
Window Protection
Front: Rear: Side:
Bars on all openings: ☐ Yes ☒ No _____
Comments regarding physical protection: _____

SHOP ALARM SYSTEM ☐ NO

Describe extent of protection: *One system covering proshop, restaurant and maintenance building. Motion detectors in all area, contacts on proshop doors.*
Alarm System Connected: ☒ Yes ☐ No Alarm System Monitoring under suspension: ☐ Yes ☒ No
Alarm Company Name: *Password* Telephone #: *905-319-8448*
Detection Devices: ☐ None ☐ Contacts ☐ Foil ☒ Ultrasonic ☐ Photoelectric ☐ Shatter guards
☐ Shock Sensors Location: _____
☐ Sound detectors Location: _____
☐ Local ☐ Unlisted Station ☒ ULC Monitoring Station ☐ ULC Central Station
☒ Digital Dialer ☐ Dedicated Line ☐ Other _____
Line Security: *No* Cellular backup: ☐ Yes ☒ No
ULC Certificate: ☒ No ☐ Yes - Expiry Date: _____
Alarm Keys/Code: ☒ Owners: *3* ☒ Employees: *5* ☐ Non-Employees: _____
Digital Access Code last changed: *Annual*
Number of False Alarms in last 12 months: *3-motion detectors*
Alarm System appears suitable: ☐ Yes ☒ No
Remarks/Comments regarding Alarm System/General Security: *False alarm rate could be reduce with use of contacts and glass break detectors.*

MAINTENANCE /EQUIPMENT STORAGE BUILDING :

Year Built: *1980* Additions: _____ Storeys: *1* Height: *3* Renovated: ☒ No ☐ Yes
Ground Floor Area: *76* m^2 Total Area: *76* m^2 Basement: ☒ No ☐ Yes _____ m^2
Building Condition: ☐ Good ☒ Fair ☐ Poor Describe:
Lightning Protection: ☒ No ☐ Yes, Describe: _____
Construction: Walls: *Metal on metal frame*
Roof: Age: *1980* General Condition: *Average* Type: *Peak* Construction: *Wood* Covering: *Metal*
Floors: Construction: *50% concrete, 50% gravel* Coverings: *None* Condition: *Average*
Heating: Age: *1980* General Condition: *Average*

Type: *Suspended* Fuel: *Gas* Portable Heaters: ☒ No ☐ Yes : _____
Appliances enclosed in a non-combustible room: ☐ Yes ☐ No ☒ Not required
Fuel Tanks: ☒ None ☐ Inside ☐ Outside ☐ Above Ground ☐ Below Ground Age: _____
Installation appears safe: ☒ Yes ☐ No _____ Air Conditioning: Describe: *None*

Electrical: Age: *1980* General Condition: *Average*
Type: *Non-metallic* Temporary wiring or extension cords: ☐ Yes ☒ No Location: _____
Overcurrent protection: *Circuit breaker* Installation appears safe: ☒ Yes ☐ No _____
Flammable and Combustible Liquids: (gasoline, oils, solvents, cleaning products, paint etc.)
Storage: ☒ Standard ☐ Non-Standard, Describe: _____
Type: *Cleaning fluids* Quantity: *Small cans on work benches*
Smoking Restricted: ☒ Yes ☐ No
Gasoline: Storage Tanks: ☐ No ☒ Yes, Capacity: *2 @ 2000* l.
☒ Above Ground ☐ Below Ground Age: _____
Storage of Pesticides: ☐ Yes ☒ No, Describe: *Pesticides used as purchased to avoid storage.*
List Type and Amounts of Pesticides on site: *None*

FIRE PROTECTION PUBLIC

F.U.S. Protection Class: 93 Responding Fire Department: *Niagara Falls-Rest*
☒ Full time ☐ Volunteer ☐ Composite
Distance to Fire Department: *8* km Roads: ☒ Paved ☐ Unpaved Accessible Year-round: ☒ Yes ☐ No
No. Hydrants: *0* within 155 m, *0* within 156 - 305 m

PRIVATE FIRE PROTECTION

Private Water Supply: ☐ No ☒ Yes, Describe: *Chippewa River 500m from clubhouse* (verify availability details with local Fire Department)
Reliability in winter: *Unknown*
Private Hydrants: ☒ No ☐ Yes, No. Hydrants: _____ within 155 m, _____ within 156 - 305 m
Fixed Extinguishing Systems (Cooking Appliances & Exhaust System)
i) Type of installation: ☐ CO_2 ☐ Dry Chemical ☒ Wet Chemical ☐ Other: _____
ii) Emergency manual operation: ☒ Yes ☐ No
iii) System approved by: ☒ ULC ☐ UL ☐ CSA
iv) Maintenance contract: ☒ Yes ☐ No Company: *Tyco* Telephone #: *905-374-3040*
Expiry Date: *2002-07-01* Inspection: ☐ Annual ☒ Semi-annual Certificate: ☐ Yes ☒ No
Other Protection:
i) Automatic Sprinklers: ☐ Yes ☒ No, ☐ at ceiling, ☐ in hoods, ☐ in exhaust ducts
ii) Extinguishers (40-B,C) a) in kitchen areas ☒ Yes ☐ No ☐ CO_2 ☐ Dry Chemical, ☐ Other: _____
b) in other areas ☒ Yes ☐ No Type: *2A10BC*
iii) ULC labeled grease extraction system: ☐ Yes ☒ No Manufacturer: _____ Model: _____
iv) Ventilating equipment appears adequate: ☒ Yes ☐ No _____

GENERAL CRIME

Access to Grounds controlled: ☐ Yes ☐ No, Describe: *Property bounded by roads on west side only, entrance provided.*
Alarm System: ☒ Yes ☐ No, Describe: *Contacts and motions*
Central Station Monitored: ☒ Yes ☐ No
Company: *Password* Telephone #: *905-319-8448*
Deadbolt Locks: ☒ Yes ☐ No, Security Patrol or Guards: ☐ Yes ☒ No, Describe: _____
Alarm System: ☒ Yes ☐ No, Describe: *Contacts & motions* .What buildings does it cover: *Clubhouse and maintenance*
Fire Detection: ☐ Yes ☒ No, Describe: _____
Crime Protection: ☐ Yes ☐ No, Describe: _____ Central Station Monitored: ☐ Yes ☐ No
Club House: Deadbolt Locks: ☒ Yes ☐ No,
Storage of Liquor: Describe location and theft controls: *Locked room for bulk stock and bar area with new locking bar through cupboard doors.*

Liquor Inventory Controls: *Manual review.*
Cash: Safe: ☐ No ☒ Yes

LIABILITY SECTION

HOST LIQUOR LIABILITY

Dining Room: ☒ Yes ☐ No Owned/Operated by Club: ☒ Yes ☐ No
Patio: ☒ Yes ☐ No Owned/Operated by Club: ☒ Yes ☐ No
Bar: ☐ Yes ☐ No Owned/Operated by Club: ☐ Yes ☐ No
If not Owned/Operated by Club: Operation Agreement: ☐ Yes ☐ No, Certificate of Insurance: ☐ Yes ☐ No
Hold Harmless Agreement: ☐ Yes ☐ No
Sale of food: ☒ Yes ☐ No Sale of Alcohol: ☒ Yes ☐ No Food/liquor sales ratio: _____/_____
Staff training: ☒ Yes ☐ No, Describe: *Smart serve training is required for hiring and staff trained as season starts.*
In house: ☒ Yes ☐ No, Describe: *Management policies reviewed with all staff.*
Outside: ☒ Yes ☐ No, Describe: *Smart Serve Certificate Required*
Procedures for identification and handling of intoxicated patrons: ☒ Yes ☐ No, Describe: *Situations are brought to managers attention based on establishment rules and manager offers/provides safe ride home and involves authorities when situation cannot be resolved.*
Documentation provided: ☐ Yes ☒ No, Describe: _____
Past problems with intoxicated patrons: ☐ Yes ☒ No, Describe: _____
Taxi services available: ☒ Yes ☐ No Payphone/telephone: ☐ Yes ☒ No

GOLF COURSE

Is access to course controlled: ☒ Yes ☐ No, Describe: *Starter*
Are start times controlled to prevent players hitting group in front: ☒ Yes ☐ No
Are there Course Marshals: ☒ Yes ☐ No Do they control slow play: ☒ Yes ☐ No
Are hazards clearly marked (ponds, rivers, poison ivy, cliffs, steep hills etc.): ☒ Yes ☐ No, Describe: _____
Directions to each hole clearly marked: ☒ Yes ☐ No, Describe: _____
Condition of bridges: ☐ Good ☐ Poor, Describe: *None*
Cart Pathways clearly marked: ☒ Yes ☐ No, Describe: _____
Pesticide use controlled: ☒ Yes ☐ No, Describe: *Areas posted with signs and sprayed when area is empty.*
Driving Range: ☒ Yes ☐ No, Describe location: *South of clubhouse hitting away*
controls to keep individuals out of landing area: ☒ Yes ☐ No, Describe: *Trees between fairway on east side*
landing area away from roads, parking lots, cart pathways, tees etc.: ☒ Yes ☐ No, Describe: *Road is 50 m to west of range*
does practice area allow "shag bags': ☐ Yes ☒ No, practices holes: ☐ Yes ☒ No, Describe: _____
Inground sprinkler heads clearly marked to prevent tripping or cart hazard: ☒ Yes ☐ No, Describe: _____
Site access controlled for "Off-Road" vehicles: ☐ Yes ☒ No, Describe: *Property is not completely fenced.*
Winter access controlled for cross-country skiing, snowmobiling, tobogganing: ☒ Yes ☐ No, Describe: *Snow fences erected and entrance gated.*
Ponds and water hazards posted "No Swimming" or "No Skating": ☐ Yes ☒ No

Gasoline: Storage Tanks: ☐ No ☒ Yes, Capacity: *2 @ 2000* l.
☒ Above Ground ☐ Below Ground Age: *1990 (est)*
Storage of Pesticides: ☐ Yes ☒ No, Describe: _____
List Type and Amounts of Pesticides on site: *None*
Safety Nets in good condition: ☐ Yes ☐ No, Describe: *N/A*
Safety Nets taken down in winter months: ☐ Yes ☐ No, Describe: _____

RIDING GOLF CARTS ☐ None

Carts owned by Club: ☒ Yes ☐ No, Owner: _____
Power: ☒ Gasoline ☐ Electric Scheduled maintenance: ☐ No ☒ Yes, How Often: *Annual*
Do golf carts meet American National Safety Institute guidelines: ☒ Yes ☐ No
Written Use Agreement: ☐ No ☒ Yes, (Attach a copy) Minimum Driver Age: ☐ No ☒ Yes Age: *16*
Operating Instructions Given: ☒ Yes ☐ No On Course Driving Paths Clearly Marked: ☒ Yes ☐ No
Warning Signs Posted for Hazards, Bridges, Steep Hills etc.: ☒ Yes ☐ No, Condition of Bridges: *Good*
Vandalism: How controlled? *Carts are secured in closed hours.* Visual Check in/out of Carts: ☒ Yes ☐ No
Where are carts stored over night: *Roofed in area attached to maintenance building.*, Power source disabled: ☒ No ☐ Yes, How: _____
Charge back for damages: ☐ No ☒ Yes, Describe: *In events of material and deliberate misuse or abuse.*

PREMISES LIABILITY

	Extent of Exposure			
	Slight	Moderate	Severe	Describe
Slip & Fall	☒	☐	☐	_____
Sidewalks - Walkways	☒	☐	☐	_____
Floor Surfaces and Coverings	☒	☐	☐	_____
Fire Exit Markings	☒	☐	☐	_____
Electrical Outlets / GFCI's	☐	☒	☐	*Plug provided in washroom is not protected (recommendation made).*
Exit Obstructions	☐	☐	☐	_____
Stairs / Ramps	☒	☐	☐	_____
Handrails to Stairs / Ramps	☒	☐	☐	_____
Glass Hazard	☒	☐	☐	_____
Fire Escapes	☒	☐	☐	_____
Parking Areas	☐	☒	☐	*Fill used for driveways is ground ashphalt and contains chunks that present a trip and fall hazard (recommendation made).*
Snow & Ice Removal	☒	☐	☐	_____
General Housekeeping	☒	☐	☐	_____
Emergency Lighting	☒	☐	☐	_____
Interior Lighting	☒	☐	☐	_____
Exterior Lighting	☒	☐	☐	_____
Kitchen Facilities	☒	☐	☐	_____
Cleaning Materials / Chemicals	☒	☐	☐	_____

Briefly describe evacuation procedures: *None posted*

Are fire drills conducted: ☒ No ☐ Yes Frequency: _____

REMARKS NOT OTHERWISE RECORDED

Course originaly built in 1980 and the clubhouse was made up of trailers. The trailers were encompassed in a new clubhouse structure that was built in 1999. The property is owned by Marineland and there is a trailer park of the Marineland property located across the road.

RECOMMENDATIONS

03-1 Fixed extinguishing systems should be inspected semi-annually by a recognized contractor and tagged with the name of the servicing company and the date of inspection.

03-2 Electrical circuits in washrooms should be protected by ground fault current interrupters (GFCI) and be routinely (recommend weekly) tested and data recorded.

03-3 Consideration should be given to routinely removing large pieces of ashphalt on the paved parking area at the front of the building.

03-4 Consideration should be given to constructing a dyke around the gasoline tanks to safely contain the volume of fuel in the tank in the event of a leak or rupture.

_____

_____

_____

_____

_____

DIAGRAM - LAYOUT OF MAIN BUILDINGS

On the diagram show the location of the main buildings, distances between buildings, location of public/private hydrants, fire pumps and private water supply.

Cope Report - 1985 OAKLAND GOLF COURSE 8970 STANLEY AVENUE NIAGARA FALLS ON L2E

INSURERS' ADVISORY ORGANIZATION

CONFIDENTIAL
FOR USE OF MEMBERS ONLY
NOT FOR GENERAL DISTRIBUTION
FIRE RATE CALCULATION DETAIL

REFERENCE NUMBER: 125396
BUILDING NUMBER: 1 CLUBHOUSE

NAME OF RISK: OAKLANDS GOLF COURSE
STREET: 8970 STANLEY AVENUE
CITY, PROVINCE: NIAGARA FALLS, ONTARIO
POSTAL CODE:

SURVEYED BY: R BOUSFIELD DATE: 26-AUG-85
RATED BY: S HARRIS DATE: 30-AUG-85

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

INDUSTRY 793 TERRITORY 93 CONSTRUCTION 6
PROTECTION 5 COMBUSTIBILITY L2

- - - - - - BASIC CONSTRUCTION - - - - - -

ITEM 215 COMBUSTIBLE WALLS:
W.F.M.C. WALLS C-2 100% OF 350 PTS 350

ITEM 223 COMBUSTIBLE FLOORS & ROOF:
FLOORS & ROOF WOOD JOIST C-2 100% OF 300 PTS 300

TOTAL BASIC CONSTRUCTION CHARGES 650
SCHEDULE BASE 150
BUILDING BASE 800

ITEM 230 COMBUSTIBILITY MODIFIER:
BUILDING BASE X .001 X MODIFIER .9
BASIC BUILDING RATE .720

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

ITEM 300 HEIGHT:
NUMBER OF STOREYS: 1 AND BASEMENTS: NIL
COMBUSTIBLE STOREYS WITHOUT GRADE ACCESS: 0 0%

ITEM 320 AREA:
BLDG DIMENSIONS (M):
8 X 21 X X
AREA (SQ M): GRADE 163 TOTAL 163
EFFECTIVE 163 0%

ITEM 330 ROOF SURFACE:
APPROVED 100% OF 0% 0%

ITEM 380 BUILDING CONDITION:
GOOD C-. 0%
BUILT IN: 1983
AIR CONDITIONING: 100% WINDOW
BASEMENT: NIL
ELEVATORS: NIL
TOTAL SECONDARY CONSTRUCTION CHARGES 0%

- - - - - - OCCUPANCY - - - - - -

ITEM 417 OCCUPANCY CHARGE:
MAJOR CHARGE 105% PLUS 20% OF 0% 105%

ITEM 721 COMMON HAZARDS:
ITEM 721-1B P.I. ELECTRIC HEATING 0%
NET OCCUPANCY CHARGE 105%

ITEM 418 OCC'Y MODIFICATION:
L1, L2 AREA 100% FACTOR 1.0
TOTAL OCCUPANCY CHARGE 105%

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

TOTAL EXPOSURE CHARGES 0%
UNPROTECTED BUILDING RATE 1.476

- - - - - - MUNICIPAL PROTECTION - - - - - -

ITEM 920 MUNICIPAL PROTECTION:
DISTANCE OF HYDRANTS: NO HYDRANTS
ACCESSIBILITY: GOOD
DISTANCE TO FIREHALL: 3.2KM
CONGESTED AREA: NO
F.U.S. PROT CLASS 03 REVISED CLASS 10 FACTOR 1.00
PROTECTED BUILDING RATE 1.476

- - - - - - BUILDING ADJUSTMENT FACTOR - - - - - -

ITEM 1000 BUILDING ADJUSTMENT FACTOR:
PROTECTION CLASS 10 FACTOR 1.31
GROSS BUILDING RATE 1.934

- - - - - - INTERNAL PROTECTION - - - - - -

ITEM 1111 MANUAL FIRE FIGHTING EQUIPMENT:
PORTABLE EXTINGUISHERS CREDIT 3%
FINAL BUILDING RATE 1.876

E. C. EXTRA .02

- - - - OCCUPANCY AND CONTENTS - - - -

OAKLANDS GOLF COURSE
ITEM 548-2A GOLF COURSE CLUBHOUSE 75%
ITEM 730-5B1 LTD CKNG-NO SYSTEM 30%
LOCATION: 1ST AREA: 163(SQ M) 100.0% OF TOTAL
MAJOR OCC'Y 75% HAZARD 30% SEP'T .00 NET 105%

COMB CL L2 SUSC CL S2 IND CODE 793
SUSC .050 HAZARD 1.30 CONTENTS ADJ .99
GROSS BLDG 1.934 GROSS CONT 1.998 INT PROT .95
CONTENTS RATE 1.898
E. C. EXTRA .02

Siteplan Report - 1985 8970 STANLEY AVENUE NIAGARA FALLS ON L2E

WELLAND RIVER

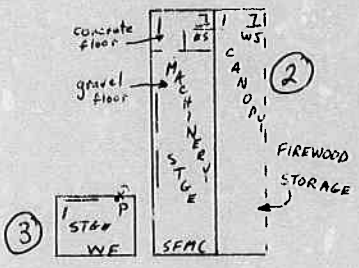
CONCRETE BRIDGE

OAKLANDS TENT & TRAILER PARK.

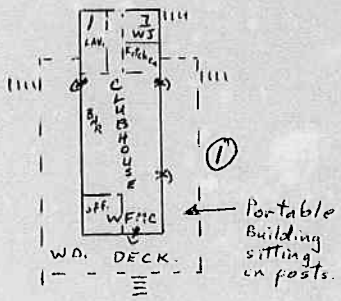
STANLEY AVENUE

8970

GOLF COURSE



PARKING LOT



FILE NO. Mercan File
Oaklands Golf Course
8970 Stanley Avenue
NIAGARA FALLS, Ont.
Sheet: NOP Block: Scale: (1" = 50')
2.54cm = 15.25m
INSURERS' ADVISORY ORGANIZATION
ONTARIO
Date: Aug 26, 1985 Field Rep.: R. Bousfield

Building Numbers are for report purposes only

Putting Green

Appendix D

Chain of Title Records

CHAIN OF TITLE REPORT

Project #: SCT196351
Address: 8970 Stanley Avenue, Niagara Falls
Legal Description: Pt lots 1 & 2, Con 2 BF Welland River; Pt rdal btn lots 2 & 3 Con BF as Parts 13 & 14, 59R7833
PIN #: 64255-0009(LT)

Searched at: St. Catharines
LRO #: 59

INSTR #	DOC. TYPE	REG. DATE	PARTY FROM	PARTY TO
	Patent	22 06 1796	Crown	**William LYONS**
5545	Deed	29 03 1819	William Lyons	Thomas CUMMINGS
6627	Deed	24 05 1825	Thomas Cummings - estate	Wilbert MICKING
1054	Will	01 11 1848	Wilbert Micking	George MICKING
1378	Deed	13 03 1889	John Sibbel, exor. Of the estate of George Micking	William WALMSLEY
4460	Deed	21 04 1928	William Walmsley	Harry OAKES
4737	Deed	25 08 1931	Harry Oakes	Welland Securities Ltd.
42464B	Deed	28 03 1966	Welland Securities Ltd.	Welland Securities (1964) Ltd.
RO620107	Deed	05 11 1991	Welland Securities (1964) Ltd.	Marineland of Canada Inc.

Cont'd on page 2

CHAIN OF TITLE REPORT

Project #: SCT196351
Address: 8970 Stanley Avenue, Niagara Falls
Legal Description: Pt lots 1 & 2, Con 2 BF Welland River; Pt rdal btn lots 2 & 3 Con BF as Parts 13 & 14, 59R7833
PIN #: 64255-0009(LT)

Searched at: St. Catharines
LRO #: 59

INSTR #	DOC. TYPE	REG. DATE	PARTY FROM	PARTY TO
LT231145	Deed	12 12 2002	Marineland of Canada Inc.	Marineland of Canada Inc.
SN539038	Deed **(Present Owner)**	29 12 2017	Marineland of Canada Inc.	**2610832 Ontario Inc.**

PROPERTY DESCRIPTION: PT LT 1 CON BROKEN FRONT WELLAND RIVER WILLOUGHBY; PT LT 2 CON BROKEN FRONT WELLAND RIVER WILLOUGHBY; PT RDAL BTN LT 2 & 3 CON BROKEN FRONT WELLAND RIVER WILLOUGHBY CLOSED BY BYLAW WI253 PT 13 & 14 59R7833; T/W RO620107 ; NIAGARA FALLS

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
FIRST CONVERSION FROM BOOK

PIN CREATION DATE:
1999/11/15

OWNERS' NAMES
2610832 ONTARIO INC.

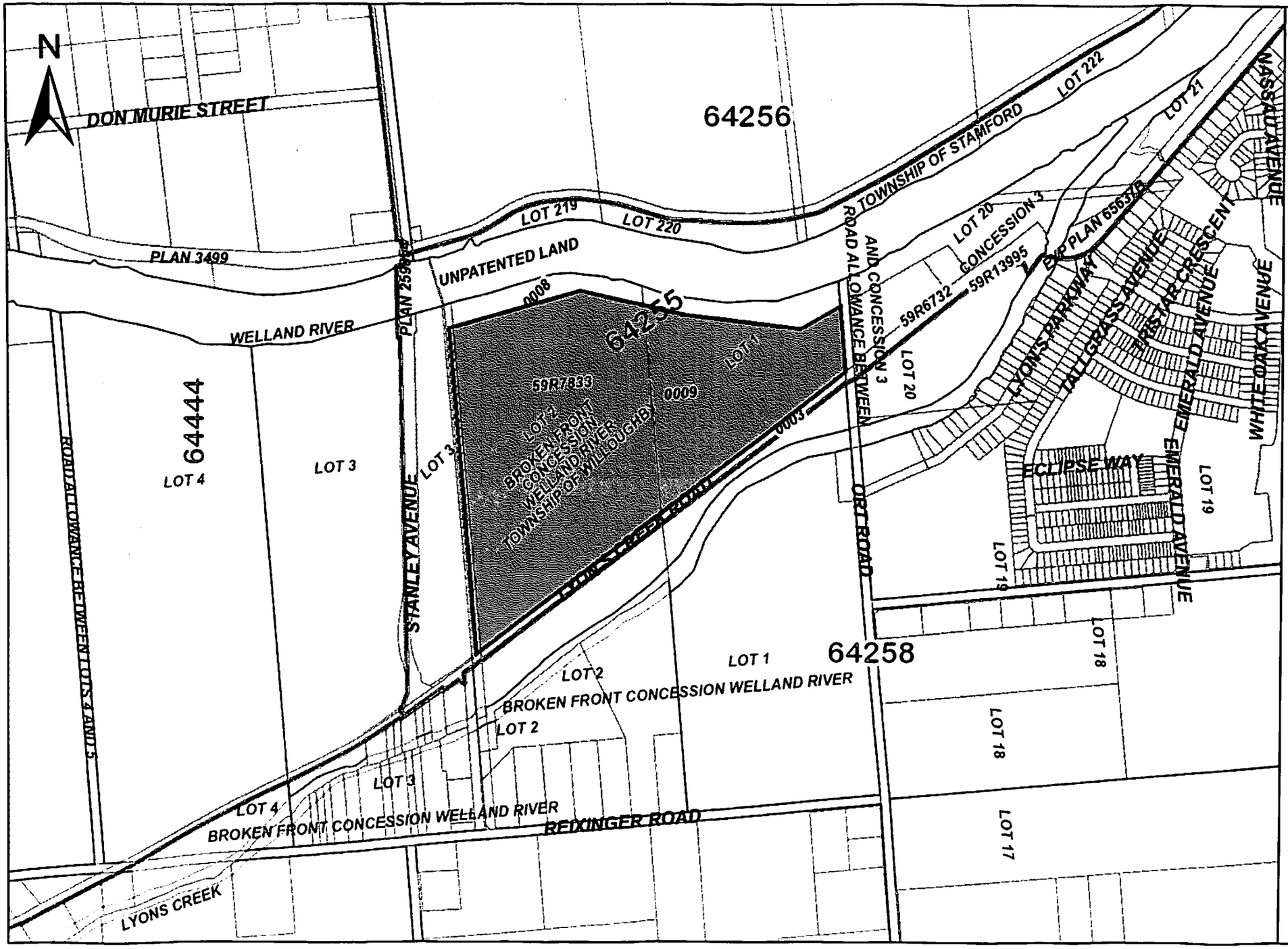
CAPACITY SHARE
ROWN

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
**EFFECTIVE	2000/07/29	THE NOTATION OF THE "BLOCK IMPLEMENTATION DATE" OF 1999/11/15 ON THIS PIN**				
**WAS REPLACED WITH THE	"PIN CREATION DATE"	OF 1999/11/15**				
** PRINTOUT	INCLUDES ALL	DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE 1999/11/12 **				
**SUBJECT,	ON FIRST REGI	STRATION 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 LE	NGTH 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 C	ONVERSION TO	LAND TITLES: 1999/11/15 **				
AA69374	1962/03/02	BYLAW				C
59R3988	1983/05/12	PLAN REFERENCE				C
59R7833	1991/10/21	PLAN REFERENCE				C
RO620107	1991/11/05	TRANSFER		*** COMPLETELY DELETED ***	MARINELAND OF CANADA INC.	
RO636799	1992/08/07	CHARGE		*** DELETED AGAINST THIS PROPERTY ***	ROYAL BANK OF CANADA	
RO636800	1992/08/07	POSTPONEMENT		*** COMPLETELY DELETED ***		
	REMARKS: RO442273, RO636799					

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
LT178630	2001/04/02	CONSTRUCTION LIEN		*** COMPLETELY DELETED *** SENECA STRUCTURAL INC.		
LT183343	2001/06/07	DIS CONSTRUCT LIEN		*** COMPLETELY DELETED ***	SENECA STRUCTURAL INC.	
	REMARKS: RE: LT178630					
LT217204	2002/07/18	DISCH OF CHARGE		*** COMPLETELY DELETED *** ROYAL BANK OF CANADA		
	REMARKS: RE: RO636799					
LT217206	2002/07/18	CHARGE		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	ROYAL BANK OF CANADA	
LT217207	2002/07/18	CHARGE		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	FALLS MANAGEMENT COMPANY	
LT217208	2002/07/18	CHARGE		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	JOHN HOLER HOLDINGS LIMITED	
LT217856	2002/07/26	TRANSFER OF CHARGE		*** DELETED AGAINST THIS PROPERTY *** FALLS MANAGEMENT COMPANY	THE CANADA TRUST COMPANY	
59R11805	2002/08/14	PLAN REFERENCE				C
LT231145	2002/12/12	TRANSFER		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	MARINELAND OF CANADA INC.	
SN39213	2004/06/30	TRANSFER OF CHARGE		*** DELETED AGAINST THIS PROPERTY *** THE CANADA TRUST COMPANY	FALLS MANAGEMENT COMPANY	
	REMARKS: LT217207					
SN394488	2013/12/24	DISCH OF CHARGE		*** COMPLETELY DELETED *** FALLS MANAGEMENT COMPANY		
	REMARKS: LT217207.					
SN538669	2017/12/22	DISCH OF CHARGE		*** COMPLETELY DELETED *** ROYAL BANK OF CANADA		
	REMARKS: LT217206.					
SN538935	2017/12/28	DISCH OF CHARGE		*** COMPLETELY DELETED *** JOHN HOLER HOLDINGS LIMITED		

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
	REMARKS: LT217208.					
SN539038	2017/12/29	TRANSFER	$22,000,000	MARINELAND OF CANADA INC.	2610832 ONTARIO INC.	C
	REMARKS: PLANNING ACT STATEMENTS.					
SN539039	2017/12/29	APL ANNEX REST COV		MARINELAND OF CANADA INC.		C
	REMARKS: NO EXPIRY					



ServiceOntario

PRINTED ON 19 MAR, 2020 AT 10:12:32
FOR BERTUCCI1

SCALE

0 90 180 270 360 450 meters

PROPERTY INDEX MAP

NIAGARA SOUTH(No. 59)

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

CHAIN OF TITLE REPORT

Project #: SCT196351
Address: 8970 Stanley Avenue, Niagara Falls
Legal Description: Part lot 20, Con 3 Willoughby desig. As Part 15, 59R7833

PIN #: 64255-0012(LT)

Searched at: St. Catharines
LRO #: 59

INSTR #	DOC. TYPE	REG. DATE	PARTY FROM	PARTY TO
	Patent	22 06 1796	Crown	**William LYONS**
5545	Deed	29 03 1819	William Lyons	Thomas CUMMINGS
6627	Deed	24 05 1825	Thomas Cummings - estate	Wilbert MICKING
1054	Will	01 11 1848	Wilbert Micking	George MICKING
1378	Deed	13 03 1889	John Sibbel, exor. Of the estate of George Micking	William WALMSLEY
4460	Deed	21 04 1928	William Walmsley	Harry OAKES
4737	Deed	25 08 1931	Harry Oakes	Welland Securities Ltd.
42464B	Deed	28 03 1966	Welland Securities Ltd.	Welland Securities (1964) Ltd.
RO620107	Deed	05 11 1991	Welland Securities (1964) Ltd.	Marineland of Canada Inc.

Cont'd on page 2

CHAIN OF TITLE REPORT

Project #: SCT196351
Address: 8970 Stanley Avenue, Niagara Falls
Legal Description: Part lot 20, Con 3 Willoughby desig. As Part 15, 59R7833

PIN #: 64255-0012(LT)

Searched at: St. Catharines
LRO #: 59

INSTR #	DOC. TYPE	REG. DATE	PARTY FROM	PARTY TO
LT231145	Deed	12 12 2002	Marineland of Canada Inc.	Marineland of Canada Inc.
SN539038	Deed **(Present Owner)**	29 12 2017	Marineland of Canada Inc.	**2610832 Ontario Inc.**

Ontario ServiceOntario

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

LAND REGISTRY OFFICE #59

64255-0012 (LT)

PREPARED FOR bertuccil
ON 2020/03/19 AT 10:03:39

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PT LT 20 CON 3 WILLOUGHBY PT 15 59R7833 ; NIAGARA FALLS

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
FIRST CONVERSION FROM BOOK

PIN CREATION DATE:
1999/11/15

OWNERS' NAMES
2610832 ONTARIO INC.

CAPACITY SHARE
ROWN

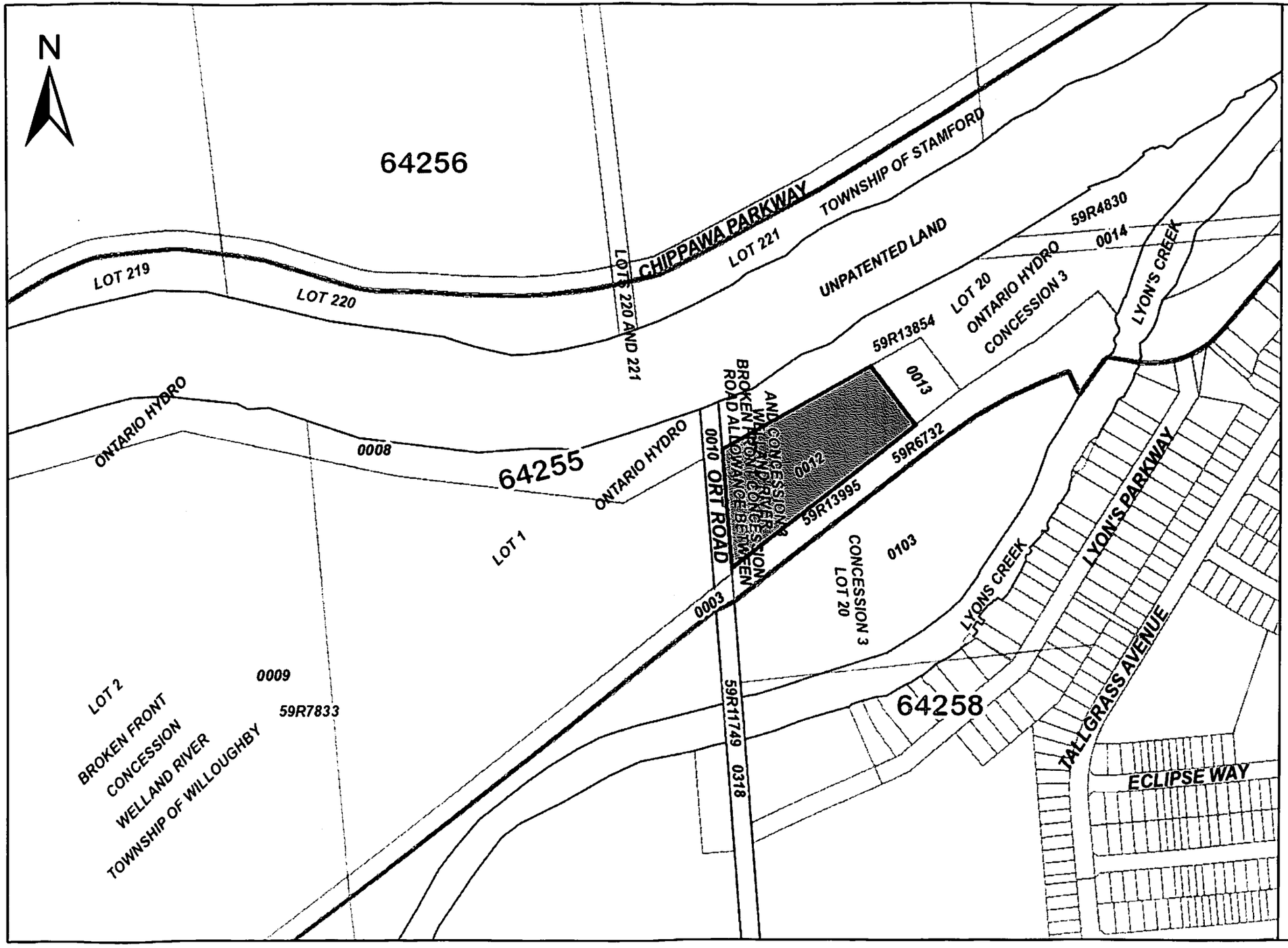
REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
EFFECTIVE 2000/07/29 THE NOTATION OF THE "BLOCK IMPLEMENTATION DATE" OF 1999/11/15 ON THIS PIN						
WAS REPLACED WITH THE "PIN CREATION DATE" OF 1999/11/15						
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE 1999/11/12 **						
**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: 1999/11/15 **						
AA69374	1962/03/02	BYLAW				C
59R7833	1991/10/21	PLAN REFERENCE				C
RO620107	1991/11/05	TRANSFER		*** COMPLETELY DELETED ***	MARINELAND OF CANADA INC.	
RO636799	1992/08/07	CHARGE		*** DELETED AGAINST THIS PROPERTY ***	ROYAL BANK OF CANADA	
RO636800	1992/08/07	POSTPONEMENT		*** COMPLETELY DELETED ***		
REMARKS: RO442273, RO636799						
LT178630	2001/04/02	CONSTRUCTION LIEN		*** COMPLETELY DELETED *** SENECA STRUCTURAL INC.		

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
LT183343	2001/06/07	DIS CONSTRUCT LIEN		*** COMPLETELY DELETED ***	SENECA STRUCTURAL INC.	
	REMARKS: RE: LT178630					
LT217204	2002/07/18	DISCH OF CHARGE		*** COMPLETELY DELETED *** ROYAL BANK OF CANADA		
	REMARKS: RE: RO636799					
LT217206	2002/07/18	CHARGE		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	ROYAL BANK OF CANADA	
LT217207	2002/07/18	CHARGE		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	FALLS MANAGEMENT COMPANY	
LT217208	2002/07/18	CHARGE		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	JOHN HOLER HOLDINGS LIMITED	
LT217856	2002/07/26	TRANSFER OF CHARGE		*** DELETED AGAINST THIS PROPERTY *** FALLS MANAGEMENT COMPANY	THE CANADA TRUST COMPANY	
LT231145	2002/12/12	TRANSFER		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	MARINELAND OF CANADA INC.	
SN39213	2004/06/30	TRANSFER OF CHARGE		*** DELETED AGAINST THIS PROPERTY *** THE CANADA TRUST COMPANY	FALLS MANAGEMENT COMPANY	
	REMARKS: LT217207					
SN394488	2013/12/24	DISCH OF CHARGE		*** COMPLETELY DELETED *** FALLS MANAGEMENT COMPANY		
	REMARKS: LT217207.					
SN538669	2017/12/22	DISCH OF CHARGE		*** COMPLETELY DELETED *** ROYAL BANK OF CANADA		
	REMARKS: LT217206.					
SN538935	2017/12/28	DISCH OF CHARGE		*** COMPLETELY DELETED *** JOHN HOLER HOLDINGS LIMITED		
	REMARKS: LT217208.					
SN539038	2017/12/29	TRANSFER	$22,000,000	MARINELAND OF CANADA INC.	2610832 ONTARIO INC.	C
	REMARKS: PLANNING ACT STATEMENTS.					

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
SN539039	2017/12/29	APL ANNEX REST COV		MARINELAND OF CANADA INC.		C
REMARKS: NO EXPIRY						



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PRINTED ON 19 MAR, 2020 AT 10:04:41
FOR BERTUCCI1

SCALE

0 30 60 90 120 150
meters

PROPERTY INDEX MAP

NIAGARA SOUTH(No. 59)

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

CHAIN OF TITLE REPORT

Project #: SCT196351
Address: 8970 Stanley Avenue, Niagara Falls
Legal Description: Part lot 3, Con BF Welland River
Pts 4-7, 59R14106 & Pts 9 & 10, 59R7833;
Pt rdal btn lots 2 & 3 Con BF as Pts 9-12, 59R7833
PIN #: 64255-0337(LT)

Searched at: St. Catharines
LRO #: 59

INSTR #	DOC. TYPE	REG. DATE	PARTY FROM	PARTY TO
	Patent (100 acres)	30 03 1811	Crown	**John BURCH**
1965	Deed	10 05 1811	John Burch	Lanty SHANNON
6403	Deed	14 01 1824	Thadeus Davis, exor. Of the estate of Lanty Shannon	William TERRY
7990	Deed	16 07 1830	William Terry	John DARLING
8393	Deed	22 10 1831	John Darling	David DAVIS
142	Deed	15 02 1866	David Davis	James CRANE
217	Deed	13 06 1872	James Crane	Andrew SIMPSON
3963	Deed	18 10 1921	Andrew Simpson	Charles KIMELE
4846	Deed	20 05 1934	Charles Kimele	George GLASGOW

Cont'd on page 2

CHAIN OF TITLE REPORT

Project #: SCT196351
Address: 8970 Stanley Avenue, Niagara Falls
Legal Description: Part lot 3, Con BF Welland River Pts 4-7, 59R14106 & Pts 9 & 10, 59R7833; Pt rdal btn lots 2 & 3 Con BF as Pts 9-12, 59R7833
PIN #: 64255-0337(LT)

Searched at: St. Catharines
LRO #: 59

INSTR #	DOC. TYPE	REG. DATE	PARTY FROM	PARTY TO
12376A	Deed	19 09 1958	George Glasgow	Andrew HARRIS & Shirley HARRIS
140724	Deed (Pts 9-12, 59R7833)	14 05 1971	Andrew Harris & Shirley Harris	Welland Securities (1964) Ltd.
RO159676	Easement	15 03 1972	Welland Securities (1964) Ltd.	The Consumers' Gas Company
RO171514	Deed	01 09 1972	George Glasgow	Welland Securities (1964) Ltd.
RO257827	Deed (Pts 4-7, 59R14106)	27 04 1976	Welland Securities (1964) Ltd.	The Regional Municipality of Niagara
RO620107	Deed	05 11 1991	Welland Securities (1964) Ltd.	Marineland of Canada Inc.
LT231145	Deed	12 12 2002	Marineland of Canada Inc.	Marineland of Canada Inc.
SN502473	Deed	03 03 2017	Regional Municipality of Niagara	Marineland of Canada Inc.
SN539038	Deed **(Present Owner)**	29 12 2017	Marineland of Canada Inc.	**2610832 Ontario Inc.**

PROPERTY DESCRIPTION: PT LOT 3 CON BROKEN FRONT WELLAND RIVER WILLOUGHBY PTS 4, 5, 6, 7 59R14106; NIAGARA FALLS; SUBJECT TO AN EASEMENT IN GROSS OVER PT 5 59R14106 AS IN SN502473; PT RDAL BTN LOT 2 & 3 CON BROKEN FRONT WELLAND RIVER WILLOUGHBY CLOSED BY BYLAW WI253 PT 9 TO 12 59R7833; PT LOT 3 CON BROKEN FRONT WELLAND RIVER WILLOUGHBY PT 9 AND 10 59R7833; EXCEPT PTS 2 & 8 ON 59R14106; T/W RO620107; S/T RO159676;; CITY OF NIAGARA FALLS

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
CONSOLIDATION FROM 64255-0321, 64255-0336

PIN CREATION DATE:
2017/04/11

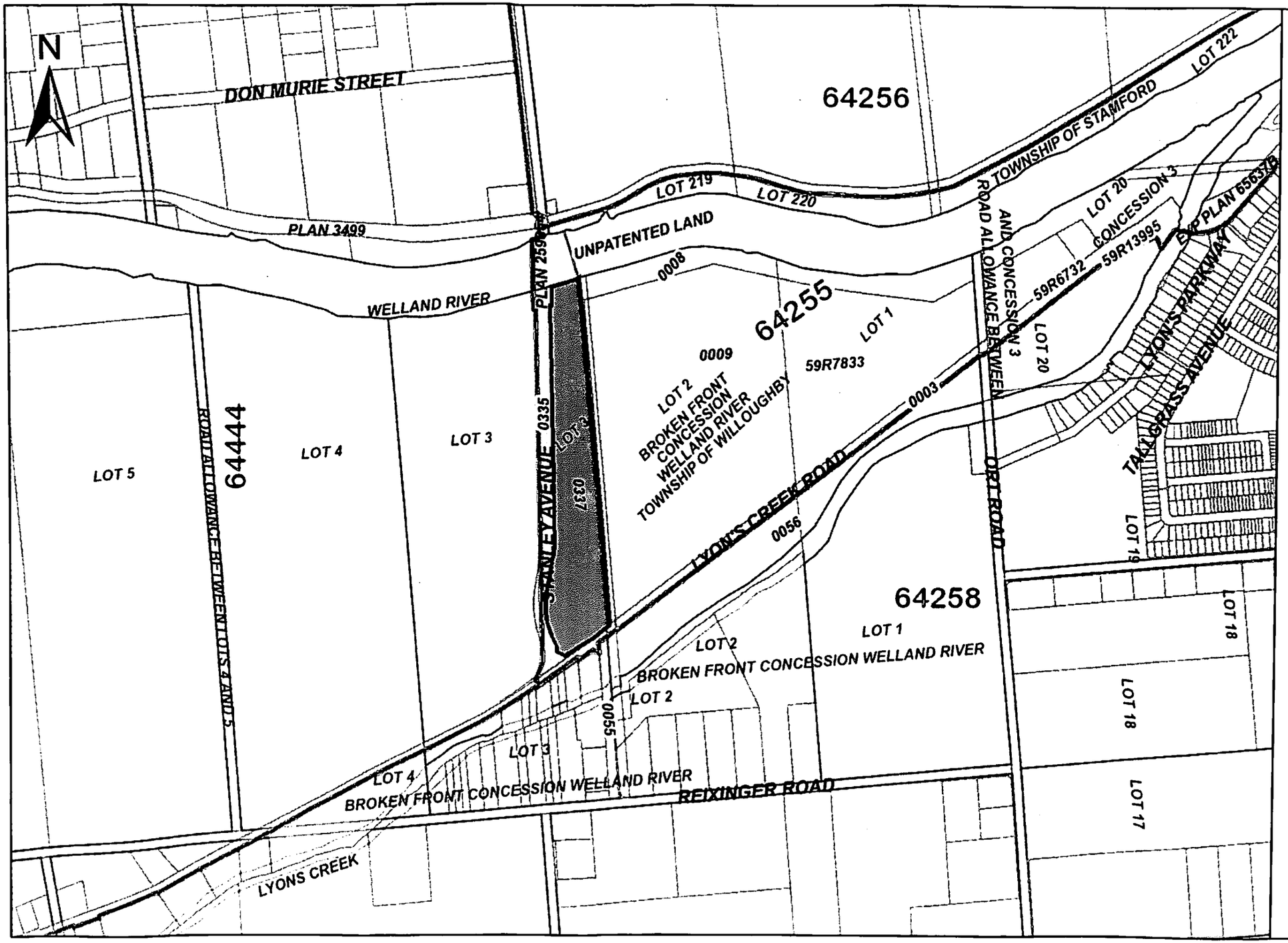
OWNERS' NAMES
2610832 ONTARIO INC.

CAPACITY SHARE
ROWN

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE 2017/04/11 **						
**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: 1999/11/15 **						
AA69374	1962/03/02	BYLAW				C
59R334	1971/11/30	PLAN REFERENCE				C
RO159676	1972/03/15	TRANSFER EASEMENT		WELLAND SECURITIES (1964) LIMITED	THE CONSUMERS' GAS COMPANY	C
59R1405	1975/11/13	PLAN REFERENCE				C
59R4009	1983/06/21	PLAN REFERENCE				C
59R7833	1991/10/21	PLAN REFERENCE				C
LT205236	2002/03/06	LR'S ORDER		LAND REGISTRAR		C
REMARKS: RE RO159676						
LT217206	2002/07/18	CHARGE		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	ROYAL BANK OF CANADA	

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
LT217208	2002/07/18	CHARGE		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	JOHN HOLER HOLDINGS LIMITED	
59R11805	2002/08/14	PLAN REFERENCE				C
LT231145	2002/12/12	TRANSFER		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	MARINELAND OF CANADA INC.	
59R14106	2009/10/23	PLAN REFERENCE				C
SN498210	2017/01/25	BYLAW		THE REGIONAL MUNICIPALITY OF NIAGARA		C
SN502473	2017/03/03	TRANSFER		*** DELETED AGAINST THIS PROPERTY *** THE REGIONAL MUNICIPALITY OF NIAGARA	MARINELAND OF CANADA INC.	
SN505879	2017/04/03	APL CONSOLIDATE		MARINELAND OF CANADA INC.		C
SN510766	2017/05/15	LR'S ORDER		LAND REGISTRAR, NIAGARA SOUTH LAND REGISTRY OFFICE		C
	REMARKS: AMENDS DESCRIPTION					
SN538669	2017/12/22	DISCH OF CHARGE		*** COMPLETELY DELETED *** ROYAL BANK OF CANADA		
	REMARKS: LT217206.					
SN538935	2017/12/28	DISCH OF CHARGE		*** COMPLETELY DELETED *** JOHN HOLER HOLDINGS LIMITED		
	REMARKS: LT217208.					
SN539038	2017/12/29	TRANSFER	$22,000,000	MARINELAND OF CANADA INC.	2610832 ONTARIO INC.	C
	REMARKS: PLANNING ACT STATEMENTS.					
SN539039	2017/12/29	APL ANNEX REST COV		MARINELAND OF CANADA INC.		C
	REMARKS: NO EXPIRY					



ServiceOntario

PRINTED ON 19 MAR, 2020 AT 10:08:22
FOR BERTUCCI1

SCALE

0 90 180 270 360 450
meters

PROPERTY INDEX MAP

NIAGARA SOUTH(No. 59)

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

Appendix E

Regulatory Correspondence and Interviews

January 4, 2019 **TG181134**

City of Niagara Falls
4310 Queen Street,
P.O. Box 1023
Niagara Falls, Ontario
L2E 6X5

Attention: Mr. Alex Herlovitch – Deputy Director of Planning and Development

Re: Phase I/One Environmental Site Assessment
8970 Stanley Ave
Niagara Falls, ON

Dear Mr. Herlovitch:

We have been retained to undertake a Phase One Environmental Site Assessment on the above referenced property. As such, we would appreciate a review of your files regarding any environmental concerns associated with it, or the surrounding lands.

A site location map is enclosed for your easy reference.

Please do not hesitate to contact the undersigned if you require any further information to complete your records search.

The $200.00 search fee is attached. Please kindly forward a receipt with your response.

Thank you for your earliest response.

Regards,

Wood Environment and Infrastructure Solutions

Cameron McCann
Environmental Technician
Encl. (2) (cheque and site location map)

Wood Environment & Infrastructure Solutions
a Division of Wood Canada Ltd.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario
Canada L2V 4Y6
Tel (905) 687-6616
Fax (905) 687-6620
www.woodplc.com

January 24, 2019

Mr. Cameron McCann
Wood Environment and Infrastructure Solutions
3300 Merrittville Hwy Unit 5
Thorold, ON L2V 4Y6

Dear Mr. McCann:

Re: 8970 Stanley Avenue
Niagara Falls, Ontario

The following information has been compiled in response to your request regarding possible environmental constraints for the above noted lands.

Our environmental review is based on data contained in the Niagara Falls Environmental Inventory. The Inventory is comprised of information regarding locations of past manufacturing, current manufacturing, salvage yards, effluent sites, air emissions sites, closed and/or existing service stations, and/or private fuel dispensers, PCB storage, closed and/or existing landfill sites, and dry cleaning establishments and propane storage sites.

The attached map identifies the following potential pollution sources within 500 m radius of 8970 Stanley Avenue. *(2) two past manufacturing; (1) one current manufacturing; (1) one air emissions; and (2) two closed and/or existing land fill site.*

The data is provided "as is" and the City of Niagara Falls (the City) makes no representations or warranties express or implied, as to the accuracy or completeness of the data. The maps and drawings contained herein are intended for general layout purposes only and shall not be considered as official plans or drawings. For further information, please contact the City. The City shall not be held liable for special, incidental, consequential or indirect damages arising from the use of this data. Users assume all risks in using this data.

If you have any questions, or wish to review the municipal database, please contact Peggy Boyle, of the Planning division at ext. 4334.

Yours truly,

John Barnsley, MCIP, RPP
Manager of Policy Planning

PB:cr
Attach.
S:\ENVIRO\Potential Pollution\EREQ_LTR\2018\8970 Stanley Ave.docx

Planning, Building, & Development
Ext 4247 Fax 905-356-2354
barnsley@niagarafalls.ca

Air Emission

1 Edscha Of Canada Ltd — 5795 Don Murie St

Current Manufacturing

2 Edscha of Canada — 5795 Don Murie St

Landfill

3 Marineland Park Landfill — Stanley Av

4 Ort Road Landfill — Ort Rd

Past Manufacturing

5 Oneida Canada Ltd — 8699 Stanley Av

6 Kaumeyer Paper Products — 4608 Main St (Chippawa)

Willoughby Twp
Conc Broken Front, 3
Pt Lots 1-3, 2
59R7833 Pts 10-15;
59R14106 Pts 4-7

NiagaraFalls

Potential Pollution Sources
8970 Stanley Avenue
City of Niagara Falls, Ontario

N

Figure 1

Planning & Development

Date:	Dawn by:	File:
January 2019	DK	K:\GIS_Requests\2018\Schedule\Enviro\8970_StanleyAv.mxd

Ministry of the Environment, Conservation and Parks

Access and 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, de la Protection de la nature et des Parcs

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

Ontario

February 5, 2019

Cameron McCann
Wood Environment & Infrastructure Solutions
3300 Merrittville Hwy, Unit 5
Thorold, ON L2V 4Y6

Dear Cameron McCann:

RE: *Freedom of Information and Protection of Privacy Act* Request
Our File #: A-2019-00527, Your Reference #: TG181134

This letter is in response to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 8970 Stanley Avenue, Niagara Falls.

After a search of the Ministry's Niagara District Office, West Central Region, Investigations and Enforcement Branch, Environmental Assessment and Permissions Branch, Environmental Monitoring and Reporting Branch, Sector Compliance Branch and Safe Drinking Water Branch, records were located in response to your request. It is my preliminary decision to provide partial access to the information as the identity of complainants will be removed to protect privacy (Section 21(1)(f) of the Act).

In accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, the estimated fee is:

• Search Time 1 hour @ $30/hour	$30.00
• CD	10.00
• Preparation Time approx. 0.21 hour @ $30/hour	6.30
• Delivery	3.00
• **Total**	**$49.30**
• Deposit Received	- 30.00
• **Balance Due**	**$19.30**

Due to the volume, the records will be provided to you electronically on a CD. The Ministry has relied on Order PO-3621 by the Office of the Information and Privacy Commission (IPC) in order to calculate the estimated fees. Order PO-3621 states that the Ministry may charge a preparation fee of $30.00 per hour for every 1,200 pages of scanned records. The breakdown of the approximate preparation fee is as follows: an estimated 0.21 hours to convert approximately 250 pages to electronic format. Please note, that upon completion of the Ministry's review, additional preparation charges may be applied to account for any severances made to the records in accordance with the exemptions under the Act. These severances will be charged at a rate of $30.00 per hour, calculated at a rate of two minutes per page.

Ministry of the Environment, Conservation and Parks

Access and 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, de la Protection de la nature et des Parcs

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

January 25, 2019

Cameron McCann
Wood Environment & Infrastructure Solutions
3300 Merrittville Hwy, Unit 5
Thorold, ON L2V 4Y6

Dear Cameron McCann:

RE: ***Freedom of Information and Protection of Privacy Act* Request**
Our File # A-2019-00527, Your Reference TG181134

The Ministry is in receipt of your request made pursuant to the *Freedom of Information and Protection of Privacy Act* and has received your payment in the amount of $5.00 (non-refundable application fee), along with your $30.00 deposit.

The search is being conducted on the following: 8970 Stanley Avenue, Niagara Falls. If there is any discrepancy please contact us immediately.

You may expect a reply or additional communication as your request is processed. For your information, the Ministry charges for search, copying and preparation time.

If you have any questions regarding this matter, please contact Rebeka Bogdan at Rebeka.Bogdan@ontario.ca.

Yours truly,

FOR

Janet Dadufalza
Manager, Access and Privacy

In order for us to continue processing the request, please forward this amount to our office. You may pay by money order or cheque (made payable to the "Minister of Finance (FOI)") or by credit card. Credit card forms are available on the Ministry's website http://www.ontario.ca/environment-and-energy/freedom-information-request-form. Please do not mail cash.

If payment has not been received within 45 days this file will be closed. When remitting payment, please quote our file number or attach a copy of this letter.

The District Office and Sector Compliance Branch have advised that there may be records in the Records Centre, Mississauga. To retrieve these files there is a charge of $60.00 with no guarantee that any records will be located responsive to your request. If you would like us to retrieve these files, $60.00 in addition to the above amount is required.

A request for records must usually be answered within 30 calendar days, however Section 27 allows for time extensions under certain circumstances. The time limit for answering your request has been extended for an additional 90 days after receipt of your deposit. This additional time is required because of the extremely large volume of material to be reviewed and prepared for disclosure.

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 Sharon Menzies at (416) 327-1429.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

Public Works
Water & Wastewater Services
3501 Schmon Pkwy., PO Box 1042, Thorold, ON L2V 4T7
Telephone: 905-980-6000 Toll-free: 1-800-263-7215 Fax: 905-685-5205
www.niagararegion.ca

Environmental Record Search

Date of Report: Monday, January 21, 2019

Subject Property: 8970 Stanley Ave Niagara Falls

Water and Wastewater Services Search Completed By:		
Full name: CRAIG BURNS, EEO	Department: Public Works	Division: W&WW
Email: craig.burns@niagararegion.ca	Phone: 905 685-4225	Extension: 3309

Search Type: Any documentation related to environmental concerns, orders, spills, inspections or permits pertaining to the subject property.

Files searched (E.05):

NIAGARA FALLS MISC FILES	1991 - Present
ACTION REQUEST/VIOLATION NOTICE	1985 - Present
INCIDENT REPORTS	2001 - Present

Results of Search: <u>No documentation has been found that references the subject property</u>.

Comments:
Disclaimer: The files searched were limited to those shown above. Niagara Region makes no representation as to compliance or non-compliance with any other legislation resulting from this disclosure.

RECORD OF INTERVIEW – PROJECT #TG181134

Purpose of Interview (PI ESA / Due Diligence ESA)	Phase One Environmental Site Assessment		
Date of Interview:	Jan. 24. 2019	Format (phone or meeting)	meeting
Site Address:	8970 Stanley Ave. NF. L2E 6T8		
Interviewee & Affiliation & Contact Number:	Ralf Temo		
wood Interviewer / Office Location:	Thorold, ON - Loren Jansen		

SITE INFORMATION

1) Describe land use history. Was the property ever used for industrial use, dry cleaning, a garage or bulk liquid dispensing facility, including a gasoline outlet?

35-40 yrs old no.

2) Are you aware of any environmental issues associated with the subject property such as waste disposal, landfilling, chemical use and / or storage (including spills), above or underground storage tanks, MOE orders, etc.? (obtain details) Yes (No)

3) Are you aware of any environmental building management issues such as asbestos containing materials, PCBs in electrical equipment, odour, mould, indoor air quality, UFFI, ODSs, lead-based paints, etc.? (obtain details) Yes (No)

4) Are you aware of any site-specific permits, waste generator number(s), certificates of approval, water well records or sewer use / discharge permits? Yes (No)

5) Are you aware of any current or historical environmental concerns associated with adjacent properties? (obtain details)
Yes (No)

6) Are you aware of any previous environmental investigations, inspections, audits or reports (e.g., environmental assessment and remediation, tank removals, asbestos or mould surveys) for the subject property or adjacent properties? Yes (No)

7) Is there anyone else Wood should contact for additional environmental information? (name, title, phone no.) Yes (No)

Patterson, Kelly

From: Public Information Services <publicinformationservices@tssa.org>
Sent: Friday, January 4, 2019 12:49 PM
To: Mccann, Cameron
Subject: Re: Database Search for TG181134 (No Record)

Hello,

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 complete our release of public information form found at https://www.tssa.org/en/about-tssa/release-of-public-information.aspx?_mid_=392 and email the completed form to 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 great day,

Roxana

From: Mccann, Cameron <cameron.mccann@woodplc.com>
Sent: January 4, 2019 10:06 AM
To: Public Information Services <publicinformationservices@tssa.org>
Subject: Database Search for TG181134

Hello,

I'm emailing to ask if you could please conduct a search for the following addresses for ASTs, USTs, environmental records and spills, etc?

The following addresses are in Niagara Falls, Ontario

8970 Stanley Avenue
9015 Stanley Avenue
8699 Stanley Avenue

5795 Don Murie Street
5955 Don Murie Street

7001 Reixinger Road
7573 Reixinger Road

4527 Chippawa Parkway
5511 Chippawa Parkway
5571 Chippawa Parkway

Thanks,

Cameron McCann, M.Sc.
Environmental Scientist
3300 Merrittville Hwy, Unit 5
Thorold, ON L2V 4Y6
Direct: (905)-687-6616
Mobile: (289)-696-4730
www.woodplc.com

Appendix F

ERIS Report

ENVIRONMENTAL RISK INFORMATION SERVICES

DATABASE REPORT

Project Property:	*Phase One ESA* *8970 Stanley Avenue* *Niagara Falls ON L2E 6X8*
Project No:	*TG181134*
Report Type:	*Quote - Custom-Build Your Own Report*
Order No:	*20180627025*
Requested by:	*Wood Environment & Infrastructure Solutions, Inc.*
Date Completed:	*December 14, 2018*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

Table of Contents

Executive Summary

Property Information:

Project Property: *Phase One ESA*
8970 Stanley Avenue Niagara Falls ON L2E 6X8

Project No: *TG181134*

Order Information:

Order No: *20180627025*
Date Requested: *June 27, 2018*
Requested by: *Wood Environment & Infrastructure Solutions, Inc.*
Report Type: *Quote - Custom-Build Your Own Report*

Historical/Products:

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.25km	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	0	0
AUWR	Automobile Wrecking & Supplies	Y	0	0	0
BORE	Borehole	Y	0	12	12
CA	Certificates of Approval	Y	0	2	2
CFOT	Commercial Fuel Oil Tanks	Y	0	0	0
CHEM	Chemical Register	Y	0	0	0
CNG	Compressed Natural Gas Stations	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
DRYCLEANERS	Dry Cleaning Facilities	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	1	4	5
EEM	Environmental Effects Monitoring	Y	0	0	0
EHS	ERIS Historical Searches	Y	0	0	0
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	1	0	1
GHG	Greenhouse Gas Emissions from Large Facilities	Y	0	0	0
HINC	TSSA Historic Incidents	Y	0	0	0
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0	0	0
INC	TSSA Incidents	Y	0	1	1
LIMO	Landfill Inventory Management Ontario	Y	0	0	0
MINE	Canadian Mine Locations	Y	0	0	0
MISA PENALTY	Environmental Penalty Annual Report	Y	0	0	0

Database	Name	Searched	Project Property	Boundary to 0.25km	Total
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
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
NEBI	National Energy Board Pipeline Incidents	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	1	1
PRT	Private and Retail Fuel Storage Tanks	Y	0	0	0
PTTW	Permit to Take Water	Y	1	0	1
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	0	0
SPL	Ontario Spills	Y	0	2	2
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	0	0
WWIS	Water Well Information System	Y	0	2	2
	Total:		3	24	27

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev diff (m)	Page Number
1	GEN	1019455 ONTARIO INC., O/A	8970 STANLEY AVE. SOUTH NIAGARA FALLS ON L2G 6X8	-/0.0	-12.86	16
1	PTTW	Oakland Golf Club (1019455 Ontario Inc.)	8970 Stanley Ave. South, Lot 30W, Plan 239 CITY OF NIAGARA FALLS ON	-/0.0	-12.86	16
2	ECA	Marineland of Canada Inc.	9015 Stanley Ave Niagara Falls ON L2E 6X8	-/0.0	-22.70	16

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
3	ECA	Queensway Chippawa Props. Inc.	Ref Plan 24T-94009 Niagara Falls ON L4K 4R1	E/12.8	-69.99	17
3	ECA	Queensway Chippawa Props. Inc.	Ref Plan 24T-94009 Niagara Falls ON L4K 4R1	E/12.8	-69.99	17
4	BORE		ON	ENE/25.2	-74.12	17
5	ECA	The Corporation of the City of Niagara Falls	Stanley Avenue and Lyons Creek Rd Niagara Falls ON L2E 2L1	SSW/54.0	-61.63	18
6	BORE		ON	ENE/68.7	-68.80	18
7	BORE		ON	ENE/72.7	-75.37	18
8	BORE		ON	ENE/114.6	-52.64	19
9	BORE		ON	ENE/124.4	-71.10	20
10	WWIS		lot 3 ON ***Well ID:*** 6602251	SSW/138.2	-16.69	20
11	BORE		ON	ENE/141.9	-48.23	22
12	BORE		ON	ENE/151.5	-55.50	23
13	BORE		ON	NE/154.7	-46.76	23

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
14	BORE		ON	NNE/156.6	-32.74	24
15	PINC		4540 Lyons Pkwy, Niagara Falls ON	ENE/157.3	-33.47	24
16	BORE		ON	ENE/161.7	-40.82	25
17	CA	NIAGARA FALLS CITY	LYONS PKWAY/LYONS CREEK RD. NIAGARA FALLS ON	ENE/190.4	-41.95	25
17	CA	NIAGARA FALLS CITY	LYONS PKWAY/LYONS CREEK RD. NIAGARA FALLS ON	ENE/190.4	-41.95	25
18	SPL	Enbridge Gas Distribution Inc.	4540 Lions Pkwy, Chippawa Niagara Falls ON	ENE/191.0	-37.14	26
19	WWIS		lot 317 NIAGARA FALL ON ***Well ID:*** 6604765	NW/208.3	-14.19	26
20	BORE		ON	NE/233.0	-49.60	28
21	BORE		ON	NNE/242.3	-11.22	29
22	ECA	The Corporation of the City of Niagara Falls	Niagara Falls ON	ENE/242.4	-23.83	29
23	INC		5789 LYONS CREEK ROAD, NIAGARA FALLS ON	WSW/250.0	-18.91	30
23	SPL		5789 Lyons Creek Road Niagara Falls ON	WSW/250.0	-18.91	31

Executive Summary: Summary By Data Source

BORE - Borehole

A search of the BORE database, dated 1875-Jul 2014 has found that there are 12 BORE site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	ON	25.2	4
	ON	68.7	6
	ON	72.7	7
	ON	114.6	8
	ON	124.4	9
	ON	141.9	11
	ON	151.5	12
	ON	154.7	13
	ON	156.6	14

Site	Address	Distance (m)	Map Key
	ON	161.7	16
	ON	233.0	20
	ON	242.3	21

CA - Certificates of Approval

A search of the CA database, dated 1985-Oct 30, 2011* has found that there are 2 CA site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
NIAGARA FALLS CITY	LYONS PKWAY/LYONS CREEK RD. NIAGARA FALLS ON	190.4	17
NIAGARA FALLS CITY	LYONS PKWAY/LYONS CREEK RD. NIAGARA FALLS ON	190.4	17

ECA - Environmental Compliance Approval

A search of the ECA database, dated Oct 2011-Oct 31, 2018 has found that there are 5 ECA site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
Marineland of Canada Inc.	9015 Stanley Ave Niagara Falls ON L2E 6X8	0.0	2
Queensway Chippawa Props. Inc.	Ref Plan 24T-94009 Niagara Falls ON L4K 4R1	12.8	3
Queensway Chippawa Props. Inc.	Ref Plan 24T-94009 Niagara Falls ON L4K 4R1	12.8	3

Site	Address	Distance (m)	Map Key
The Corporation of the City of Niagara Falls	Stanley Avenue and Lyons Creek Rd Niagara Falls ON L2E 2L1	54.0	5
The Corporation of the City of Niagara Falls	Niagara Falls ON	242.4	22

GEN - Ontario Regulation 347 Waste Generators Summary

A search of the GEN database, dated 1986-June 30, 2018 has found that there are 1 GEN site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
1019455 ONTARIO INC., O/A	8970 STANLEY AVE. SOUTH NIAGARA FALLS ON L2G 6X8	0.0	1

INC - TSSA Incidents

A search of the INC database, dated Feb 28, 2017 has found that there are 1 INC site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	5789 LYONS CREEK ROAD, NIAGARA FALLS ON	250.0	23

PINC - TSSA Pipeline Incidents

A search of the PINC database, dated Feb 28, 2017 has found that there are 1 PINC site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	4540 Lyons Pkwy, Niagara Falls ON	157.3	15

PTTW - Permit to Take Water

A search of the PTTW database, dated 1994-Oct 31, 2018 has found that there are 1 PTTW site(s) within approximately 0.25

kilometers of the project property.

Site	Address	Distance (m)	Map Key
Oakland Golf Club (1019455 Ontario Inc.)	8970 Stanley Ave. South, Lot 30W, Plan 239 CITY OF NIAGARA FALLS ON	0.0	1

SPL - Ontario Spills

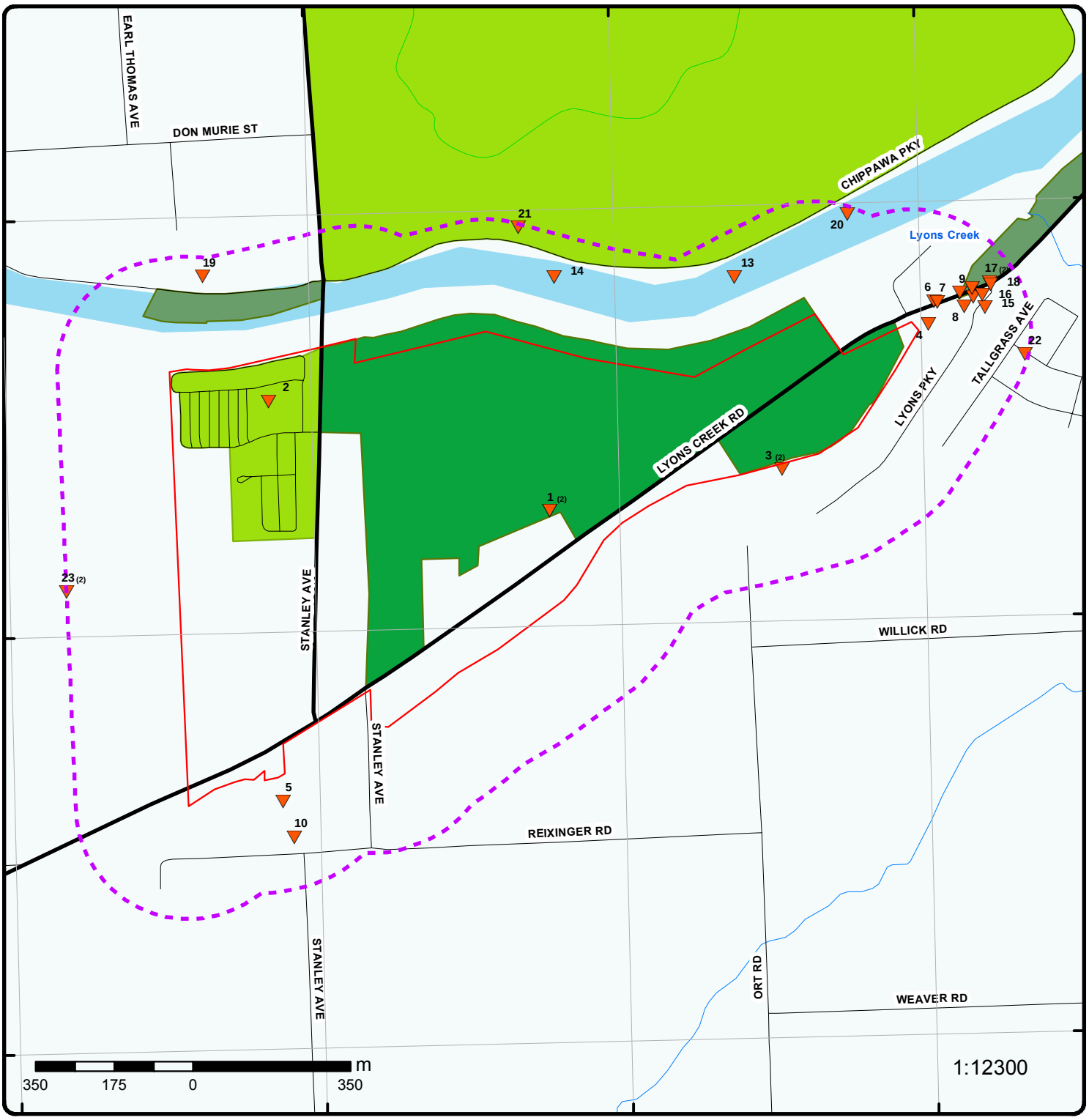
A search of the SPL database, dated 1988-Jul 2018 has found that there are 2 SPL site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
Enbridge Gas Distribution Inc.	4540 Lions Pkwy, Chippawa Niagara Falls ON	191.0	18
	5789 Lyons Creek Road Niagara Falls ON	250.0	23

WWIS - Water Well Information System

A search of the WWIS database, dated Dec 31, 2017 has found that there are 2 WWIS site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	lot 3 ON ***Well ID:*** 6602251	138.2	10
	lot 317 NIAGARA FALL ON ***Well ID:*** 6604765	208.3	19



Map : 0.25 Kilometer Radius

Order No: 20180627025

Address: 8970 Stanley Avenue, Niagara Falls, ON, L2E 6X8

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES

- 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
- National Park
- Provincial or Territorial Park
- Other Park
- Golf Course or Driving Range
- Park or Sports Field
- Other Recreation Area

79°4'30"W

43°3'N

43°3'N

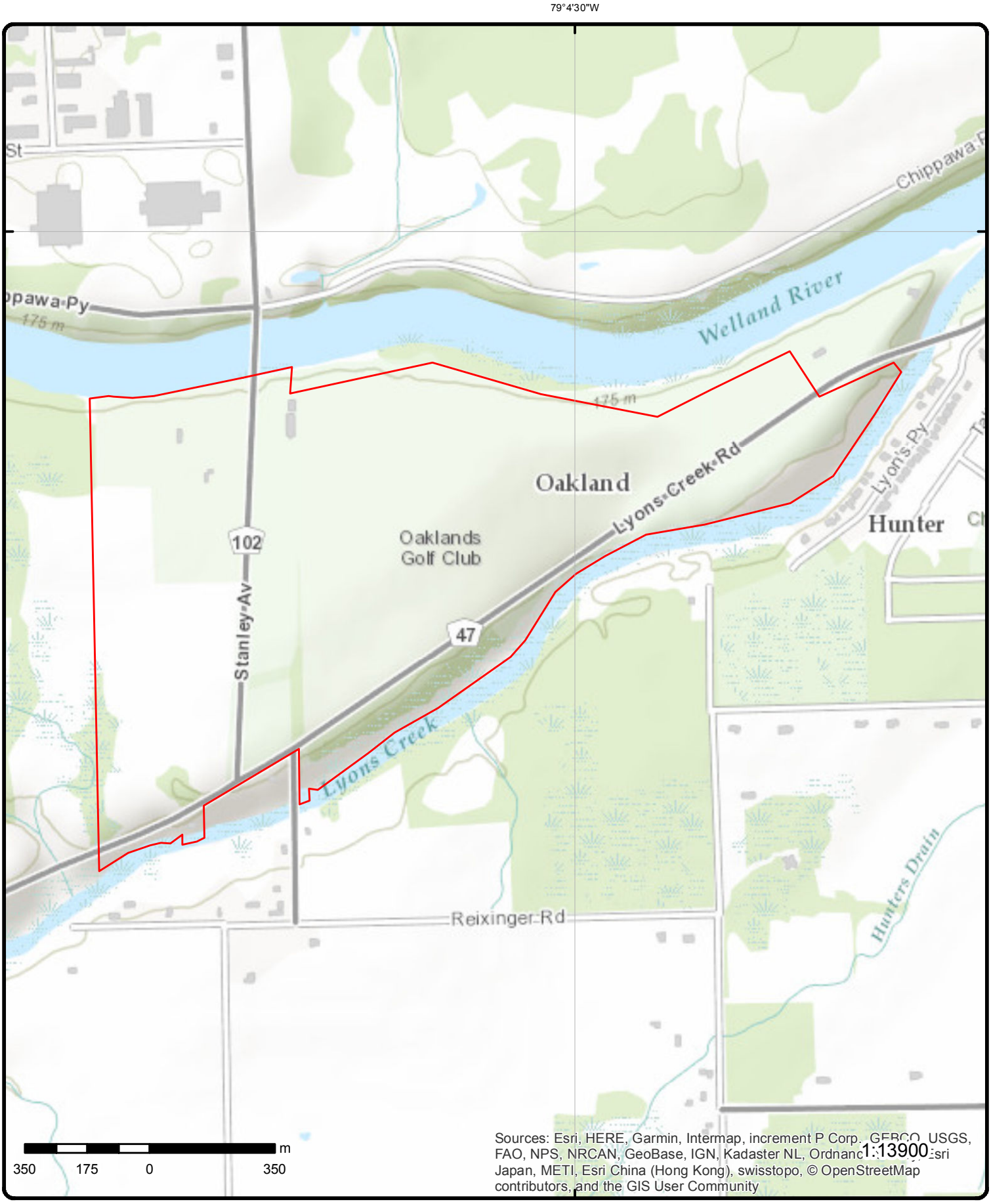
Aerial (2017)

Address: 8970 Stanley Avenue, Niagara Falls, ON, L2E 6X8

Source: ESRI World Imagery

Order No: 20180627025

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES



Topographic Map

Address: 8970 Stanley Avenue, Niagara Falls, ON, L2E 6X8

Source: ESRI World Topographic Map

Order No: 20180627025

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES

Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	1 of 2	-/0.0	177.8 / -12.86	1019455 ONTARIO INC., O/A 8970 STANLEY AVE. SOUTH NIAGARA FALLS ON L2G 6X8	GEN

Generator No.: ON2686400
Status:
Approval Years: 01
Contam. Facility:
MHSW Facility:
SIC Code: 9999
SIC Description: OTHER SERVICES

PO Box No.:
Country:
Choice of Contact:
Co Admin:
Phone No. Admin:

--Details--
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	2 of 2	-/0.0	177.8 / -12.86	Oakland Golf Club (1019455 Ontario Inc.) 8970 Stanley Ave. South, Lot 30W, Plan 239 CITY OF NIAGARA FALLS ON	PTTW

EBR Registry No.: IA9E0750
Ministry Ref. No.: 23007259
Notice Type: Instrument Decision
Company Name: Oakland Golf Club (1019455 Ontario Inc.)
Proponent Name:
Proposal Address: 8970 Stanley Avenue South, Niagara Falls Ontario, L2E 6X8
Instrument Type: (OWRA s. 34) - Permit to Take Water
Location Other:
URL:

Proposal Date: June 22, 1999
Notice Date: September 06, 2001
Year: 1999

Location:

8970 Stanley Ave. South, Lot 30W, Plan 239 CITY OF NIAGARA FALLS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
2	1 of 1	-/0.0	167.9 / -22.70	Marineland of Canada Inc. 9015 Stanley Ave Niagara Falls ON L2E 6X8	ECA

Approval No: 1107-9LGMSR
Approval Date: 2014-09-10
Status: Approved
Record Type: ECA
Link Source: IDS
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Address: 9015 Stanley Ave
Full Address:
Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/4595-9H3LDZ-14.pdf

SWP Area Name:
MOE District:
City: Niagara Falls
Longitude:
Latitude:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
3	1 of 2	E/12.8	120.6 / -69.99	Queensway Chippawa Props. Inc. Ref Plan 24T-94009 Niagara Falls ON L4K 4R1	ECA

Approval No: 0450-A4YQ94
Approval Date: 2015-12-08
Status: Approved
Record Type: ECA
Link Source: IDS
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Address: Ref Plan 24T-94009
Full Address:
Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/0952-A4JTV7-14.pdf

SWP Area Name: Niagara Peninsula
MOE District: Niagara
City: Niagara Falls
Longitude: -79.0706
Latitude: 43.0447

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
3	2 of 2	E/12.8	120.6 / -69.99	Queensway Chippawa Props. Inc. Ref Plan 24T-94009 Niagara Falls ON L4K 4R1	ECA

Approval No: 6185-ASWT8K
Approval Date: 2017-11-14
Status: Approved
Record Type: ECA
Link Source: IDS
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Address: Ref Plan 24T-94009
Full Address:
Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/6241-AS2JNS-14.pdf

SWP Area Name: Niagara Peninsula
MOE District: Niagara
City: Niagara Falls
Longitude: -79.0706
Latitude: 43.0447

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
4	1 of 1	ENE/25.2	116.5 / -74.12	ON	BORE

Borehole ID: 606784
Use: Geotechnical/Geological Investigation
Drill Method: Power auger
Easting: 657475
Location Accuracy:
Elev. Reliability Note:
Total Depth m: -999
Township:
Lot:
Completion Date: OCT-1966
Primary Water Use: Not Used

Type: Borehole
Status:
UTM Zone: 17
Northing: 4767907
Orig. Ground Elev m: 173
DEM Ground Elev m: 143
Primary Name:
Concession:
Municipality:
Static Water Level: .2
Sec. Water Use:

--Details--

Stratum ID: 218375940
Bottom Depth(m): 1.0
Top Depth(m): 0.0
Stratum Desc: FILL,STONES,GRAVEL. STIFF.

Stratum ID: 218375941
Bottom Depth(m): 2.4
Top Depth(m): 1.0
Stratum Desc: FILL,SILT,CLAY,SAND.BROWN,FIRM, WATER STABLE AT 567.6 FEET.

Stratum ID: 218375942
Bottom Depth(m): 2.7
Top Depth(m): 2.4
Stratum Desc: SILT,CLAY,ORGANIC. GREY,VERY STIFF.

Stratum ID: 218375943
Bottom Depth(m): 3.8
Top Depth(m): 2.7
Stratum Desc: PEAT. SOFT.

Stratum ID: 218375944
Top Depth(m): 3.8

Bottom Depth(m):	10.6	**Stratum Desc:**	CLAY(52),SILT(44), GRAVEL(04). VARI-COLOURED,SOFT.
Stratum ID:	218375945	**Top Depth(m):**	10.6
Bottom Depth(m):	14.0	**Stratum Desc:**	SILT. BROWN,FIRM.
Stratum ID:	218375946	**Top Depth(m):**	14.0
Bottom Depth(m):	14.9	**Stratum Desc:**	TILL,CLAY,GRAVEL. BROWN,GLACIAL,HARD, AGE GLACIAL.
Stratum ID:	218375947	**Top Depth(m):**	14.9
Bottom Depth(m):	15.5	**Stratum Desc:**	SHALE. BROKEN.
Stratum ID:	218375948	**Top Depth(m):**	15.5
Bottom Depth(m):		**Stratum Desc:**	BEDROCK,DOLOMITE. 021 040 038 018035040 025 01

5 **1 of 1** **SSW/54.0** **129.0 / -61.63** **The Corporation of the City of Niagara Falls**
Stanley Avenue and Lyons Creek Rd
Niagara Falls ON L2E 2L1 **ECA**

Approval No:	6061-7U6RTR	**SWP Area Name:**	Niagara Peninsula
Approval Date:	2009-07-23	**MOE District:**	Niagara
Status:	Approved	**City:**	
Record Type:	ECA	**Longitude:**	-79.0844
Link Source:	IDS	**Latitude:**	43.0383
Approval Type:	ECA-Municipal Drinking Water Systems		
Project Type:	Municipal Drinking Water Systems		
Address:	Stanley Avenue and Lyons Creek Rd		
Full Address:			
Full PDF Link:			

6 **1 of 1** **ENE/68.7** **121.8 / -68.80** **ON** **BORE**

Borehole ID:	857773	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	Decommissioned
Drill Method:	Hollow stem auger	**UTM Zone:**	17
Easting:	657488	**Northing:**	4767959
Location Accuracy:		**Orig. Ground Elev m:**	-999.9
Elev. Reliability Note:		**DEM Ground Elev m:**	145
Total Depth m:	3.7	**Primary Name:**	
Township:	WILLOUGHBY	**Concession:**	CON 3
Lot:	0	**Municipality:**	
Completion Date:	12-JAN-1967	**Static Water Level:**	-999.9
Primary Water Use:		**Sec. Water Use:**	

--Details--

Stratum ID:	220433423	**Top Depth(m):**	0.0
Bottom Depth(m):	0.9	**Stratum Desc:**	Reddish brown clayey and stoney mixed fill
Stratum ID:	220433424	**Top Depth(m):**	0.9
Bottom Depth(m):	2.3	**Stratum Desc:**	Grey-black or brown silty clay with sand peat. Bouncing
Stratum ID:	220433425	**Top Depth(m):**	2.3
Bottom Depth(m):	3.7	**Stratum Desc:**	Reddish brown silty clay.

7 **1 of 1** **ENE/72.7** **115.2 / -75.37** **ON** **BORE**

Borehole ID: 606785 **Type:** Borehole
Use: Geotechnical/Geological Investigation **Status:**
Drill Method: Power auger **UTM Zone:** 17
Easting: 657495 **Northing:** 4767957
Location Accuracy: **Orig. Ground Elev m:** 172
Elev. Reliability Note: **DEM Ground Elev m:** 140
Total Depth m: 3.7 **Primary Name:**
Township: **Concession:**
Lot: **Municipality:**
Completion Date: OCT-1966 **Static Water Level:** .1
Primary Water Use: Not Used **Sec. Water Use:**

--Details--

Stratum ID: 218375949 **Top Depth(m):** 0.0
Bottom Depth(m): 1.2 **Stratum Desc:** FILL,STONES,CLAY. BROWN,STIFF.

Stratum ID: 218375950 **Top Depth(m):** 1.2
Bottom Depth(m): 2.7 **Stratum Desc:** CLAY,SILT,PEAT. BLACK,SOFT, WATER STABLE AT 564.8 FEET.

Stratum ID: 218375951 **Top Depth(m):** 2.7
Bottom Depth(m): 3.7 **Stratum Desc:** CLAY,SILT. BROWN,VERY SOFT. 060 0000001400040002LT(44), G

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8 ***1 of 1*** ***ENE/114.6*** ***138.0 / -52.64*** ***ON*** ***BORE***

Borehole ID: 606783 **Type:** Borehole
Use: Geotechnical/Geological Investigation **Status:**
Drill Method: Power auger **UTM Zone:** 17
Easting: 657555 **Northing:** 4767947
Location Accuracy: **Orig. Ground Elev m:** 173
Elev. Reliability Note: **DEM Ground Elev m:** 167
Total Depth m: 18.7 **Primary Name:**
Township: **Concession:**
Lot: **Municipality:**
Completion Date: OCT-1966 **Static Water Level:** .2
Primary Water Use: Not Used **Sec. Water Use:**

--Details--

Stratum ID: 218375932 **Top Depth(m):** 0.0
Bottom Depth(m): 0.1 **Stratum Desc:** SOIL,UNSPECIFIED.

Stratum ID: 218375933 **Top Depth(m):** 0.1
Bottom Depth(m): 0.9 **Stratum Desc:** FILL. VERY SOFT,GRANULAR.

Stratum ID: 218375934 **Top Depth(m):** 0.9
Bottom Depth(m): 2.1 **Stratum Desc:** FILL,CLAY,SILT,SAND.BROWN,FIRM, WATER STABLE AT 567.4 FEET.

Stratum ID: 218375935 **Top Depth(m):** 2.1
Bottom Depth(m): 3.0 **Stratum Desc:** CLAY,PEAT,SILT. GREY,SOFT.

Stratum ID: 218375936 **Top Depth(m):** 3.0
Bottom Depth(m): 13.7 **Stratum Desc:** SILT(64),CLAY(29), GRAVEL(07). VARI-COLOURED,FIRM.

Stratum ID: 218375937 **Top Depth(m):** 13.7
Bottom Depth(m): 15.5 **Stratum Desc:** SILT. BROWN,STIFF.

Stratum ID: 218375938 **Top Depth(m):** 15.5
Bottom Depth(m): 16.6 **Stratum Desc:** TILL,CLAY,GRAVEL. BROWN,GLACIAL.

Stratum ID: 218375939 **Top Depth(m):** 16.6
Bottom Depth(m): 18.7 **Stratum Desc:** BEDROCK,DOLOMITE. 033 030 016025030 020 028 000030260

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9 *1 of 1* *ENE/124.4* *119.5 / -71.10* *ON* **BORE**

Borehole ID: 857772 **Type:** Borehole
Use: Geotechnical/Geological Investigation **Status:** Decommissioned
Drill Method: Hand auger **UTM Zone:** 17
Easting: 657545 **Northing:** 4767978
Location Accuracy: **Orig. Ground Elev m:** 172
Elev. Reliability Note: **DEM Ground Elev m:** 148
Total Depth m: 3.7 **Primary Name:**
Township: WILLOUGHBY **Concession:** CON 3
Lot: 0 **Municipality:**
Completion Date: 12-JAN-1967 **Static Water Level:** .6
Primary Water Use: **Sec. Water Use:**

--Details--

Stratum ID: 220433420 **Top Depth(m):** 0.0
Bottom Depth(m): 1.2 **Stratum Desc:** Reddish brown clayey and stoney mixed fill

Stratum ID: 220433421 **Top Depth(m):** 1.2
Bottom Depth(m): 2.7 **Stratum Desc:** Grey-black or brown silty clay with sand peat. Bouncing

Stratum ID: 220433422 **Top Depth(m):** 2.7
Bottom Depth(m): 3.7 **Stratum Desc:** Reddish brown silt clay, WTPL

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10 *1 of 1* *SSW/138.2* *173.9 / -16.69* *lot 3* *ON* **WWIS**

Well ID: 6602251 **Data Entry Status:**
Construction Date: **Data Src:** 1
Primary Water Use: Domestic **Date Received:** 6/22/1966
Sec. Water Use: 0 **Selected Flag:** Yes
Final Well Status: Water Supply **Abandonment Rec:**
Water Type: **Contractor:** 4720
Casing Material: **Form Version:** 1
Audit No: **Owner:**
Tag: **Street Name:**
Construction Method: **County:** NIAGARA (WELLAND)
Elevation (m): **Municipality:** NIAGARA FALLS CITY (WILLOUGHBY)
Elevation Reliability: **Site Info:**
Depth to Bedrock: **Lot:** 003
Well Depth: **Concession:**
Overburden/Bedrock: **Concession Name:** BF WR
Pump Rate: **Easting NAD83:**
Static Water Level: **Northing NAD83:**
Flowing (Y/N): **Zone:**
Flow Rate: **UTM Reliability:**
Clear/Cloudy:

Bore Hole Information

Bore Hole ID: 10461984 **Elevation:** 175.78
DP2BR: **Elevrc:**
Spatial Status: **Zone:** 17
Code OB: o **East83:** 656067

Code OB Desc:	Overburden	**Org CS:**	
Open Hole:		**North83:**	4766768
Cluster Kind:		**UTMRC:**	5
Date Completed:	17-MAY-66	**UTMRC Desc:**	margin of error : 100 m - 300 m
Remarks:		**Location Method:**	p5
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	932594350
Layer:	2
Color:	
General Color:	
Mat1:	11
Most Common Material:	GRAVEL
Mat2:	
Other Materials:	
Mat3:	
Other Materials:	
Formation Top Depth:	78
Formation End Depth:	83
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	932594349
Layer:	1
Color:	3
General Color:	BLUE
Mat1:	05
Most Common Material:	CLAY
Mat2:	
Other Materials:	
Mat3:	
Other Materials:	
Formation Top Depth:	0
Formation End Depth:	78
Formation End Depth UOM:	ft

Method of Construction & Well Use

Method Construction ID:	966602251
Method Construction Code:	1
Method Construction:	Cable Tool
Other Method Construction:	

Pipe Information

Pipe ID:	11010554
Casing No:	1
Comment:	
Alt Name:	

Construction Record - Casing

Casing ID:	930750596
Layer:	1
Material:	1
Open Hole or Material:	STEEL
Depth From:	
Depth To:	83
Casing Diameter:	6
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

Results of Well Yield Testing

Pump Test ID:	996602251
Pump Set At:	
Static Level:	12
Final Level After Pumping:	50
Recommended Pump Depth:	50
Pumping Rate:	6
Flowing Rate:	
Recommended Pump Rate:	2
Levels UOM:	ft
Rate UOM:	GPM
Water State After Test Code:	1
Water State After Test:	CLEAR
Pumping Test Method:	1
Pumping Duration HR:	2
Pumping Duration MIN:	0
Flowing:	N

Water Details

Water ID:	933949554
Layer:	1
Kind Code:	1
Kind:	FRESH
Water Found Depth:	83
Water Found Depth UOM:	ft

11 ***1 of 1*** ***ENE/141.9*** ***142.4 / -48.23*** ***ON*** ***BORE***

Borehole ID:	606786	***Type:***	Borehole
Use:	Geotechnical/Geological Investigation	***Status:***	
Drill Method:	Power auger	***UTM Zone:***	17
Easting:	657575	***Northing:***	4767967
Location Accuracy:		***Orig. Ground Elev m:***	172
Elev. Reliability Note:		***DEM Ground Elev m:***	171
Total Depth m:	3.7	***Primary Name:***	
Township:		***Concession:***	
Lot:		***Municipality:***	
Completion Date:	OCT-1966	***Static Water Level:***	.1
Primary Water Use:	Not Used	***Sec. Water Use:***	

--Details--

Stratum ID:	218375952	***Top Depth(m):***	0.0
Bottom Depth(m):	0.9	***Stratum Desc:***	FILL,STONES,CLAY. BROWN,STIFF.
Stratum ID:	218375953	***Top Depth(m):***	0.9
Bottom Depth(m):	2.3	***Stratum Desc:***	CLAY,SILT,PEAT. BLACK,FIRM, WATER STABLE AT 564.8 FEET.

Stratum ID:	218375954	**Top Depth(m):**	2.3
Bottom Depth(m):	3.7	**Stratum Desc:**	CLAY,SILT. BROWN,SOFT. 053 044 020 0000001600030005

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12 **1 of 1** **ENE/151.5** **135.1 / -55.50** **ON** **BORE**

Borehole ID:	857774	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	Decommissioned
Drill Method:	Hollow stem auger	**UTM Zone:**	17
Easting:	657573	**Northing:**	4767987
Location Accuracy:		**Orig. Ground Elev m:**	-999.9
Elev. Reliability Note:		**DEM Ground Elev m:**	164
Total Depth m:	3.7	**Primary Name:**	
Township:	WILLOUGHBY	**Concession:**	CON 3
Lot:	0	**Municipality:**	
Completion Date:	12-JAN-1967	**Static Water Level:**	-999.9
Primary Water Use:		**Sec. Water Use:**	

--Details--

Stratum ID:	220433426	**Top Depth(m):**	0.0
Bottom Depth(m):	1.7	**Stratum Desc:**	Reddish brown clayey and stoney mixed fill
Stratum ID:	220433427	**Top Depth(m):**	1.7
Bottom Depth(m):	2.7	**Stratum Desc:**	Grey-black or brown silty clay with sand peat. Bouncing
Stratum ID:	220433428	**Top Depth(m):**	2.7
Bottom Depth(m):	3.7	**Stratum Desc:**	Reddish brown silty clay

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13 **1 of 1** **NE/154.7** **143.8 / -46.76** **ON** **BORE**

Borehole ID:	606788	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Power auger	**UTM Zone:**	17
Easting:	657045	**Northing:**	4768012
Location Accuracy:		**Orig. Ground Elev m:**	174
Elev. Reliability Note:		**DEM Ground Elev m:**	140
Total Depth m:	15.7	**Primary Name:**	
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	JUN-1971	**Static Water Level:**	1.1
Primary Water Use:	Not Used	**Sec. Water Use:**	

--Details--

Stratum ID:	218375958	**Top Depth(m):**	0.0
Bottom Depth(m):	0.2	**Stratum Desc:**	SOIL.
Stratum ID:	218375959	**Top Depth(m):**	0.2
Bottom Depth(m):	14.0	**Stratum Desc:**	CLAY,SILT,GRAVEL. BROWN,LACUSTRINE,FIRM, AGE GLACIAL.
Stratum ID:	218375960	**Top Depth(m):**	14.0
Bottom Depth(m):	15.7	**Stratum Desc:**	SILT. GREY,LACUSTRINE,LOOSE, AGE GLACIAL, WATER STABLE AT 568.9 FEET. 017 02800005011004600

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
14	1 of 1	NNE/156.6	157.9 / -32.74	ON	BORE

Borehole ID: 606702
Use: Geotechnical/Geological Investigation
Drill Method: Power auger
Easting: 656645
Location Accuracy:
Elev. Reliability Note:
Total Depth m: 11.4
Township:
Lot:
Completion Date: JUN-1971
Primary Water Use: Not Used
Type: Borehole
Status:
UTM Zone: 17
Northing: 4768012
Orig. Ground Elev m: 176
DEM Ground Elev m: 156
Primary Name:
Concession:
Municipality:
Static Water Level: .3
Sec. Water Use:

--Details--

Stratum ID	Bottom Depth(m)	Top Depth(m)	Stratum Desc
218375521	0.2	0.0	SOIL.
218375522	2.6	0.2	CLAY,GRAVEL. BROWN,STIFF.
218375523	4.4	2.6	SILT,CLAY,SAND. BROWN,FIRM, WATER STABLE AT 578.0 FEET.
218375524	9.1	4.4	CLAY,SAND. BROWN,LACUSTRINE,VERY SOFT, LAYERED.
218375525	11.4	9.1	CLAY,SILT. GREY,LACUSTRINE,FIRM, AGE GLACIAL. 017 0280000500900085008001450200030000704

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
15	1 of 1	ENE/157.3	157.1 / -33.47	4540 Lyons Pkwy, Niagara Falls ON	PINC

Incident ID:
Incident No: 888924
Type: FS-Pipeline Incident
Status Code: Pipeline Damage Reason Est
Fuel Occurrence Tp:
Fuel Type:
Tank Status: RC Established
Task No: 4058296
Spills Action Centre:
Method Details: E-mail
Fuel Category: Natural Gas
Date of Occurrence:
Occurrence Start Date: 2012/12/03
Operation Type:
Pipeline Type:
Regulator Type:
Summary: 4540 Lyons Pkwy, Niagara Falls - 2" Pipeline Hit
Reported By: Bill Elliott - Enbridge
Affiliation:
Occurrence Desc:
Damage Reason: Excavation practices not sufficient
Notes:
Health Impact:
Environment Impact:
Property Damage: No
Service Interupt:
Enforce Policy: Yes
Public Relation:
Pipeline System:
Depth:
Pipe Material:
PSIG:
Attribute Category: FS-Perform P-line Inc Invest
Regualtor Location:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
16	1 of 1	ENE/161.7	149.8 / -40.82	ON	BORE

Borehole ID: 606787
Use: Geotechnical/Geological Investigation
Drill Method: Power auger
Easting: 657595
Location Accuracy:
Elev. Reliability Note:
Total Depth m: 3.7
Township:
Lot:
Completion Date: OCT-1966
Primary Water Use: Not Used

Type: Borehole
Status:
UTM Zone: 17
Northing: 4767972
Orig. Ground Elev m: 173
DEM Ground Elev m: 176
Primary Name:
Concession:
Municipality:
Static Water Level: -999.9
Sec. Water Use:

--Details--

Stratum ID: 218375955
Bottom Depth(m): 1.7
Top Depth(m): 0.0
Stratum Desc: FILL,STONES,CLAY. BROWN,VERY SOFT.

Stratum ID: 218375956
Bottom Depth(m): 2.7
Top Depth(m): 1.7
Stratum Desc: CLAY,SILT,ORGANIC. BLACK,STIFF.

Stratum ID: 218375957
Bottom Depth(m): 3.7
Top Depth(m): 2.7
Stratum Desc: CLAY,SILT. BROWN,SOFT. 018 044 022 00000026000550140000

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
17	1 of 2	ENE/190.4	148.7 / -41.95	NIAGARA FALLS CITY LYONS PKWAY/LYONS CREEK RD. NIAGARA FALLS ON	CA

Certificate #: 3-1316-98-
Application Year: 98
Issue Date: 9/2/1998
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)	Elev/Diff (m)	Site	DB
17	2 of 2	ENE/190.4	148.7 / -41.95	NIAGARA FALLS CITY LYONS PKWAY/LYONS CREEK RD. NIAGARA FALLS ON	CA

Certificate #: 7-0877-98-
Application Year: 98
Issue Date: 9/2/1998
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)	Elev/Diff (m)	Site	DB

18 | **1 of 1** | **ENE/191.0** | **153.5 / -37.14** | **Enbridge Gas Distribution Inc.**
4540 Lions Pkwy, Chippawa
Niagara Falls ON | **SPL**

Ref No:	3278-8YSJPQ	**Discharger Report:**	
Site No:		**Material Group:**	
Incident Dt:	05-OCT-12	**Client Type:**	
Year:		**Sector Type:**	Pipeline/Components
Incident Cause:	Operator/Human error	**Source Type:**	
Incident Event:		**Nearest Watercourse:**	
Contaminant Code:	35	**Site Name:**	line strike<UNOFFICIAL>
Contaminant Name:	NATURAL GAS (METHANE)	**Site Address:**	4540 Lions Pkwy, Chippawa
Contaminant Limit 1:		**Site District Office:**	
Contam Limit Freq 1:		**Site County/District:**	
Contaminant UN No 1:		**Site Postal Code:**	
Contaminant Qty:	0 other - see incident description	**Site Region:**	
Environment Impact:	Confirmed	**Site Municipality:**	Niagara Falls
Nature of Impact:	Air Pollution; Human Health/Safety	**Site Lot:**	
Receiving Medium:		**Site Conc:**	
Receiving Env:		**Northing:**	
Health/Env Conseq:		**Easting:**	
MOE Response:	Not MOE mandate	**Site Geo Ref Accu:**	
Dt MOE Arvl on Scn:		**Site Geo Ref Meth:**	
MOE Reported Dt:	05-OCT-12	**Site Map Datum:**	
Dt Document Closed:	06-OCT-12		
Agency Involved:			
SAC Action Class:	TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill		
Incident Reason:	Operator/Human Error		
Incident Summary:	TSSA: 2 inch plast line strike, safe		

19 | **1 of 1** | **NW/208.3** | **176.4 / -14.19** | **lot 317**
NIAGARA FALL ON | **WWIS**

Well ID:	6604765	**Data Entry Status:**	
Construction Date:		**Data Src:**	
Primary Water Use:		**Date Received:**	4/16/2004
Sec. Water Use:		**Selected Flag:**	Yes
Final Well Status:		**Abandonment Rec:**	
Water Type:		**Contractor:**	7003
Casing Material:		**Form Version:**	3
Audit No:	Z07420	**Owner:**	
Tag:	A007318	**Street Name:**	
Construction Method:		**County:**	NIAGARA (WELLAND)
Elevation (m):		**Municipality:**	NIAGARA FALLS CITY
Elevation Reliability:		**Site Info:**	
Depth to Bedrock:		**Lot:**	317
Well Depth:		**Concession:**	
Overburden/Bedrock:		**Concession Name:**	
Pump Rate:		**Easting NAD83:**	
Static Water Level:		**Northing NAD83:**	
Flowing (Y/N):		**Zone:**	
Flow Rate:		**UTM Reliability:**	
Clear/Cloudy:			

Bore Hole Information

Bore Hole ID:	11108098	**Elevation:**	173.95
DP2BR:		**Elevrc:**	
Spatial Status:		**Zone:**	17
Code OB:	o	**East83:**	655864
Code OB Desc:	Overburden	**Org CS:**	UTM83

Open Hole:
Cluster Kind:
Date Completed: 01-MAR-04
Remarks:
Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

North83: 4768014
UTMRC: 5
UTMRC Desc: margin of error : 100 m - 300 m
Location Method: wwr

Overburden and Bedrock Materials Interval

Formation ID: 932965218
Layer: 1
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2: 11
Other Materials: GRAVEL
Mat3: 84
Other Materials: SILTY
Formation Top Depth: 0
Formation End Depth: 4.5
Formation End Depth UOM: m

Annular Space/Abandonment Sealing Record

Plug ID: 933251955
Layer: 1
Plug From: .5
Plug To: 4
Plug Depth UOM: m

Annular Space/Abandonment Sealing Record

Plug ID: 933251956
Layer: 2
Plug From: 4.5
Plug To: 5.2
Plug Depth UOM: m

Method of Construction & Well Use

Method Construction ID: 966604765
Method Construction Code: B
Method Construction: Other Method
Other Method Construction:

Pipe Information

Pipe ID: 11116025
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID:	930841445
Layer:	2
Material:	5
Open Hole or Material:	PLASTIC
Depth From:	0
Depth To:	4.5
Casing Diameter:	6
Casing Diameter UOM:	cm
Casing Depth UOM:	m

Construction Record - Casing

Casing ID:	930841446
Layer:	3
Material:	5
Open Hole or Material:	PLASTIC
Depth From:	0
Depth To:	4.5
Casing Diameter:	6
Casing Diameter UOM:	cm
Casing Depth UOM:	m

Construction Record - Casing

Casing ID:	930841444
Layer:	1
Material:	5
Open Hole or Material:	PLASTIC
Depth From:	0
Depth To:	4.5
Casing Diameter:	6
Casing Diameter UOM:	cm
Casing Depth UOM:	m

Construction Record - Screen

Screen ID:	933408717
Layer:	1
Slot:	040
Screen Top Depth:	4.5
Screen End Depth:	5.2
Screen Material:	5
Screen Depth UOM:	m
Screen Diameter UOM:	cm
Screen Diameter:	6.2

Hole Diameter

Hole ID:	11116024
Diameter:	12
Depth From:	0
Depth To:	5.2
Hole Depth UOM:	m
Hole Diameter UOM:	cm

20	***1 of 1***	***NE/233.0***	***141.0 / -49.60***	***ON***	***BORE***

Borehole ID:	606789	***Type:***	Borehole
Use:	Geotechnical/Geological Investigation	***Status:***	

Drill Method:	Power auger	**UTM Zone:**	17
Easting:	657295	**Northing:**	4768152
Location Accuracy:		**Orig. Ground Elev m:**	175
Elev. Reliability Note:		**DEM Ground Elev m:**	158
Total Depth m:	9.9	**Primary Name:**	
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	JUN-1971	**Static Water Level:**	.1
Primary Water Use:	Not Used	**Sec. Water Use:**	

--Details--

Stratum ID:	218375961	**Top Depth(m):**	0.0
Bottom Depth(m):	0.1	**Stratum Desc:**	SOIL.
Stratum ID:	218375962	**Top Depth(m):**	0.1
Bottom Depth(m):	4.0	**Stratum Desc:**	CLAY,SILT,GRAVEL. BROWN,LACUSTRINE,FIRM, AGE GLACIAL.
Stratum ID:	218375963	**Top Depth(m):**	4.0
Bottom Depth(m):	5.8	**Stratum Desc:**	CLAY,ORGANIC. GREY,LACUSTRINE,FIRM, AGE GLACIAL, WATER STABLE AT 574.9 FEET.
Stratum ID:	218375964	**Top Depth(m):**	5.8
Bottom Depth(m):	9.9	**Stratum Desc:**	CLAY. BROWN,LACUSTRINE,FIRM, AGE GLACIAL. 017 02800003004001300080019003

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21 ***1 of 1*** ***NNE/242.3*** ***179.4 / -11.22*** ***ON*** ***BORE***

Borehole ID:	606585	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Power auger	**UTM Zone:**	17
Easting:	656565	**Northing:**	4768122
Location Accuracy:		**Orig. Ground Elev m:**	177
Elev. Reliability Note:		**DEM Ground Elev m:**	180
Total Depth m:	11.4	**Primary Name:**	
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	JUN-1971	**Static Water Level:**	.1
Primary Water Use:	Not Used	**Sec. Water Use:**	

--Details--

Stratum ID:	218374856	**Top Depth(m):**	0.0
Bottom Depth(m):	0.2	**Stratum Desc:**	SOIL.
Stratum ID:	218374857	**Top Depth(m):**	0.2
Bottom Depth(m):	7.0	**Stratum Desc:**	CLAY. BROWN,LACUSTRINE,STIFF, AGE GLACIAL, WATER STABLE AT 583.5 FEET.
Stratum ID:	218374858	**Top Depth(m):**	7.0
Bottom Depth(m):	11.4	**Stratum Desc:**	CLAY,SILT,SAND, GRAVEL. GREY,LACUSTRINE,STIFF, AGE GLACIAL. 017 02800006025002300102302 5

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22 ***1 of 1*** ***ENE/242.4*** ***166.8 / -23.83*** ***The Corporation of the City of Niagara Falls Niagara Falls ON*** ***ECA***

Approval No:	6157-5PBHVK	**SWP Area Name:**	Niagara Peninsula

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Approval Date:	2003-07-10	**MOE District:**	Niagara
Status:	Approved	**City:**	Niagara Falls
Record Type:	ECA	**Longitude:**	-79.0639
Link Source:	IDS	**Latitude:**	43.0469
Approval Type:	ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS		
Project Type:	MUNICIPAL AND PRIVATE SEWAGE WORKS		
Address:			
Full Address:			
Full PDF Link:	https://www.accessenvironment.ene.gov.on.ca/instruments/6388-5LLQPG-14.pdf		

23	1 of 2	WSW/250.0	171.7 / -18.91	5789 LYONS CREEK ROAD, NIAGARA FALLS ON	INC

Incident No:	1972306
Incident ID:	
Attribute Category:	FS-Perform L1 Incident Insp
Status Code:	
Incident Location:	5789 LYONS CREEK ROAD, NIAGARA FALLS - VAPOUR RELEASE
Drainage System:	
Sub Surface Contam.:	
Aff. Prop. Use Water:	
Contam. Migrated:	
Contact Natural Env.:	
Near Body of Water:	
Approx. Quant. Rel.:	
Equipment Model:	
Serial No:	
Residential App. Type:	
Commercial App. Type:	
Industrial App. Type:	
Institutional App. Type:	
Venting Type:	
Vent Connector Mater:	
Vent Chimney Mater:	
Pipeline Type:	
Pipeline Involved:	
Pipe Material:	
Depth Ground Cover:	
Regulator Location:	
Regulator Type:	
Operation Pressure:	
Liquid Prop Make:	
Liquid Prop Model:	
Liquid Prop Serial No:	
Equipment Type:	
Cylinder Capacity:	
Cylinder Capac. Units:	
Cylinder Material Type:	
Tank Capacity:	
Fuels Occurence Type:	Vapour Release
Fuel Type Involved:	Natural Gas
Date of Occurence:	2016/11/08 00:00:00
Time of Occurence:	02:20:00
Occur Insp Start Date:	2016/11/08 00:00:00
Any Health Impact:	No
Any Environmental Impact:	No
Was Service Interrupted:	Yes
Was Property Damaged:	No
Operation Type Involved:	Private Dwelling
Enforcement Policy:	NULL
Prc Escalation Required:	NULL
Task No:	6428766
Notes:	
Occurence Narrative:	vehicle stuck gas regulator (farm tap)

Tank Material Type:
Tank Storage Type:
Tank Location Type:
Pump Flow Rate Capac:
Liquid Prop Notes:

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23 | ***2 of 2*** | ***WSW/250.0*** | ***171.7 / -18.91*** | ***5789 Lyons Creek Road Niagara Falls ON*** | ***SPL***

Ref No:	1030-AFHHJ9	***Discharger Report:***	
Site No:	NA	***Material Group:***	
Incident Dt:	2016/11/08	***Client Type:***	
Year:		***Sector Type:***	Unknown / N/A
Incident Cause:		***Source Type:***	
Incident Event:	Leak/Break	***Nearest Watercourse:***	
Contaminant Code:	35	***Site Name:***	Residential<UNOFFICIAL>
Contaminant Name:	NATURAL GAS (METHANE)	***Site Address:***	5789 Lyons Creek Road
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site County/District:***	
Contaminant UN No 1:		***Site Postal Code:***	
Contaminant Qty:	0 other - see incident description	***Site Region:***	
Environment Impact:		***Site Municipality:***	Niagara Falls
Nature of Impact:		***Site Lot:***	
Receiving Medium:		***Site Conc:***	
Receiving Env:	Air	***Northing:***	
Health/Env Conseq:		***Easting:***	
MOE Response:	No	***Site Geo Ref Accu:***	
Dt MOE Arvl on Scn:		***Site Geo Ref Meth:***	
MOE Reported Dt:	2016/11/08	***Site Map Datum:***	
Dt Document Closed:	2016/12/17		
Agency Involved:			
SAC Action Class:	TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill		
Incident Reason:	Operator/Human Error		
Incident Summary:	TSSA FSB, 1" meter set, made safe		

Unplottable Summary

Total: 34 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
CA	QUEENSWAY CHIPPAWA PROPS. INC.	PT.LOTS 19/20&22, CONC. 3, SWM	NIAGARA FALLS ON	
CA	NATIVE HERITAGE REALTY LIMITED	LYON'S CREEK ROAD	NIAGARA FALLS CITY ON	
CA	NATIVE HERITAGE REALTY LIMITED	LYON'S CREEK ROAD	NIAGARA FALLS CITY ON	
CA	1578891 Ontario Ltd.	Stanley Avenue (south of Swayze Drive)	Niagara Falls ON	
CA	The Corporation of the City of Niagara Falls	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2E 6S4
CA	1578891 Ontario Ltd.	Stanley Ave	Niagara Falls ON	
CA	The Corporation of the City of Niagara Falls	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2E 6S4
CA	The Corporation of the City of Niagara Falls	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2E 6S4
CA	The Regional Municipality of Niagara	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2E 6S4
CA	The Regional Municipality of Niagara	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2E 6S4
CA	The Regional Municipality of Niagara	Stanley Avenue	Niagara Falls ON	
CA	REDLAND QUARRIES INC.	STANLEY AVE., RR #2, QUEENSTON	NIAGARA FALLS CITY ON	
CA	QUEENSWAY CHIPPAWA PROPS. INC.	PT.LOTS 20&21/CONC.1 (SWM)	NIAGARA FALLS CITY ON	
CA	R.M. OF NIAGARA	STANLEY AVE.	NIAGARA FALLS CITY ON	
CONV	IAN HERD	Reixinger Road	Niagara Falls ON	
EBR	Half-Way Sand Pit Limited	Part Lot 4 and 17, Geographical Township of Stamford CITY OF NIAGARA FALLS REGIONAL MUNICIPALITY OF NIAGARA	ON	

ECA	The Corporation of the City of Niagara Falls	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2E 6X5
ECA	The Regional Municipality of Niagara	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2V 4T7
ECA	Queensway Chippawa Props. Inc.	Ref Plan 24T-94009	Niagara Falls ON	L4K 4R1
ECA	The Regional Municipality of Niagara	Stanley Avenue	Niagara Falls ON	
ECA	Queensway Chippawa Props. Inc.	Ref Plan 24T-94009	Niagara Falls ON	L4K 4R1
ECA	Queensway Chippawa Props. Inc.		Niagara Falls ON	L4K 4R1
EHS		Stanley Ave	Niagara Falls ON	
GEN	NIAGARA FALLS HYDRO (PCB) 00-000	MULLER (STA. 37)STANLEY AVE. P.O. BOX 120	NIAGARA FALLS ON	L2E 6S9
GEN	STEETLEY QUARRY PRODUCTS INC. 36-226	STANLEY AVENUE NORTH R.R. #1, STANLEY AVENUE NORTH	NIAGARA FALLS ON	L2E 6S4
GEN	STEETLEY QUARRY PRODUCTS INC.	STANLEY AVENUE NORTH R.R. #1, STANLEY AVENUE NORTH	NIAGARA FALLS ON	L2E 6S4
LIMO	Cytec Canada Inc., formely Cyanamid Of Canada Limited St Davids Landfill	Part of Lots 4 & 17 Unnamed Road (Off Stanley Ave) Niagara Falls	ON	
SCT	REDLAND QUARRIES INC.	STANLEY AVE	NIAGARA FALLS ON	L2E
SCT	Lafarge Canada Inc. - Queenston Quarries Division	1 Stanley Ave N	Niagara Falls ON	L2E 6S4
SPL	NIAGARA FALLS HYDRO	ORT RD, N OF MARSHALL RD TRANSFORMER/CAPACITOR	NIAGARA FALLS CITY ON	
SPL	Rankin Construction Inc.; Ontario Power Generation Inc.	100m north of Queenston Bridge; Stanley Ave.	Niagara Falls; Niagara-on-the-Lake ON	NA
SPL	Strabag Inc.	Stanley Ave., just north of Valley Way in Niagara Falls	Niagara Falls ON	
SPL	MARINE LAND	KING WALDORF TRAILER PARK ON STANLEY AVE NEAR MARINELAND/ LYONS CREEK ROAD. AMUSEMENT PARK	NIAGARA FALLS CITY ON	
WWIS		lot 4	ON	

Unplottable Report

Site: ***QUEENSWAY CHIPPAWA PROPS. INC.***
PT.LOTS 19/20&22, CONC. 3, SWM NIAGARA FALLS ON

Database: ***CA***

Certificate #:	3-1149-98-
Application Year:	98
Issue Date:	10/13/1998
Approval Type:	Municipal sewage
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

Site: ***NATIVE HERITAGE REALTY LIMITED***
LYON'S CREEK ROAD NIAGARA FALLS CITY ON

Database: ***CA***

Certificate #:	7-1088-92-
Application Year:	92
Issue Date:	11/9/1992
Approval Type:	Municipal water
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

Site: ***NATIVE HERITAGE REALTY LIMITED***
LYON'S CREEK ROAD NIAGARA FALLS CITY ON

Database: ***CA***

Certificate #:	3-1399-92-
Application Year:	92
Issue Date:	11/9/1992
Approval Type:	Municipal sewage
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

Site: ***1578891 Ontario Ltd.***
Stanley Avenue (south of Swayze Drive) Niagara Falls ON

Database: ***CA***

Certificate #:	2340-6AZSPB

Application Year: 2005
Issue Date: 4/6/2005
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: ***The Corporation of the City of Niagara Falls***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2E 6S4

Database: ***CA***

Certificate #: 1646-6MHLWK
Application Year: 2006
Issue Date: 3/3/2006
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: ***1578891 Ontario Ltd.***
Stanley Ave Niagara Falls ON

Database: ***CA***

Certificate #: 5334-77EN9B
Application Year: 2007
Issue Date: 10/25/2007
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: ***The Corporation of the City of Niagara Falls***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2E 6S4

Database: ***CA***

Certificate #: 8626-68BJ3N
Application Year: 2005
Issue Date: 1/5/2005
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: ***The Corporation of the City of Niagara Falls***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2E 6S4

Database: ***CA***

Certificate #: 2419-5JBRMV
Application Year: 2003
Issue Date: 2/5/2003
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: ***The Regional Municipality of Niagara***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2E 6S4

Database: ***CA***

Certificate #: 3976-5JGSRQ
Application Year: 2003
Issue Date: 2/7/2003
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: ***The Regional Municipality of Niagara***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2E 6S4

Database: ***CA***

Certificate #: 6181-66SQYP
Application Year: 2004
Issue Date: 11/18/2004
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: ***The Regional Municipality of Niagara***
Stanley Avenue Niagara Falls ON

Database: ***CA***

Certificate #: 2125-6EHRAN
Application Year: 2005
Issue Date: 8/5/2005
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: ***REDLAND QUARRIES INC.***
STANLEY AVE., RR #2, QUEENSTON NIAGARA FALLS CITY ON

Database: ***CA***

Certificate #: 8-2013-97-
Application Year: 97
Issue Date: 4/4/1997
Approval Type: Industrial air
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description: PORTABLE SEC. CRUSHING/SCREENING PLANT
Contaminants: Propylene Oxide
Emission Control:

Site: ***QUEENSWAY CHIPPAWA PROPS. INC.***
PT.LOTS 20&21/CONC.1 (SWM) NIAGARA FALLS CITY ON

Database: ***CA***

Certificate #: 3-1450-95-006
Application Year: 95
Issue Date: 11/8/95
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***R.M. OF NIAGARA***
STANLEY AVE. NIAGARA FALLS CITY ON

Database: ***CA***

Certificate #: 3-0156-86-
Application Year: 86
Issue Date: 2/28/1986
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***IAN HERD***
Reixinger Road Niagara Falls ON

Database: ***CONV***

File No: 050104
Crown Brief No:
Location:
Region:

Court Location: ***Ministry District:***
Publication City:
Publication Title:
Act:
Act(s):
First Matter:
Second Matter:
Investigation 1:
Investigation 2:
Penalty Imposed:
Description: On March 20, 2009, ian M. Herd was sentenced ex parte, to six months in jail after being convicted on August 15, 2008 for failing to have oil-contaminated soil transported to an approved waste management facility by an approved waste hauler and failing to submit copies of all manifests and receipts to the ministry. An order was also issued to Mr. Herd and 1499974 Ontario Inc. to clean up the site in St. Catharines. Since Mr. Herd was not in attendance at the time of sentencing, a committal warrant was issued for his arrest. The Court heard that Mr. Herd is the sole director of 1499974 Ontario Inc. In April of 2006, the company purchased a property on Reixinger Road in Niagara Falls that contained an abundance of scrap metal, tires and liquid automobile wastes in barrels. In August of 2006, ministry staff issued an order to the company and Mr. Herd, requiring the removal of the oil-contaminated soil at the property and submission of all receipts related to the clean-up. Mr. Herd failed to comply with the order. Mr. Herd and the company were charged following an investigation by the Ministry of the Environment's Investigations and Enforcement Branch. Mr. Herd had previously been convicted of two other offences under the Environmental Protection Act. In 2004, he was convicted of operating a waste disposal site for tires in Belleville without a Certificate of Approval. A fine of $13,000 was imposed, as well as a court order to clean up the site. He was then charged with failing to comply with the court order and pleaded guilty to the charge in June 2008. In September 2008, he was sentenced to sixty days in jail to be served intermittently, and two years of probation. His fine was suspended and a second court order was issued.
Background:
URL:

--Details--
Publication Date:
Count: 1
Act:
Regulation:
Section:
Act/Regulation/Section:
Date of Offence:
Date of Conviction:
Date Charged: March 20, 2009
Charge Disposition: jail
Fine: 6 months
Synopsis:

Site: ***Half-Way Sand Pit Limited***
Part Lot 4 and 17, Geographical Township of Stamford CITY OF NIAGARA FALLS REGIONAL MUNICIPALITY OF NIAGARA ON

Database: ***EBR***

EBR Registry No.: 010-1983 ***Proposal Date:*** October 29, 2007
Ministry Ref. No.: FSD GUE 30/07 ***Notice Pub Date:*** October 20, 2008
Notice Type: Instrument Decision ***Year:*** 2007
Company Name: Half-Way Sand Pit Limited
Proponent Name:
Proposal Address: 2200 Stanley Avenue, Niagara Falls Ontario, Canada L2E 6S4
Instrument Type: (ARA s. 16 (2)) - Approval of licensee proposed amendment to a site plan
Location Other:
URL:

Location:

Part Lot 4 and 17, Geographical Township of Stamford CITY OF NIAGARA FALLS REGIONAL MUNICIPALITY OF NIAGARA

Site: ***The Corporation of the City of Niagara Falls***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2E 6X5

Database: ***ECA***

Approval No:	1646-6MHLWK	***SWP Area Name:***	
Approval Date:	2006-03-03	***MOE District:***	
Status:	Approved	***City:***	Niagara Falls
Record Type:	ECA	***Longitude:***	
Link Source:	IDS	***Latitude:***	
Approval Type:	ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS		
Project Type:	MUNICIPAL AND PRIVATE SEWAGE WORKS		
Address:	Regional Road 102 (Stanley Avenue)		
Full Address:			
Full PDF Link:	https://www.accessenvironment.ene.gov.on.ca/instruments/8168-6MGMFK-14.pdf		

Site: ***The Regional Municipality of Niagara***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2V 4T7

Database: ***ECA***

Approval No:	6937-9NBKZ2	***SWP Area Name:***	
Approval Date:	2014-08-28	***MOE District:***	
Status:	Approved	***City:***	Niagara Falls
Record Type:	ECA	***Longitude:***	
Link Source:	IDS	***Latitude:***	
Approval Type:	ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS		
Project Type:	MUNICIPAL AND PRIVATE SEWAGE WORKS		
Address:	Regional Road 102 (Stanley Avenue)		
Full Address:			
Full PDF Link:	https://www.accessenvironment.ene.gov.on.ca/instruments/9557-9N5RVZ-14.pdf		

Site: ***Queensway Chippawa Props. Inc.***
Ref Plan 24T-94009 Niagara Falls ON L4K 4R1

Database: ***ECA***

Approval No:	7134-8MZQLP	***SWP Area Name:***	
Approval Date:	2011-11-04	***MOE District:***	
Status:	Approved	***City:***	Niagara Falls
Record Type:	ECA	***Longitude:***	
Link Source:	IDS	***Latitude:***	
Approval Type:	ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS		
Project Type:	MUNICIPAL AND PRIVATE SEWAGE WORKS		
Address:	Ref Plan 24T-94009		
Full Address:			
Full PDF Link:	https://www.accessenvironment.ene.gov.on.ca/instruments/0482-8MRS64-14.pdf		

Site: ***The Regional Municipality of Niagara***
Stanley Avenue Niagara Falls ON

Database: ***ECA***

Approval No:	2125-6EHRAN	***SWP Area Name:***	
Approval Date:	2005-08-05	***MOE District:***	
Status:	Approved	***City:***	Niagara Falls
Record Type:	ECA	***Longitude:***	
Link Source:	IDS	***Latitude:***	
Approval Type:	ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS		
Project Type:	MUNICIPAL AND PRIVATE SEWAGE WORKS		
Address:	Stanley Avenue		
Full Address:			
Full PDF Link:	https://www.accessenvironment.ene.gov.on.ca/instruments/1698-6DBNGY-14.pdf		

Site: ***Queensway Chippawa Props. Inc.***
Ref Plan 24T-94009 Niagara Falls ON L4K 4R1

Database: ***ECA***

Approval No:	9269-9LZJ46	***SWP Area Name:***	
Approval Date:	2014-07-17	***MOE District:***	
Status:	Approved	***City:***	Niagara Falls
Record Type:	ECA	***Longitude:***	
Link Source:	IDS	***Latitude:***	
Approval Type:	ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS		

Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Address: Ref Plan 24T-94009
Full Address:
Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/2823-9LURSR-14.pdf

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Site: ***Queensway Chippawa Props. Inc.***
Niagara Falls ON L4K 4R1

Database: ***ECA***

Approval No: 2524-8QPQVD
Approval Date: 2012-01-27
Status: Approved
Record Type: ECA
Link Source: IDS
SWP Area Name:
MOE District:
City: Niagara Falls
Longitude:
Latitude:
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Address:
Full Address:
Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/4726-8MKSK4-14.pdf

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Site:
Stanley Ave Niagara Falls ON

Database: ***EHS***

Order No: 20101108008
Status: C
Report Type: Custom Report
Report Date: 11/17/2010
Date Received: 11/8/2010 12:09:30 PM
Previous Site Name:
Lot/Building Size:
Additional Info Ordered:
Nearest Intersection: McLeod Road & Stanley Avenue
Municipality: RMON
Client Prov/State: ON
Search Radius (km): 0.25
X: -694444.444444
Y: 43.0741

Site: ***NIAGARA FALLS HYDRO (PCB) 00-000***
MULLER (STA. 37)STANLEY AVE. P.O. BOX 120 NIAGARA FALLS ON L2E 6S9

Database: ***GEN***

Generator No.: ON0393813
Status:
Approval Years: 92,93,94
Contam. Facility:
MHSW Facility:
SIC Code: 0000
SIC Description: *** NOT DEFINED ***
PO Box No.:
Country:
Choice of Contact:
Co Admin:
Phone No. Admin:

Site: ***STEETLEY QUARRY PRODUCTS INC. 36-226***
STANLEY AVENUE NORTH R.R. #1, STANLEY AVENUE NORTH NIAGARA FALLS ON L2E 6S4

Database: ***GEN***

Generator No.: ON0010702
Status:
Approval Years: 92,93,94,95,96,97
Contam. Facility:
MHSW Facility:
SIC Code: 0812
SIC Description: LIMESTONE QUARRIES
PO Box No.:
Country:
Choice of Contact:
Co Admin:
Phone No. Admin:

--Details--
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

Site: ***STEETLEY QUARRY PRODUCTS INC.***
STANLEY AVENUE NORTH R.R. #1, STANLEY AVENUE NORTH NIAGARA FALLS ON L2E 6S4

Database: ***GEN***

Generator No.:	ON0010702	***PO Box No.:***	
Status:		***Country:***	
Approval Years:	98,99,00,01	***Choice of Contact:***	
Contam. Facility:		***Co Admin:***	
MHSW Facility:		***Phone No. Admin:***	
SIC Code:	0812		
SIC Description:	LIMESTONE QUARRIES		

--Details--

Waste Code:	252
Waste Description:	WASTE OILS & LUBRICANTS

Site: ***Cytec Canada Inc., formely Cyanamid Of Canada Limited St Davids Landfill***
Part of Lots 4 & 17 Unnamed Road (Off Stanley Ave) Niagara Falls ON

Database: ***LIMO***

ECA/Instrument No:	A120202	***Air Emis Monitor:***	
Site Name:		***Natural Attenuation:***	
Oper Status 2016:	Closed	***Liners:***	
C of A Issue Date:		***Cover Material:***	
C of A Issued to:		***Leachate Off-Site:***	
Lndfl Gas Mgmt (P):		***Leachate On Site:***	
Lndfl Gas Mgmt (F):		***Req Coll Lndfll Gas:***	
Lndfl Gas Mgmt (E):		***Lndfll Gas Coll:***	
Lndfl Gas Mgmt Sys:		***Total Waste Rec:***	
Landfill Gas Mntr:		***TWR Methodology:***	
Leachate Coll Sys:		***TWR Unit:***	
ERC Est Vol (m3):		***Tot Aprv Cap Unit:***	
ERC Volume Unit:		***Financial Assurance:***	
ERC Dt Last Det:		***Last Report Year:***	
Landfill Type:		***MOE Region:***	
Source File Type:	Historic and Closed Landfills	***MOE District:***	
Fill Rate:		***Site County:***	
Fill Rate Unit:		***Lot:***	
Tot Fill Area (ha):		***Concession:***	
Tot Site Area (ha):		***Latitude:***	
Footprint:		***Longitude:***	
Tot Apprv Cap (m3):		***Easting:***	
Contam Atten Zone:		***Northing:***	
Grndwtr Mntr:		***UTM Zone:***	
Surf Wtr Mntr:		***Data Source:***	
Approved Waste Type:			
Client Site Name:	Cytec Canada Inc., formely Cyanamid Of Canada Limited St Davids Landfill		
ERC Methodology:			
Site Location Details:	Part of Lots 4 & 17 Unnamed Road (Off Stanley Ave)		
	Niagara Falls		
Service Area:			

Site: ***REDLAND QUARRIES INC.***
STANLEY AVE NIAGARA FALLS ON L2E

Database: ***SCT***

Established:	0000
Plant Size (ft²):	10890000
Employment:	6

--Details--

Description:	MINERALS AND EARTHS, GROUND OR OTHERWISE TREATED
SIC/NAICS Code:	3295

Site: ***Lafarge Canada Inc. - Queenston Quarries Division***
1 Stanley Ave N Niagara Falls ON L2E 6S4

Database: ***SCT***

Established: 1996
Plant Size (ft²): 890000
Employment: 6

--Details--
Description: All Other Non-Metallic Mineral Product Manufacturing
SIC/NAICS Code: 327990

Site: ***NIAGARA FALLS HYDRO***
ORT RD, N OF MARSHALL RD TRANSFORMER/CAPACITOR NIAGARA FALLS CITY ON

Database: ***SPL***

Ref No:	224981	***Discharger Report:***	
Site No:		***Material Group:***	
Incident Dt:	5/9/2002	***Client Type:***	
Year:		***Sector Type:***	
Incident Cause:	OTHER CONTAINER LEAK	***Source Type:***	
Incident Event:		***Nearest Watercourse:***	
Contaminant Code:		***Site Name:***	
Contaminant Name:		***Site Address:***	
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site County/District:***	
Contaminant UN No 1:		***Site Postal Code:***	
Contaminant Qty:		***Site Region:***	
Environment Impact:	POSSIBLE	***Site Municipality:***	18101
Nature of Impact:	Multi Media Pollution	***Site Lot:***	
Receiving Medium:	LAND / WATER	***Site Conc:***	
Receiving Env:		***Northing:***	
Health/Env Conseq:		***Easting:***	
MOE Response:		***Site Geo Ref Accu:***	
Dt MOE Arvl on Scn:		***Site Geo Ref Meth:***	
MOE Reported Dt:	5/9/2002	***Site Map Datum:***	
Dt Document Closed:			
Agency Involved:			
SAC Action Class:			

Incident Reason: ERROR
Incident Summary: NIAGARA HYDRO: 50 L TRANSFORMER OIL TO GRND & WET DITCH.CONTAINED,CLEANING.

Site: ***Rankin Construction Inc.; Ontario Power Generation Inc.***
100m north of Queenston Bridge; Stanley Ave. Niagara Falls; Niagara-on-the-Lake ON NA

Database: ***SPL***

Ref No:	7415-A9FU73	***Discharger Report:***	
Site No:	NA; 7676-75LK7W	***Material Group:***	
Incident Dt:	2016/04/28	***Client Type:***	
Year:		***Sector Type:***	Miscellaneous Industrial
Incident Cause:		***Source Type:***	
Incident Event:	Process Upset/Malfunction	***Nearest Watercourse:***	Niagara River
Contaminant Code:	41	***Site Name:***	Niagara Falls OPG project - off trail<UNOFFICIAL>; OPG PGS Reservoir (Stanley Avenue - Harrison System)
Contaminant Name:	BENTONITE SLURRY	***Site Address:***	100m north of Queenston Bridge; Stanley Ave.
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site County/District:***	
Contaminant UN No 1:		***Site Postal Code:***	NA
Contaminant Qty:	100 L	***Site Region:***	
Environment Impact:		***Site Municipality:***	Niagara Falls; Niagara-on-the-Lake
Nature of Impact:		***Site Lot:***	
Receiving Medium:		***Site Conc:***	
Receiving Env:	Land	***Northing:***	4779813; 4779626
Health/Env Conseq:		***Easting:***	658844; 656853
MOE Response:	Yes	***Site Geo Ref Accu:***	Map
Dt MOE Arvl on Scn:	2016/05/03	***Site Geo Ref Meth:***	NA
MOE Reported Dt:	2016/04/28	***Site Map Datum:***	NAD83
Dt Document Closed:			
Agency Involved:			

SAC Action Class:	Land Spills
Incident Reason:	Operator/Human Error
Incident Summary:	Rankin Construction - <100L gelled bentonite to ground, cleaning

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Site: ***Strabag Inc.***
Stanley Ave., just north of Valley Way in Niagara Falls Niagara Falls ON

Database: ***SPL***

Ref No:	7441-94PQ7P	***Discharger Report:***	
Site No:		***Material Group:***	
Incident Dt:	07-FEB-13	***Client Type:***	
Year:		***Sector Type:***	Unknown / N/A
Incident Cause:	Leak/Break	***Source Type:***	
Incident Event:		***Nearest Watercourse:***	
Contaminant Code:	35	***Site Name:***	Hydro Right-of-way, residential and commercial<UNOFFICIAL>
Contaminant Name:	METHANE GAS	***Site Address:***	Stanley Ave., just north of Valley Way in Niagara Falls
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site County/District:***	
Contaminant UN No 1:		***Site Postal Code:***	
Contaminant Qty:	0 other - see incident description	***Site Region:***	
Environment Impact:	Confirmed	***Site Municipality:***	Niagara Falls
Nature of Impact:	Air Pollution	***Site Lot:***	
Receiving Medium:		***Site Conc:***	
Receiving Env:		***Northing:***	
Health/Env Conseq:		***Easting:***	
MOE Response:	No Field Response	***Site Geo Ref Accu:***	
Dt MOE Arvl on Scn:		***Site Geo Ref Meth:***	
MOE Reported Dt:	07-FEB-13	***Site Map Datum:***	
Dt Document Closed:			
Agency Involved:			
SAC Action Class:	Air Spills - Gases and Vapours		
Incident Reason:	Unknown / N/A		
Incident Summary:	Unknown: methane gas release from ground to atm.		

Site: ***MARINE LAND***
KING WALDORF TRAILER PARK ON STANLEY AVE NEAR MARINELAND/ LYONS CREEK ROAD. AMUSEMENT PARK NIAGARA FALLS CITY ON

Database: ***SPL***

Ref No:	171483	***Discharger Report:***	
Site No:		***Material Group:***	
Incident Dt:	8/13/1999	***Client Type:***	
Year:		***Sector Type:***	
Incident Cause:	CONTAINER OVERFLOW	***Source Type:***	
Incident Event:		***Nearest Watercourse:***	
Contaminant Code:		***Site Name:***	
Contaminant Name:		***Site Address:***	
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site County/District:***	
Contaminant UN No 1:		***Site Postal Code:***	
Contaminant Qty:		***Site Region:***	
Environment Impact:	POSSIBLE	***Site Municipality:***	18101
Nature of Impact:	Soil contamination	***Site Lot:***	
Receiving Medium:	LAND	***Site Conc:***	
Receiving Env:		***Northing:***	
Health/Env Conseq:		***Easting:***	
MOE Response:		***Site Geo Ref Accu:***	
Dt MOE Arvl on Scn:		***Site Geo Ref Meth:***	
MOE Reported Dt:	8/14/1999	***Site Map Datum:***	
Dt Document Closed:			
Agency Involved:			
SAC Action Class:			
Incident Reason:	EQUIPMENT FAILURE		
Incident Summary:	MARINE LAND - SEPTIC BED DRAINAGE TO DITCH.		

Site:
lot 4 ON

Database:
WWIS

Well ID:	6603735	***Data Entry Status:***	
Construction Date:		***Data Src:***	1
Primary Water Use:	Municipal	***Date Received:***	4/14/1987
Sec. Water Use:		***Selected Flag:***	Yes
Final Well Status:	Observation Wells	***Abandonment Rec:***	
Water Type:		***Contractor:***	4005
Casing Material:		***Form Version:***	1
Audit No:	10192	***Owner:***	
Tag:		***Street Name:***	
Construction Method:		***County:***	NIAGARA (WELLAND)
Elevation (m):		***Municipality:***	NIAGARA FALLS CITY
Elevation Reliability:		***Site Info:***	
Depth to Bedrock:		***Lot:***	004
Well Depth:		***Concession:***	
Overburden/Bedrock:		***Concession Name:***	CON
Pump Rate:		***Easting NAD83:***	
Static Water Level:		***Northing NAD83:***	
Flowing (Y/N):		***Zone:***	
Flow Rate:		***UTM Reliability:***	
Clear/Cloudy:			

Bore Hole Information

Bore Hole ID:	10463334	***Elevation:***	
DP2BR:		***Elevrc:***	
Spatial Status:		***Zone:***	17
Code OB:	o	***East83:***	
Code OB Desc:	Overburden	***Org CS:***	
Open Hole:		***North83:***	
Cluster Kind:		***UTMRC:***	9
Date Completed:	18-MAR-87	***UTMRC Desc:***	unknown UTM
Remarks:		***Location Method:***	na
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	932599453
Layer:	5
Color:	6
General Color:	BROWN
Mat1:	28
Most Common Material:	SAND
Mat2:	29
Other Materials:	FINE GRAVEL
Mat3:	77
Other Materials:	LOOSE
Formation Top Depth:	151
Formation End Depth:	160
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	932599450
Layer:	2
Color:	3
General Color:	BLUE

Mat1: 05
Most Common Material: CLAY
Mat2: 28
Other Materials: SAND
Mat3: 77
Other Materials: LOOSE
Formation Top Depth: 6
Formation End Depth: 57
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 932599456
Layer: 8
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2: 77
Other Materials: LOOSE
Mat3:
Other Materials:
Formation Top Depth: 176
Formation End Depth: 179
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 932599455
Layer: 7
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2: 08
Other Materials: FINE SAND
Mat3: 77
Other Materials: LOOSE
Formation Top Depth: 173
Formation End Depth: 176
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 932599454
Layer: 6
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2: 77
Other Materials: LOOSE
Mat3:
Other Materials:
Formation Top Depth: 160
Formation End Depth: 173
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 932599449

Layer: 1
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2: 28
Other Materials: SAND
Mat3: 77
Other Materials: LOOSE
Formation Top Depth: 0
Formation End Depth: 6
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 932599451
Layer: 3
Color: 6
General Color: BROWN
Mat1: 08
Most Common Material: FINE SAND
Mat2: 77
Other Materials: LOOSE
Mat3:
Other Materials:
Formation Top Depth: 57
Formation End Depth: 120
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 932599452
Layer: 4
Color: 6
General Color: BROWN
Mat1: 10
Most Common Material: COARSE SAND
Mat2: 77
Other Materials: LOOSE
Mat3:
Other Materials:
Formation Top Depth: 120
Formation End Depth: 151
Formation End Depth UOM: ft

Method of Construction & Well Use

Method Construction ID: 966603735
Method Construction Code: 1
Method Construction: Cable Tool
Other Method Construction:

Pipe Information

Pipe ID: 11011904
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930752760

Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 65
Casing Diameter: 8
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930752761
Layer: 2
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 173
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Screen

Screen ID: 933385589
Layer: 1
Slot: 010
Screen Top Depth: 173
Screen End Depth: 176
Screen Material:
Screen Depth UOM: ft
Screen Diameter UOM: inch
Screen Diameter: 5

Results of Well Yield Testing

Pump Test ID: 996603735
Pump Set At:
Static Level: 128
Final Level After Pumping: 177
Recommended Pump Depth:
Pumping Rate: 1
Flowing Rate:
Recommended Pump Rate:
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 1
Water State After Test: CLEAR
Pumping Test Method: 1
Pumping Duration HR: 8
Pumping Duration MIN: 0
Flowing: N

Draw Down & Recovery

Pump Test Detail ID: 934865534
Test Type: Draw Down
Test Duration: 45
Test Level: 177
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934611344
Test Type: Draw Down
Test Duration: 30

Test Level: 177
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934343986
Test Type: Draw Down
Test Duration: 15
Test Level: 177
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 935129902
Test Type: Draw Down
Test Duration: 60
Test Level: 177
Test Level UOM: ft

Appendix: Database Descriptions

Environmental Risk Information Services (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 Sep 2018

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-Nov 2016

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: 1999-Jul 31, 2018

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

List of commercial underground fuel oil tanks made available by the Fuels Safety Program of the Technical Standards & Safety Authority (TSSA). Ontario Regulation 213/01 of the Technical Standards and Safety Act (2000) requires that all underground tanks be registered with the TSSA. Note: the Fuels Safety Division does not register waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of commercial fuel tanks in the province. The TSSA updates information in its system on an ongoing basis; this listing is a copy of the data captured at one moment in time and is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

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: 1999-Jul 31, 2018

Compressed Natural Gas Stations: Private CNG

Canada has a network of public access compressed natural gas (CNG) refuelling stations. These stations dispense natural gas in compressed form at 3,000 pounds per square inch (psi), the pressure which is allowed within the current Canadian codes and standards. The majority of natural gas refuelling is located at existing retail gasoline that have a separate refuelling island for natural gas. This list of stations is made available by the Canadian Natural Gas Vehicle Alliance.

Government Publication Date: Dec 2012 - Jul 2018

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-Sep 2018

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-Oct 31, 2018

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-Nov 30, 2017

Dry Cleaning Facilities: Federal DRYCLEANERS

List of dry cleaning facilities made available by Environment and Climate Change Canada. Environment and Climate Change Canada's Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations (SOR/2003-79) are intended to reduce releases of tetrachloroethylene to the environment from dry cleaning facilities.

Government Publication Date: Jan 2004-Dec 2016

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: Oct 2011-Oct 31, 2018

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-Oct 31, 2018

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: Oct 2011-Oct 31, 2018

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-Oct 31, 2018

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

List of locations of historical occurrences of emergency events, including 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. EMHE record details are reproduced by ERIS under License with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2017.

Government Publication Date: Dec 31, 2016

List of TSSA Expired Facilities: Provincial EXP

List of facilities and tanks - for which there was once a registration - no longer registered with the Fuels Safety Program of the Technical Standards and Safety Authority (TSSA). Includes private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc. Tanks which have been removed from the ground are included in the expired facilities inventory held by the TSSA. Notes: the Fuels Safety Division did not register private fuel underground/aboveground storage tanks prior to January of 1990, or furnace oil tanks prior to May 1, 2002; nor does the Division register waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of expired tanks/tank facilities in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

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: Jun 2000-Aug 2018

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-Sep 2017

Fuel Storage Tank: Provincial FST

List of registered private and retail fuel storage tanks made available by the Fuels Safety Program of the Technical Standards & Safety Authority (TSSA). Ontario Regulation 213/01 of the Technical Standards and Safety Act (2000) requires that all underground tanks be registered with the TSSA. Notes: the Fuels Safety Division did not register private fuel underground/aboveground storage tanks prior to January of 1990, or furnace oil tanks prior to May 1, 2002; nor does the Division register waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of fuel storage tanks/tank facilities in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

Fuel Storage Tank - Historic: Provincial FSTH

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks. Public records of private fuel storage tanks are only available since the registration became effective in September 1989. This information is now collected by the Technical Standards and Safety Authority.

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-June 30, 2018

Greenhouse Gas Emissions from Large Facilities: Federal GHG

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

Government Publication Date: 2013-Dec 2016

TSSA Historic Incidents: Provincial HINC

List of historic incidences of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen recorded by the TSSA in their previous incident tracking system. The 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, the TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of historical fuel spills and leaks in the province. This listing is a copy of the data captured at one moment in time and is hence limited by the record date provided here.

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

List of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen reported to the Spills Action Centre (SAC) and made available by the Technical Standards and Safety Authority (TSSA). Under the Technical Standards & Safety Act (2000), the 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. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of fuel-related leaks, spills, and incidents in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

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: Sep 30, 2017

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*

Environmental Penalty Annual Report: Provincial MISA PENALTY

This database contains data from Ontario's annual environmental penalty report published by the Ministry of the Environment and Climate Change. These reports provide information on environmental penalties for land or water violations issued to companies in one of the nine industrial sectors covered by the Municipal Industrial Strategy for Abatement (MISA) regulations.

Government Publication Date: Jan 1, 2011 - Dec 31, 2017

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-Jan 2018

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: Dec 31, 2016

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-Apr 2018

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 Pipeline Incidents: Federal NEBI

Locations of pipeline incidents from 2008 to present, made available by the National Energy Board (NEB). Includes incidents reported under the Onshore Pipeline Regulations and the Processing Plant Regulations related to pipelines under federal jurisdiction, does not include incident data related to pipelines under provincial or territorial jurisdiction.

Government Publication Date: 2008-Jun 30, 2018

National Energy Board Wells: Federal NEBW

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

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES): Federal NEES

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

Government Publication Date: 1974-2003*

National PCB Inventory: Federal NPCB

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

Government Publication Date: 1988-2008*

National Pollutant Release Inventory: Federal NPRI

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

Government Publication Date: 1993-May 2017

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-August 31, 2018

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-May 2018

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-Oct 31, 2018

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, 2009-2014

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 the Environment and Climate Change maintains a database of licensed operators and vendors of registered pesticides.

Government Publication Date: 1988-Mar 2018

TSSA Pipeline Incidents: Provincial PINC

List of pipeline incidents (strikes, leaks, spills) made available by the Technical Standards and Safety Authority (TSSA). Under the Technical Standards & Safety Act (2000), the TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors, and equipment or appliances that use fuels. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of pipeline incidents in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

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-Oct 31, 2018

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: 1986-2016

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-Sep 2018

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 31, 2018

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-Jul 2018

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-Dec 31, 2016

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-Aug 2017

TSSA Variances for Abandonment of Underground Storage Tanks: Provincial VAR

List of variances granted for abandoned tanks. Under the Technical Standards and Safety Authority (TSSA) Liquid Fuels Handling Code and Fuel Oil Code, all underground storage tanks must be removed within two years of disuse. If removal of a tank is not feasible, an application may be sought for a variance from this code requirement.
Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of tank variances in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

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: Oct 2011-Oct 31, 2018

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: Dec 31, 2017

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 are included as reference.

Appendix G

Aerial Photographs

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1934
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

8970 Stanley Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1955
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

8970 Stanley Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1960
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

8970 Stanley Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1965
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

8970 Stanley Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1970
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

8970 Stanley Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1975
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

8970 Stanley Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1983
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

8970 Stanley Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1989
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

8970 Stanley Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1994
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

8970 Stanley Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

2000
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

8970 Stanley Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

2006
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

8970 Stanley Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

2010
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

8970 Stanley Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

2015
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

8970 Stanley Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

Appendix H

Phase One Property Photographs

Photo 1:
View of Clubhouse from Stanley Avenue

Date:
January 24, 2019

Direction:
Southeast

Photo 2:
Maintenance shed

Date:
January 24, 2019

Direction:
South

Photo 3:
Maintenance equipment storage warehouse.

Date:
January 24, 2019

Direction:
East

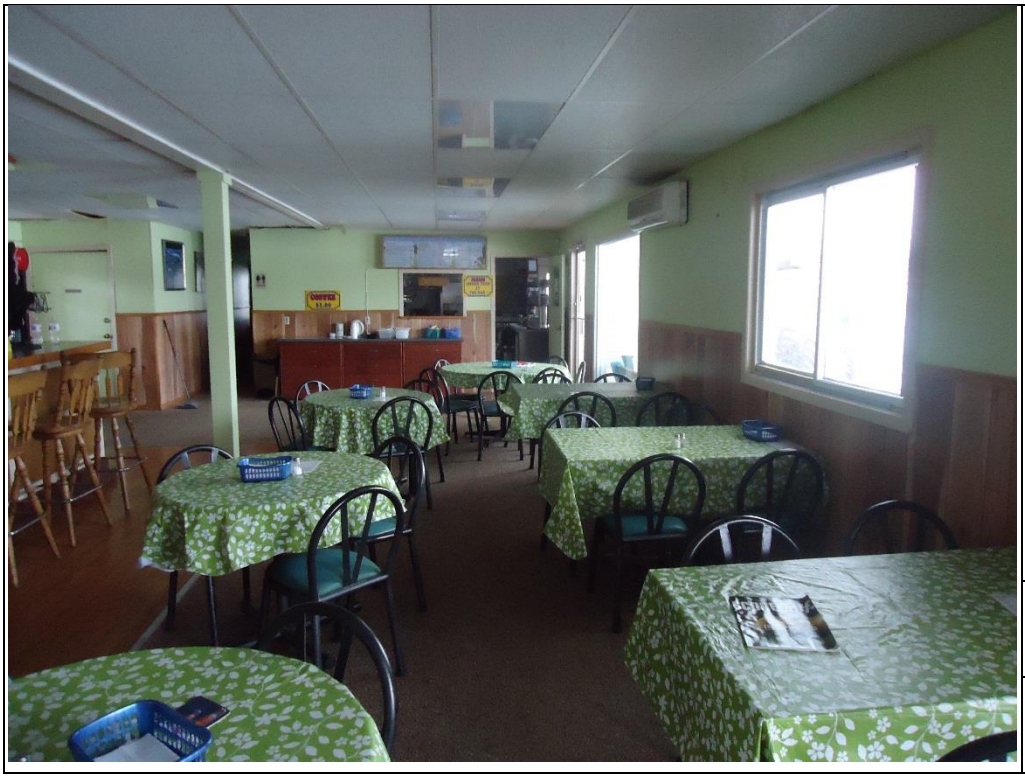


Photo 4:
Clubhouse interior

Date:
January 24, 2019

Direction:
-

Photo 5:
Clubhouse kitchen

Date:
January 24, 2019

Direction:
-

Photo 6:
Old refrigeration units no longer in use

Date:
January 24, 2019

Direction:
-

Photo 7:
Walk-in cooler adjacent to kitchen

Date:
January 24, 2019

Direction:
-

Photo 8:
Electric heat pump

Date:
January 24, 2019

Direction:
-

Photo 9:
Covered storage area for golf carts

Date:
January 24, 2019

Direction:
North

Photo 10:
Pails of hydraulic oil and motor oil as well as garbage bags inside maintenance shed

Date:
January 24, 2019

Direction:
-

Photo 11:
Multiple steal drums, mostly empty, blue drum on he left labelled varsol

Date:
January 24, 2019

Direction:
-

Photo 12:
Entire maintenance shed flood with 2-3 inches of water, tire storage, rusty paint cans, Mirage Stressgard (fungicide), Roundup (liquid herbicide) and jerry cans of gasoline found on shelves.

Date:
January 24, 2019

Direction:
-

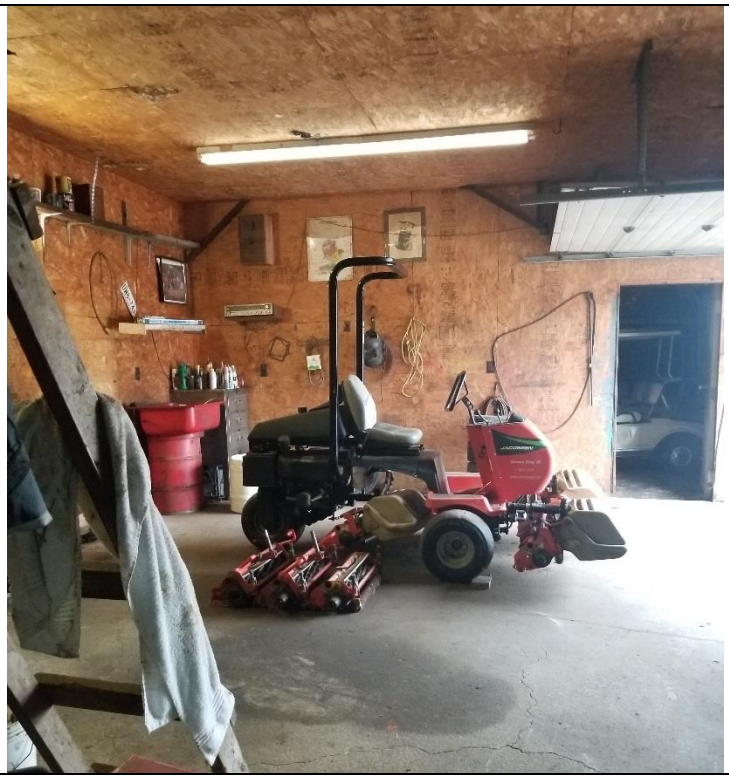
	**Photo 13:** Workshop inside maintenance building. **Date:** February 8, 2019 **Direction:** -

	**Photo 14:** Storage inside maintenance building. **Date:** February 8, 2019 **Direction:** -

Photo 15:
Storage inside maintenance building.

Date:
February 8, 2019

Direction:
-

Photo 16:
Storage area for golf carts within maintenance building.

Date:
February 8, 2019

Direction:
-

Photo 17:
Golf course view from club house, looking south.

Date:
February 8, 2019

Direction:
South

Photo 18:
Southwestern portion of Site suspected to be scattered with small piles of fill.

Date:
February 8, 2019

Direction:
West

Appendix I

Qualifications of the Assessors

QUALIFICATIONS OF THE ASSESSORS

Cameron McCann, M.Sc., P.Geo.

Environmental Scientist

Mr. Cameron McCann is an Environmental Scientist with experience conducting Phase One/I and Two/II Environmental Site Assessments (ESAs) and site remediation for various private, legal, financial and corporate clients. The Phase Two/II ESAs have included drilling, groundwater monitoring and sampling, testpitting, pipeline and underground storage tank (UST) removal programs. Phase Two/II ESAs have included remediation of petroleum, metal and polycyclic aromatic hydrocarbon-impacted soils. Mr. McCann holds an M.Sc. in Earth and Environmental Science from McMaster University in Hamilton, Ontario and has been thoroughly trained to conduct Phase I Environmental Site Assessments (ESAs) in accordance with the Phase One/I ESA standards as defined by Ontario Regulation 153/04 and CAN/CSA Z768-01.

Loren Janzen, B.E.S., EPt

Industrial Hygiene/Environmental Technician

Ms. Loren Janzen is an Industrial Hygiene/Environmental Technician with experience conducting Phase One/I and Two/II Environmental Site Assessments (ESAs) and Designated Substance Surveys for various clients. The Phase Two/II ESAs have included drilling, groundwater monitoring and sampling. She has been thoroughly trained to conduct Phase One/I Environmental Site Assessments (ESAs) in accordance with the Phase One/I ESA standards as defined by Ontario Regulation 153/04 and CAN/CSA Z768-01. Ms. Janzen holds a B.E.S. in Geography and Environmental Management from the University of Waterloo with a specialization in Earth Systems Science. She has a post graduate certificate in Environmental Management and Assessment from Niagara College, in addition, she is certified by Eco Canada as an Environmental Professional in Training.

Braedan Huras, B.Sc., EPt

Environmental Technician

Mr. Braedan Huras is an Environmental Technician with experience conducting Phase One/I and Two/II Environmental Site Assessments (ESAs) and site remediations for various clients. The Phase Two/II ESAs have included drilling, groundwater monitoring and sampling, test pitting, and remediation of metal and inorganics-impacted soils. He has been thoroughly trained to conduct Phase One Environmental Site Assessments (ESAs) in accordance with the Phase One/I ESA standards as defined by Ontario Regulation 153/04 and CAN/CSA Z768-01. Mr. Huras holds an B.Sc. (Hons.) in Integrated Science with a Concentration in Biology from McMaster University. He has a post graduate certificate in Environmental Management and Assessment from Niagara College, in addition, he is certified by Eco Canada as an Environmental Professional in Training.

Patrick Shriner, P.Geo., CPG

Associate, Environmental Geoscientist

Mr. Shriner is an Associate Environmental Geoscientist in Wood's Niagara (St. Catharines/Thorold) office. Patrick has over 28 years of experience on a wide range of environmental and municipal projects including: environmental site assessment (ESA) and remediation; peer review, designated substances surveys, waste management; landfill investigations and monitoring; hydrogeological investigations; risk assessment and risk management. Patrick is responsible for senor review and Quality Assurance of environmental projects and proposals undertaken by the Niagara office as well as senior technical support for the design, implementation and management of ESAs, site remediation projects, Brownfields clean-up and redevelopment. Patrick has participated in over 750 Phase I ESAs undertaken on behalf of a variety of clients including commercial and industrial manufactures, municipal governments, financial institutions and legal firms. Patrick is a recognized Qualified Person (QP) for ESAs under Ontario Regulation 153/04 – Records of Site Condition (RSC) and has filed several RSCs for a variety of properties across Ontario.

Appendix J

Limitations

Limitations

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:

   (a) The Standard Terms and Conditions which form part of Wood's proposal, dated July 11, 2019 and Authorization to Proceed, signed by the Client on July 17, 2019;

   (b) The Scope of Services;

   (c) Time and Budgetary limitations as described in Agreement; and,

   (d) The Limitations stated herein.

2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of the Agreement, or the conclusions presented.

3. The conclusions presented in this report were based, in part, on visual observations of the Phase One Property and attendant structures. Our conclusions cannot and are not extended to include those portions of the Phase One Property or structures which were not reasonably available, in Wood's opinion, for direct observation.

4. The environmental conditions at the Phase One Property were assessed, within the limitations set out above, having due regard for applicable environmental regulations as of the date of the inspection. A review of compliance by past owners or occupants of the Phase One Property with any applicable local, provincial or federal by-laws, orders-in-council, legislative enactments and regulations was not performed.

5. The Phase One Property history research included obtaining information from third parties and employees or agents of the owner. No attempt has been made to verify the accuracy of any information provided, unless specifically noted in our report.

6. Where testing was performed, it was carried out in accordance with the terms of our contract providing for testing. Other substances, or different quantities of substances testing for, may be present on Phase One Property and may be revealed by different of other testing not provided for in our contract.

7. Because of the limitations referred to above, different environmental conditions from those stated in our report may exist. Should such different conditions be encountered, Wood must be notified in order that it may determine if modifications to the conclusions in the report are necessary.

8. The utilization of Wood's services during the implementation of any remedial measures will allow Wood to observe compliance with the conclusions and recommendations contained in the report. Wood's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.

9. This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or in part, or any reliance thereon, or decisions made based on any information of conclusions in the report, is the sole responsibility of such third party. Wood accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.

10. This report is not to be given over to any third party for any purpose whatsoever without the written permission of Wood.

11. Provided that the report is still reliable, and less than 12 months old, Wood will issue a third-party reliance letter to parties Client identifies in writing, upon payment of the then current fee for such letters. All third parties relying on Wood's report, by such reliance agree to be bound by our proposal and Wood's standard reliance letter. Wood's standard reliance letter indicates that in no event shall Wood be liable for any damages, howsoever arising, relating to third-party reliance on Wood's report. No reliance by any party is permitted without such agreement.

PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
OAKLANDS CAMPGROUND
9015 STANLEY AVENUE
NIAGARA FALLS, ONTARIO

Submitted to:

RICCI LAW PROFESSIONAL CORPORATION
4025 Dorchester Road, Suite 331
Niagara Falls, Ontario
L2EE 7K8

Submitted by:

Wood Environment & Infrastructure Solutions,
a Division of Wood Canada Limited
3300 Merrittville Hwy., Unit #5,
Thorold, Ontario
L2V 4Y6

September 29, 2021

SCT196351

Distribution:

- Ricci Law Professional Corporation – 1 electronic copy; and
- Wood Environment & Infrastructure Solutions - 1 electronic copy.

EXECUTIVE SUMMARY

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood) was retained by Ricci Law Professional Corporation (the Client), to conduct a Phase One Environmental Phase One Property Assessment (ESA) of the property located at 9015 Stanley Avenue, in the City of Niagara Falls, Ontario (Phase One Property). The Phase One Property is currently vacant and was previously occupied by commercial use as a campground (the Oaklands Campground). The Phase One Property also includes a small, undeveloped parcel of land on the south side of Lyon's Creek Road. Phase Two ESA reports are being completed for the Phase One Property under separate cover.

The Client currently owns the Phase One Property and intends to redevelop for residential land use. The Client has indicated that, as a condition of potential development, they require a Record of Phase One Property Condition (RSC) be filed for the Phase One Property in accordance with Ontario Regulation 153/04 *Records of Phase One Property Condition, Part XV.1 of the Environmental Protection Act* (EPA), as amended, (*O. Reg. 153/04*, as amended). The objective of the Phase One ESA is to provide an evaluation of known and possible environmental issues at the Phase One Property as required to support an RSC for the Property. It is noted that the Phase One ESA report must not be older than 18 months (as indicated in *O. Reg. 153/04*) at the time of filing of the RSC and therefore, the current report would need to be updated prior to RSC filing.

This Phase One ESA was carried out in accordance with the Terms of Reference as described in Wood's proposal, dated July 11, 2019 and Authorization to Proceed, signed by the Client on July 17, 2019.

Under the supervision of Patrick Shriner, P.Geo., QP, Ms. Tracy Wolowidnek of Wood conducted a reconnaissance on January 24, 2019 to evaluate possible Phase One Property issues, and to assess whether any surrounding land uses may have and/or are currently impacting the environmental condition of the Phase One Property. On the day of the reconnaissance the weather was approximately 0°C with overcast. Ground cover conditions at the time were snow-covered.

According to the records review, the first use of the Phase One Property was between 1960 and 1965 when much of the Site was developed into a campground. It appears to have remained in this use until present day.

Based on the Phase One ESA conducted by Wood, evidence of potential contamination associated with the Phase One Property has been identified with respect to the historic addition of fill material

of unknown quality towards the south of the Phase One Property (PCA #30), the presence of two pad-mounted transformers to the south of the bathroom facility (PCA #55), and the presence of two sub-grade electrical transformers in the campsite area (two APECs, PCA #55). These resulted in APECs on the Phase One Property. A Phase Two ESA would be required at this Phase One Property to address the APECs identified in this Phase One ESA before an RSC could be submitted.

The presence of suspected LCPs, ACMs, and PCBs were identified as potential operational/ management issues by Wood. To address potential operational/management issues, Wood offers the following recommendations:

- Suspected LCPs may be present at the Phase One Property based on criteria outlined in the Canadian Hazardous Products Act – Surface Coating Materials Regulation, as revised in 2010. As enforced by the Ministry of Labour (MOL), all LCP in poor condition must be removed by a qualified lead abatement contractor as outlined in the MOL Guideline titled the *"The Control of Lead Exposures During the Removal of Lead on Construction Projects"*. Although many companies eliminated the use of lead in paint in the early 1990s, the legislative definition of LCP in Canada was revised in 2010 to include a much lower acceptable concentration of lead than was previously regulated. Based on these revised levels, paint manufactured in 1991 could still contain concentrations of lead above the regulated levels as defined in 2010.

- A Designated Substances Survey (DSS) is required if future repair, renovation or demolition activities are planned in areas of the building where suspect ACMs and LCPs are located. A DSS is required to fulfil the Owner's requirements under Section 30 of the *Ontario Occupational Health and Safety Act*, (the OHSA), Revised Statutes of Ontario 1990, (as amended). The building owner must provide the DSS report to all contractors working on the Phase One Property. Subsequently, all contractors must provide the DSS report to their subcontractors.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood) was retained by Ricci Law Professional Corporation (the Client), to conduct a Phase One Environmental Phase One Property Assessment (ESA) of the property located at 9015 Stanley Avenue, in the City of Niagara Falls, Ontario (Phase One Property). A key plan showing the location of the Phase One Property is provided on **Figure 1**. The Phase One Property is currently vacant and was previously occupied by commercial use as a campground (the Oaklands Campground). The Phase One Property also includes a small, undeveloped parcel of land on the south side of Lyon's Creek Road. **Figure 2** illustrates the lot configuration of the Phase One Property. Phase Two ESA reports are being completed for the Phase One Property under separate cover.

The Client currently owns the Phase One Property and intends to redevelop for residential land use. The Client has indicated that, as a condition of potential development, they require a Record of Phase One Property Condition (RSC) be filed for the Phase One Property in accordance with Ontario Regulation 153/04 *Records of Phase One Property Condition, Part XV.1 of the Environmental Protection Act* (EPA), as amended, (*O. Reg. 153/04*, as amended). The objective of the Phase One ESA is to provide an evaluation of known and possible environmental issues at the Phase One Property as required to support an RSC for the Property. It is noted that the Phase One ESA report must not be older than 18 months (as indicated in *O. Reg. 153/04*) at the time of filing of the RSC and therefore, the current report would need to be updated prior to RSC filing.

Legal Description	Part of Lot 3 Con BF Welland River desig. As Parts 1-3, 6-8, 59R7833 except Parts 1 & 3, 59R14106	
PIN	64444-0251 (LT)	
Area	25 hectares (ha) (62 acres) and 0.5 ha (1.2 acres)	
Location	West side of Stanley Avenue, north side of Lyon's Creek Road	
Client	Ricci Law Professional Corporation on behalf of the owner 2610832 Ontario Inc.	4025 Dorchester Road, Suite 331 Niagara Falls, Ontario L2E 7K8 Contact: Ms. Jennifer Ricci 289-932-1640 riccilaw2008@gmail.com

Owner	2610832 Ontario Inc.	8485 Montrose Road, Niagara Falls, Ontario L2H 3L7 Contact: Mr. Frank Ianniello franki@panoramicproperties.ca

A key plan showing the location of the Phase One Property and the Phase One ESA Study area is provided on **Figure 1**. A legal survey plan was not available at the time of completion of this report, however it will be included at the time of filing of the RSC. It will be included in **Appendix A**.

2.0 SCOPE OF INVESTIGATION

This Phase One ESA was conducted in accordance with the Phase One ESA standard as defined by *O. Reg. 153/04*, as amended. This report also complies with the 2003 CSA Phase One ESA Standards defined by CAN/CSA Z768-01 Phase I Environmental Phase One Property Assessment published November 2001 (reaffirmed 2016). The date the last work on the records review, interviews and reconnaissance components were completed was March 26, 2020.

This Phase One ESA was carried out in accordance with the Terms of Reference as described in Wood's proposal, dated July 11, 2019 and Authorization to Proceed, signed by the Client on July 17, 2019. The scope of work for the Phase One ESA consisted of the following tasks:

- Reviewing the historical occupancy of the Phase One Property, using available archived and relevant (in Wood's opinion) municipal and business directories, fire insurance plans (FIPs), other historical mapping and aerial photographs and documenting the history of the Phase One Property to its development or 1875, whichever is earlier;
- Obtaining licensed copies of FIPs, Underwriters' reports and plans and Ontario Base Map for the Phase One Property;
- Obtaining a chain of title for the Phase One Property (back to Crown or 1875);
- Reviewing the current use of the Phase One Property and any land use practices that may have impacted its environmental condition;
- Reviewing the current use of the surrounding properties and any land use practices that may have impacted the environmental condition of the Phase One Property;
- Mapping the Phase One Property and the surrounding properties within a minimum of 250 metres (m) of the Phase One Property;
- Conducting a 'walk-through' visual assessment (i.e., Phase One Property reconnaissance) of the Phase One Property and building facilities, to identify the presence of actual and / or potential environmental contaminants or concerns of significance;
- Conducting interviews with multiple Phase One Property representatives to obtain knowledge of all historical activities on enhanced investigation properties as practicable, as well as to provide Wood staff with unrestricted access to all areas of the Phase One Property and buildings (as required by *O. Reg. 153/04*);

- Contacting municipal and provincial agencies to determine the existence of records of environmental regulatory non-compliance, if any, and reviewing such records where available. Certain provincial searches are only conducted from the period of 1987 to present. Should Wood feel it appropriate to search prior to 1987, additional fees will be required. It should be noted that responses from these agencies may not be received prior to preparation of the report. The Client would be notified when a response is received and any additional costs to obtain these records;

- Obtaining a complete Environmental Risk Information Services Ltd. (ERIS) report for the Phase One Property and a 250 m surrounding perimeter. ERIS is a national service that provides Phase One Property-specific environmental and property use information from detailed government and private sector records;

- Developing a Conceptual Phase One Property Model (CSM) by a Qualified Person (QP) as defined by Part XV.1 of the Environmental Protection Act. The CSM will combine regional geologic and hydrologic data with data available for the Phase One Property to produce a comprehensive view of the environmental conditions at the Phase One Property; and

- The results of the Phase One ESA will be included in a draft report issued to the Client and final bound copies could be issued upon approval from the Client. The reports would include Phase One Property plans, aerial photographs, Phase One Property photographs, etc.

In completing the scope of work, Wood did not conduct any intrusive investigations, including sampling, analyses or monitoring. This Phase One ESA report is not to be construed as a regulatory compliance audit or review. Although this report discusses designated substances and hazardous materials including asbestos-containing materials (ACMs), lead, mercury, ozone depleting substances (ODS), polychlorinated biphenyls (PCBs) and mould, the review was performed at a cursory level and for the Phase One Property. No sampling or analytical testing for designated substances and/or hazardous materials was performed. This report should not be construed as a designated substance or hazardous materials survey or assessment. Recommendations made with respect to these items are provided as guidance only.

All activities of the Phase One ESA were completed under the supervision of a QP as defined by *O. Reg. 153/04*, as amended. In addition, the QP prepared the CSM, in accordance with Part VII of *O. Reg. 153/04*, as amended.

A reference document, outlining the definitions and legislation references for the Phase One ESA, is provided in **Appendix B**.

3.0 RECORDS REVIEW

3.1 General

The date the last work on all the records review, interviews and Phase One Property reconnaissance components of the Phase One ESA was March 26, 2020.

3.1.1 Phase One Study Area Determination

The default 250 m buffer from the Phase One Property boundaries was selected for the Phase One Study Area (**Figure 1**).

Lands inferred upgradient of the Phase One Property, beyond 250 m, were primarily vacant, agricultural, and residential and it is not anticipated that environmental impacts affecting the Phase One Property would result from these land uses.

3.1.2 First Developed Use Determination

According to the records review, the first use of the Phase One Property was between 1960 and 1965 when much of the Site was developed into a campground. It appears to have remained in this use until present day.

3.1.3 Fire Insurance Plans, Property Underwriters Reports and Plans

The City was listed in the *Catalogue of Canadian Fire Insurance Plans 1875-1975*. Wood contacted Opta to conduct a search of their Historical Environmental Services Enviroscan™ (HESE) to obtain any available FIPs, Property Underwriters Reports, and other plans.

According to Opta, FIPs were not available for the Phase One Study Area. FIPs for The City were available from the Brock University Special Collections Library. However, the location of the Phase One Property and surrounding properties was not covered by the FIPs. Additionally, no property underwriters reports and plans were available for the Phase One Property.

3.1.4 Chain of Title

A chain of title was prepared by Mr. Dominic Bertucci of Domson's Title Search Inc. and provided to Wood to document the ownership of the Phase One Property from its conversion from Crown to the present owner.

Registration Date	Document Type	Party From	Party To
March 30, 1811	Patent (100 acres)	Crown	John Burch
May 10, 1811	Deed	John Burch	Lanty Shannon
January 14, 1824	Deed	Thadeus Davis, exor. Of the estate of Lanty Shannon	William Terry
July 16, 1830	Deed	William Terry	John Darling
October 22, 1831	Deed	John Darling	David Davis
February 6, 1866	Deed (37 acres)	David Davis	Thomas Davis
February 15, 1866	Deed (53 acres)	David Davis	James Crane
June 13, 1872	Deed	James Crane	Andrew Simpson
May 22, 1873	Deed	Thomas Davis	James McKeown
September 29, 1903	Deed	James McKeown	Benjamin Hewson
October 23, 1911	Deed (53 acres)	Benjamin Hewson	Charles Kiemele
October 18, 1921	Deed (37 acres)	Andrew Simpson	Charles Kiemele
May 20, 1932	Deed	Charles Kiemele	George Glasgow
August 20, 1934	Deed	Charles Kiemele	George Glasgow
September 19, 1958	Deed	George Glasgow	Andrew Harris & Shirley Harris
October 23, 1963	Deed	George Glasgow	Samuel De Lorenzo
July 21, 1966	Deed	Samuel De Lorenzo	Border Marine Distributors Ltd.
May 14, 1971	Deed	Andrew Harris & Shirley Harris	Welland Securities (1964) Ltd.
October 15, 1971	Deed	Border Marine Distributors Ltd.	Welland Securities (1964) Ltd.
September 1, 1972	Deed	George Glasgow	Welland Securities (1964) Ltd.
November 5, 1991	Deed	Welland Securities (1964) Ltd.	Marineland of Canada Inc.
December 12, 2002	Deed	Marineland of Canada Inc.	Marineland of Canada Inc.
December 29, 2017	Deed (Present Owner)	Marineland of Canada Inc.	2610832 Ontario Inc.

A copy of the Chain of Title documents is available in **Appendix C.**

3.1.5 City Directories

Wood reviewed city directories for the Site and surrounding areas for various years between 1928 and 2014, available at Brock.

Phase One Property:

According to the city directories reviewed, the Phase One Property has been occupied by a campground and trailer park of varying names since at least 1985. Before 1985, the addresses were not listed in the city directories.

From	To	Occupant
1995	2014	King Waldorf's Tent & Trailer Park
1985	1990	Oaklands Tent & Trailer Park Ltd

Surrounding Properties

According to the city directories reviewed, the following occupants were listed at the properties surrounding the Site that may have impacted its environmental condition:

From	To	Occupant
8970 Stanley Avenue, formerly 4527 Chippawa Parkway (adjacent to the east of the Site, across Stanley Avenue)		
1970	2014	Oaklands Golf & Country Club - renamed to Oaklands Golf Course
5795 Don Murie Street (approximately 160 m N, across the Welland River)		
2014		Edscha of Canada Augustine Group Innovative Civil Constructors Inc Viking Rigging Solutions
1990	2010	Edscha of Canada
9565 Stanley Avenue (approximately 30 m S, across Lyon's Creek Road and Lyon's Creek)		
2014		Bingley Windows Siding & Roofing
2010		Residential

3.1.6 Environmental Reports

No previous environmental reports were available for the Phase One Property.

3.2 Environmental Source Information

3.2.1 Local Municipal Agencies

Wood contacted the RMON and the City to inquire if they had records of environmental concerns with the Phase One Property.

A response, dated January 24, 2019 was received from the City. The response included a map of Potential Pollution Sources located within 500 m of the Phase One Property. No pollution sources were identified on the Site or immediately surrounding the Phase One Property. The only identified pollution sources were located on the north side of the Welland River, and included current and past manufacturing and air emissions sources. Lastly, two landfills were identified: a small landfill site on the south side of Lyons Creek on Ort Road (the Ord Road Landfill; approximately 950 m southeast), and the Marineland Park Landfill (approximately 700 m northeast). Due to the separation distances and the presence of the Welland River and Lyon's Creek between the Phase One Property and the industrial uses, none of the noted land uses are expected to represent a significant concern with respect to the environmental condition of the Phase One Property.

A response, dated January 21, 2019, was received from the RMON's Public Works Water & Wastewater Services branch. The Environmental Record Search indicated they did not find any documents in their *Niagara Falls Misc. Files* (1991-present), *Action Request/Violation Notices* (1985-present) or *Incident Reports* (2001-present) related to environmental concerns, orders, spills, inspections or permits pertaining to the Phase One Property.

A copy of the RMON and City correspondence are provided in **Appendix D**.

3.2.2 Technical Standards and Safety Authority

Fuel storage at industrial facilities in Ontario is regulated by the *Technical Standards and Safety Act 2000* (*TSS Act*). The *TSS Act* has consolidated the seven acts that the TSSA previously administered, including the *Gasoline Handling Act* and the *Energy Act*. Under the *TSS Act*, the *Liquid Fuel Handling Regulation*, *Liquid Fuel Handling Code* and the *Environmental Management Protocol* (also known as GA1/99) have replaced the *Gasoline Handling Act*, The *Gasoline Handling*

Code and *GH13* (1993 Environmental Cleanup Guideline). The *TSS Act* applies to all storage tank systems utilized for the storage and handling of gasoline, diesel and fuel oil. According to discussions with a representative of the TSSA - Fuels Safety Division, USTs and aboveground storage tanks (ASTs) installed under the *Liquid Fuel Handling Regulation*, *Liquid Fuel Handling Code* require registration with the TSSA. Fuel oil tanks utilized in residential buildings will also require registration with the TSSA.

The TSSA was contacted by email and requested to supply any available information concerning the presence of petroleum storage tanks, fuel spill records, accidents, or fuel-related incidents, which may be registered on the subject, or surrounding properties. The TSSA responded by email on January 4, 2019 and indicated that they have no record of fuel storage tanks at the Site or surrounding properties.

A copy of the TSSA response is provided in **Appendix D**.

3.2.3 Provincial Government Sources

3.2.3.1 Ministry of the Environment, Conservation and Parks

Through the Freedom of Information (FOI) and Protection of Privacy Office the Ministry of the Environment, Conservation and Parks (MECP) was requested to identify any outstanding actions, violations, control orders, summons, complaints, spills hazardous waste documents, or certificates of approval for the Phase One Property. The request to the FOI department involved an electronic search of their records since 1985. Information filed with the MECP prior to 1985 is not included in the FOI records search. Retrieval of such information requires a manual document search by the MECP initiated by a specific request and additional fees.

A response was received from the MECP dated February 5, 2019. After a thorough search of their files, the MECP notified Wood that they do have records of complaints for the property and the information would be forwarded to Wood. This information was not received and Wood will follow up with the MECP prior to the RSC filing.

A copy of the MECP correspondence is included in **Appendix D.**

3.2.3.2 Waste Disposal Phase One Property Inventory

Wood reviewed the document entitled "*Waste Disposal Phase One Property Inventory*", prepared by the Waste Management Branch of the Ministry of the Environment (MOE) (dated June 1991).

No active or closed waste disposal sites were listed as being present within one kilometre (km) of the Phase One Property.

3.2.3.3 Inventory of Coal Gasification Plant Waste Sites in Ontario

Wood reviewed the document entitled *"Inventory of Coal Gasification Plant Waste Sites in Ontario"*, prepared for the MOE (dated April 1987) and *"Inventory of Industrial Sites Producing or Using Coal Tar and Related Sites in Ontario"*, prepared for the MOE (dated November 1988). No coal tar or waste Sites were listed within the Phase One Study Area.

3.2.3.4 Brownfields Environmental Phase One Property Registry

The MECP online Brownfields Environmental Phase One Property Registry was accessed on January 15, 2020 to determine if any RSCs have been filed under Part XV.1 under the Environmental Protection Act (EPA) for the Phase One Property or any of the surrounding properties. A search of the registry indicated that no RSCs have been filed for the Phase One Property and surrounding properties.

3.2.3.5 Ontario Oil, Gas and Salt Resources

The Ontario Oil, Gas and Salt Resources Library (*http://www.ogsrlibrary.com/maps/index.php*), maintained by the Oil, Gas and Salt Resources Corporation (OGSRC) was accessed on January 15, 2020. No test wells, disposal wells, oil wells, or gas wells were found to have been in the Phase One Study Area.

3.2.4 Environmental Risk Information Services Ltd. (ERIS)

A standard ERIS database report was obtained for the Phase One Property and Phase One Study Area. ERIS is a national service that provides Phase One Property specific environmental and property-use information. An ERIS report contains detailed government and private sector records concerning possible environmental liabilities associated with a property and the surrounding neighbourhoods.

For the purposes of this report, the ERIS Project number is 20180627025. A copy of the ERIS database report can be found in **Appendix E**. The ERIS report identified information potentially relevant to the environmental condition of the Phase One Property and are summarized by location as follows:

Phase One Property (9015 Stanley Avenue)

- A record for an ECA of Municipal and Private Sewage Works was identified.

The Corporation of the City of Niagara Falls (approx. 55 m south of the Site)

- This property has records of an ECA for Municipal Drinking Water Systems.

5789 Lyon's Creek Road (approx. 250 m west of the Site)

- This property has a record for an incident of natural gas vapour release. The occurrence narrative reads," vehicle stuck gas regulator (farm tap)" and occurred on Nov 11, 2016.

Additionally, the Phase One Property was not listed as a registered generator of solid hazardous waste. Based on the review of the above-noted information sources, the information found in the ERIS report likely does not represent an environmental concern to the Phase One Property. The complete findings of the ERIS search may be referenced **Appendix E**.

3.3 Physical Setting Sources

3.3.1 Aerial Photographs

Aerial photographs of the Phase One Study Area were obtained from the Brock Map Library for the years 1955, 1960, 1965, 1970, 1975, 1980, 1983, 1989, and 1994 and from Niagara Navigator for the years 1934, 2000, 2006, 2010, and 2015. The earliest available aerial for the Phase One Property was for the year 1934 and was reviewed. An interval of approximately 10 years between each aerial, subject to aerial availability and scale, was deemed sufficient to characterise changes at the Phase One Property during its history. During periods of rapid change at the Phase One Property and surrounding properties, an attempt was made to reduce the interval between aerials to gain a better understanding of the Phase One Property and the surrounding area.

The following significant information concerning the Phase One Property and its surrounding properties was inferred from the aerial photographs reviewed:

Date	Phase One Property	Surrounding Properties
1934	The Phase One Property appeared to be in agricultural use. A farmstead was present in the southwest portion of the Phase One Property.	Immediately north of the Phase One Property was the Welland River. North of the Welland River was agricultural land use. All other surrounding properties were also agricultural lands.
1955	No significant changes observed.	No significant changes observed.
1960	The Phase One Property appeared to still be used as an agricultural field, but a large oval-shaped road had been built in the north portion of the Phase One Property.	No significant changes observed.
1965	The north portion of the Phase One Property appeared to have been converted into a campground. The farmstead remained in the southwestern portion of the Phase One Property.	No significant changes observed.
1970	No significant changes observed.	No significant changes observed.
1975	No significant changes observed.	North of the Welland River, some of the land had been developed for industrial/commercial land use. To the south of the Phase One Property, some of the lands had been developed for residential land use. To the east of the Phase One Property, a golf course had been developed.
1980	The Phase One Property had been expanded to include more campground areas.	More industrial/commercial land use had been developed to the north of the Welland River.
1983	No significant changes observed.	No significant changes observed.
1989	No significant changes observed.	The lands to the northeast of the Phase One Property, north of the Welland River had been developed by Marineland as an amusement park.
1994	No significant changes observed.	No significant changes observed.
2000	Infilling appeared to be ongoing in the south-central portion of the Phase One Property (north of the farmstead).	The agricultural land to the west of the Site had been abandoned and a forest had started growing.
2006	No significant changes observed.	No significant changes observed.
2010	All buildings associated with the former farmstead were no longer present.	No significant changes observed.
2015	No significant changes observed.	No significant changes observed.

Copies of the aerial photographs are presented in **Appendix F**.

3.3.2 Topography, Hydrology, Geology

The elevation at the Phase One Property ranges from 171 metres above sea level (mASL) to 180 mASL. The UTM coordinates at the approximate centre of the Site are 655955 east and 4767400 north (NAD 83 UTM 17N). The topography across the central (developed campground) portion of the Site is relatively flat, however, slopes steeply at the north end towards the Welland River. The Welland River is located adjacent to the north of the Phase One Property.

According to the **2010 Surficial Geology of Southern Ontario Miscellaneous Release – Data 128 REV**, published by the **Ontario Geological Survey (OGS)**, the geology near the Phase One Property is interpreted to consist of fine textured glaciolacustrine deposits consisting of silt and clay with minor sand, and described as massive to well laminated.

The **2007 Paleozoic Geology of southern Ontario Miscellaneous Release – Data 219**, published by the **Armstrong, D.K. and Dodge, J.E.P. of the OGS**, describes the bedrock in the area to consist of dolostone, shale and evaporites of the Salina Formation. Bedrock is anticipated to be encountered at depths in the range of 26 to 44 meters below ground surface (mbgs) (**Bedrock Topography of the Niagara and Niagara-on-the-Lake Area, Southern Ontario**, Ontario Geological Survey Preliminary Map P.2400, 1981).

The regional ground water flow direction, based on topographic features and knowledge gained from other sites in the area, is expected to be generally to the north towards the Welland River. Locally, however, the shallow ground water flow may be influenced by underground utility trenches, conduits, and structures, variations in soil type, and minor fluctuations in topography.

3.3.3 Water Bodies and Areas of Natural Significance

The Welland River is located adjacent to the north of the Phase One Property. Lyon's Creek is also located approximately 35 m to 80 m to the south of the Phase One Property across Lyon's Creek Road. Therefore, the Phase One Property does include land that is within 30 m of a "water body".

Based on a review of the Ministry of Natural Resource's Natural Heritage Areas map, there is a Provincially Significant Wetland located on the southwestern edge of the Phase One Property. Therefore, the Phase One Property is considered an Environmentally Sensitive Area.

3.3.4 Well Records

No water wells were observed at the Phase One Property by Wood during the reconnaissance. A search of the MECP Well Records Database conducted by Wood on January 3, 2019 showed no water well records for domestic (potable) ground water wells on the Phase One Property, however, one domestic (potable) water well was identified within the study area, approximately 130 m to the south. An observation or monitoring well was also identified approximately 125 m north of the Phase One Property. It is possible that a well was historically present associated with the farmstead at the south end of the Phase One Property.

No additional water wells, test wells, disposal wells, oil, gas or salt wells were observed at the Phase One Property by Wood during the reconnaissance.

3.4 Phase One Property Operating Records

The Phase One Property is not currently, nor has it historically been used in whole, or in part, for an industrial use. No Phase One Property operating records were available.

3.5 Summary of Records Review

Phase One Property

According to the records review, the first use of the Phase One Property was between 1960 and 1965 when much of the Site was developed into a campground. It appears to have remained in this use until present day.

Based on the records review, one potentially contaminating activity (PCA) was identified in relation to activities at the Phase One Property that resulted in areas of potential environmental concern (APECs) as follows:

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity*	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC-1: Potentially contaminated fill materials	Southwestern corner of the Phase One Property	#30 – importation of fill material of unknown quality	On-Site (Southwestern corner of the Phase One Property)	Metals/PHCs/ BTEX	Soil

PHCs – Petroleum Hydrocarbons, BTEX – Benzene, Toluene, Ethylbenzene, and Xylene

Surrounding Properties

Wood identified three PCAs that are not believed to have resulted in APECs at the Phase One Property:

- Identified in the review of the city directories, aerial photographs, and City correspondence, approximately 160 m north of the Phase One Property across the Welland River was a current and former automotive parts manufacturer (Edscha of Canada and H & L Tool and Die; PCA #57), plastics manufacturer (Lomak Plastics Manufacturing Inc; PCA #43), and tableware and cutlery manufacturer (Oneida Canada Ltd; PCA #32). However, due to separation distance and the presence of the Welland River between the industrial operations and the Phase One Property, these PCAs do not result in APECs at the Phase One Property.

4.0 INTERVIEWS

Contacts were made as required to evaluate the existing/historical Phase One Property operations and obtain additional information, as follows:

Name or Affiliation	Position	Interview Details (Date, Place, Method, Reason for Interview)	Validity of Information from Interview
Mr. Ralph Terrio	Property Manager	The 'Record of Interview' form was completed with Mr. Terrio on April 2, 2020 via email correspondence. Mr. Terrio is knowledgeable about operations at Phase One Property from working at the property for two years prior to the interview.	Information provided by Mr. Terrio is included throughout the report as required.

Pertinent information obtained during the interviews are noted in the applicable portions of Section 5. Records of the interviews are provided in **Appendix D**.

5.0 SITE RECONNAISSANCE

5.1 General Requirements

Under the supervision of Patrick Shriner, P.Geo., QP, Ms. Tracy Wolowidnek of Wood conducted a reconnaissance on January 24, 2019 to evaluate possible Phase One Property issues, and to assess whether any surrounding land uses may have and/or are currently impacting the environmental condition of the Phase One Property. On the day of the reconnaissance the weather was approximately 0°C with overcast. Ground cover conditions at the time were snow-covered.

5.2 Specific Observations at Phase One Property

5.2.1 Phase One Property Description and Buildings

At the time of the reconnaissance, five buildings were present on the Phase One Property. An office/gatehouse building, a shed (for storage of lawn maintenance equipment, etc.), a washroom/ shower/laundry facilities building, a pool shed, and a pump house. The southern portion of the Site is undeveloped, with the exception of the area cleared for the on-Site sewage disposal system, which includes a septic tank and leaching bed, and is located in the southern portion of 9015 Stanley Avenue. Ground cover conditions at the time were snow covered. The Phase One Property was partially fenced along the east edge of the property with a gate to provide vehicle access to the campground.

The electrical service at the Phase One Property is supplied by Niagara Peninsula Energy Inc. (NPE) via two pad-mounted transformers located adjacent to the south of the washroom building. Two more sub-grade transformers were present in concrete vaults near campsites. The property is also provided with natural gas service, which is used to fire the boiler used to heat water for the washrooms/shower/laundry building. The Phase One Property is connected to the municipal water supply and sanitary wastewater is discharged to an on-Site sewage works. It is understood the on-Site sewage works were constructed after May 1972. They consist of a gravity sewer collection system serving 28 serviced trailer sites, the central washroom with showers and laundry, and a portable washroom (located near the office). The washroom and trailer site sewers discharge to a 2.4 metre (m) diameter, 2,000 litre (L) sewage pump station. Sewage is pumped to a gravity sewer that originates at the pump station and flows by gravity to a 40,000 L septic tank located about 500 m south of the pump station. Septic tank effluent flows to a leaching bed with

a reported 3,600 m of distribution pipe. A review on the operation of this system is beyond the scope of work provided in this Phase One ESA.

Selected photographs of the Phase One Study Area are presented in **Appendix G**.

5.2.2 Utility Easements

Wood is not aware of any utility easements on the Phase One Property.

5.2.3 Drains, Pits and Sumps

No drains, pits, and sumps were present at the Phase One Property.

5.2.4 Tanks

The Phase One Property representative advised Wood that there are currently no AST or USTs at the Phase One Property aside from those included in the previously noted septic tank system. Wood did not observe any ASTs or USTs during the reconnaissance and did not observe fill or vent pipes suggesting the presence of USTs. As previously noted, the TSSA did not have any records of ASTs or USTs registered to the Phase One Property.

5.2.5 Site Production and Manufacturing

No manufacturing activities are currently taking place nor have historically occurred on the Phase One Property.

5.2.6 Chemical Storage/Handling and Floor Condition

Small quantities (i.e., 1 to 5 L) of janitorial cleaning and maintenance supplies as well as small quantities of gasoline (stored in jerry cans in the shed and used for lawn maintenance equipment), were observed during the site reconnaissance. The storage areas for these supplies generally appeared to be tidy and free of significant staining. The floor in the storage areas was observed to be generally in good physical condition (i.e., no cracking or pitting). No open floor drains were observed to be present near the storage areas. No chemicals or hazardous materials were observed indoors or outdoors at the time of the reconnaissance. No significant environmental issues regarding chemical storage at the Phase One Property were identified.

5.2.7 Areas of Stained Soil or Pavement, or Stressed Vegetation

Wood conducted a walkover of the Phase One Property and did not observe any areas of ground staining or stressed vegetation (under winter conditions).

5.2.8 Spills

Wood is not aware of any chemical spills having occurred at the Site. No evidence of chemical spills, accidental releases or significant staining was observed that would indicate the occurrence of major environmental events (such as spills) that may have significantly affected the quality of the subsurface.

5.2.9 Fill / Debris

In general, the Site appeared to be well maintained. Wood did not observe significant amounts of debris, staining, outdoor chemical storage or uncontrolled waste storage on-Site at the time of the reconnaissance.

The Site is generally graded even with the surrounding properties and significant amounts of fill material is inferred not to be present at the Site. However, an area of disturbed soil/potential infilling was noted in the 2000 aerial photograph. The fill appeared to be placed at grade (not spread out). The ground surface in this area was obscured by snow at the time of the Site visit.

5.2.10 Methane

Methane is a colourless and odourless gas commonly formed by the decomposition of organic material and is a large component of natural gas associated with waste disposal Sites. Natural sources of methane include marshes, swamps, bogs, fens or coal and/or peat deposits. Potential methane risks include explosion hazards where methane enters closed spaces and concentrations exceed the lower explosive limit.

Based on observations made at the time of the reconnaissance, no significant amounts of potentially methane-generating fill materials were noted to have been placed on the Phase One Property and no putrescible materials were observed.

The environmental review completed by the City of Niagara Falls did note two landfills on surrounding properties. The Marineland Park Landfill is located approximately 400 m north of the Phase One Property. Additionally, the Ort Road Landfill was located approximately 110 m southeast of the Phase One Property. Due to the separation distances, and the presence of the

Welland River and Lyon's Creek between the Phase One Property and these landfills, methane gas is not inferred to be an environmental issue at the Phase One Property.

5.2.11 Radon

Radon is a naturally occurring gas produced by Uranium-238 decay and tends to concentrate in formations of granite, sandstone, coal, phosphate and uranium deposits. It percolates through soil, where it may accumulate in basements of buildings. As the existence of radon is dependent upon geological factors, it is more of a regional concern than Phase One Property-specific.

The location of the Phase One Property was evaluated against the locations of a soil radon gas study published by the Ontario Geological Survey (OGS) (19) (20). The City and the location of the Phase One Property are not within the four main study areas investigated by the OGS. Wood is not aware of other records of the presence or emission of radon gas in the immediate area of the Town. Based on this information, Wood does not suspect radon gas to be a significant environmental issue at the Phase One Property.

5.2.12 Air Emissions and Odours

Wood did not observe the presence of air emission sources at the time of the reconnaissance that could possibly affect the environmental condition of the Phase One Property (i.e., building surfaces and/or surficial soils). No significant environmental issues regarding air emissions at the Phase One Property have been identified during the reconnaissance.

5.2.13 Mould

Moulds (also known as filamentous fungi) are present everywhere in the natural environment, indoors and outdoors. Mould growth can occur on building materials that are impacted by moisture and/or water. The extent of potential mould growth was not investigated as part of this report. Evidence of conditions that may promote mould growth (e.g., moist or wet conditions) were not observed during the reconnaissance, however, observations were made only in readily accessible areas of the site buildings (i.e., did not include concealed spaces such as behind walls or above ceilings).

5.2.14 Designated Substances and Hazardous Building Materials

There are eleven designated substances that are regulated by the Occupational Health & Safety Act (OHSA) (21), including asbestos, lead, mercury, silica, arsenic, acrylonitrile, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride.

5.2.14.1 Asbestos

Asbestos refers to a group of naturally occurring fibrous mineral silicates that is known to have been used in over 3,000 products. Friable asbestos materials can be readily crumbled using hand pressure, separating asbestos fibres from the associated binding materials and is commonly seen in boiler and pipe insulation. Non-friable asbestos is associated with a binding agent that prevents the ready release of airborne fibres and is typically found in roofing tars, floor and drywall compound, plaster and pre-cast asbestos cement products commonly referred to as "transite" (e.g., roof drains and transite panels).

Given the date of construction of the site buildings (i.e., mid 1970s), ACMs may be present at the Site as the use of ACMs were not discontinued until the early 1990s. Potentially friable ACMs were not observed during the reconnaissance; however, observations were made only in readily accessible areas of the existing buildings (i.e., not any concealed spaces such as behind walls or above ceilings). Potentially non-friable ACMs were observed in the form of floor tiles, ceiling tiles, drywall compound and caulking.

5.2.14.2 Lead

Lead is a heavy metal typically found in metallic lead products such as water distribution pipes, electrical batteries, lead solder, and electric cable sheathes; inorganic compounds (components of products such as insecticides, pigments, paints and glass); and organic lead compounds (the most commonly known of which are tetramethyl lead and tetraethyl lead, used as antiknock additives in gasoline).

The interior walls of the Site buildings contained painted surfaces. Given the date of construction of the Site buildings (i.e., mid 1970s), it is likely that lead-based paints are present given the legislative definition of LCP in Canada was recently revised (2010) to include a much lower acceptable concentration of lead than was previously regulated. Observations made at the time of the reconnaissance indicated that painted surfaces of the Site buildings were in good physical condition (i.e., minimal peeling and/or flaking).

The presence of LCPs can only be verified through sampling and analysis of suspect paint samples. If present at the Site, LCPs may be addressed through the implementation of an appropriate management or abatement plans to protect the health of persons working at the Site, as required under the OHSA. Where LCPs are in poor condition (i.e., peeling or flaking) and potential human health concerns exist, LCPs may be addressed through encapsulation or removal.

5.2.14.3 Mercury

Minor amounts of mercury are commonly found in a variety of building materials including mercury vapour lamps and thermostats and other electrical control switches. Mercury vapour is suspected to be present in fluorescent and high intensity discharge (HID) lamps. Mercury is suspected to be present in thermostats. Given the potential quantities of mercury present and their intended use, potential concerns are not expected.

5.2.15 Unidentified or Other Substances

No unidentified substances were observed at the Phase One Property.

5.2.15.1 UFFI

Urea formaldehyde foam insulation (UFFI) was typically made at a construction Phase One Property from a mixture of urea-formaldehyde resin, a foaming agent, and compressed air. The mixture was injected as a thermal insulating material for difficult-to-reach cavities in walls of existing buildings in the 1970s. The urea and formaldehyde 'cured' into insulating foam plastic. UFFI was discontinued in 1980 after its ban in Canada under the HPA.

The presence of UFFI was not identified during the reconnaissance.

5.2.15.2 Polychlorinated Biphenyls

PCB-containing products (e.g., oil in light ballasts and liquid-filled transformers) were manufactured for use in applications where stable, fire-resistant, and heat-transfer properties were demanded between 1926-29 and 1977. Most PCBs were sold for use as dielectric fluids (insulating liquids) in electric transformers and capacitors. Other uses included heat transfer fluid, hydraulic fluid, dye carriers in carbonless copy paper, plasticizers in paints, adhesives, and caulking compounds.

In Canada, PCBs were prohibited from being used in products, equipment, machinery, electrical transformers and capacitors that were manufactured or imported into the country after July 1980.

However, older equipment in use after this date may still contain PCBs if the equipment's fluid has not been changed, or if there was sufficient inventory of such equipment.

As noted in Section 5.2.1, electrical service is supplied to the Site by NPE via two pad-mounted transformers located adjacent to the south of the washroom building. Wood contacted NPE regarding the PCB status of these transformers. NPE indicated to Wood that the transformers are both PCB-free, and that Unit 800604 was manufactured in 2006, and Unit 800406 was manufactured in 1997. Furthermore, staining of the transformer pads was not observed (during winter conditions). Two more sub-grade transformers were present in concrete vaults near campsites. Other suspect PCB-containing equipment was not observed at the Phase One Property.

5.2.15.3 ODS

Ozone depleting substances (ODSs) include any substances containing chlorofluorocarbon (CFC), hydrochlorofluorocarbon (HCFC), halon or any other material capable of destroying ozone in the atmosphere. ODSs have been used in rigid polyurethane foam and insulation, laminates, aerosols, air conditioners, fire extinguishers, cleaning solvents and the sterilization of medical equipment.

Apart from a residential style air conditioner servicing the office/gatehouse, and refrigerator/ freezers, no other equipment was observed at the Phase One Property that could potentially contain ODSs.

5.2.15.4 Radioactive Materials

The Canadian Nuclear Safety Commission (CNSC) is responsible for the management and licensing of radioactive materials, to ensure that the use of nuclear energy and materials do not pose undue risk to health, safety, security and the environment. Industrial equipment such as X-ray imagers, metal detection devices and measuring devices may contain radioactive materials and may be a hazard if used or stored improperly.

Radioactive materials or equipment (labelled as such) were not observed at the Phase One Property and the Phase One Property is not registered with the CNSC. No testing for the presence of radioactive material was undertaken.

5.2.15.5 Animals and Pest Control

Exposure to bird/bat droppings, rodent excreta and raccoon droppings can cause adverse health effects in humans. Thus, accumulation of this material should be kept to the lowest practical level. The presence of these droppings/excreta is not inferred to be an issue at the Phase One Property.

5.3 Enhanced Investigation Property Observations

Part VI, 22(1) of *O. Reg. 511/09* defines an *enhanced investigation property* as a property where (i) a listed potentially contaminating activity has occurred or is occurring, (ii) has or is being used for industrial purposes, (iii) that is being used or has been used, in whole or in part, as a garage, as a bulk liquid dispensing facility, including a gasoline outlet, or (iv) for the operation of dry cleaning equipment.

The Phase One Property is not classified as an enhanced investigation property.

5.3.1 Industrial/Commercial Operations

According to the Phase One Property representative, no industrial operations have ever taken place at the Phase One Property to their knowledge. The Phase One Property has operated as a commercial campground since its development.

5.3.2 Hydraulic Lift Equipment

Mechanical equipment including piston type elevators, vehicle hoists, loading dock lifts, and compactors comprise typical hydraulically operated devices. Such equipment contains hydraulic oils which are operated under high pressures and can be released into the environment because of leaks or equipment failure.

Wood did not observe the presence of hydraulic lift equipment during the reconnaissance.

5.3.3 Vehicle/Equipment Maintenance Areas

Currently, vehicle maintenance does not take place at the Phase One Property and it is unlikely that vehicle/equipment maintenance has ever taken place at the Phase One Property.

5.3.4 Oil/Water Separators

No oil/water separators were observed on the Phase One Property at the time of reconnaissance.

5.3.5 Hazardous Materials Use/Storage

No hazardous materials are used or stored at the Phase One Property.

5.3.6 Generated Wastes

5.3.6.1 Liquid Waste

With the exception of sewage (discussed in Section 5.2.1), the generation, storage or disposal of liquid wastes was not observed at the Site at the time of the reconnaissance. Additionally, the Phase One Property was not listed in the 2015 MECP computer database as a registered liquid industrial waste generator.

5.3.6.2 Solid Waste

Based on observations made by Wood during the reconnaissance, it is Wood's understanding that the Phase One Property does not generate hazardous solid waste. As mentioned in Section 3.2, the Phase One Property is not listed in the current MECP computer database as a registered generator of solid hazardous waste.

5.3.7 Liquid Discharge Points and Spills History

The Phase One Property representative was unaware of any spills or discharges that have taken place at the Phase One Property. No areas of significant surface staining or stressed vegetation (under winter conditions) were observed by Wood at the Phase One Property at the time of the reconnaissance.

5.4 Adjacent Land Uses

Wood reviewed the current land uses of neighbouring properties from publicly accessible locations to assess possible environmental impacts to the Phase One Property that may arise from off-site operations. Properties surrounding the Phase One Property are summarized as follows:

North of the Phase One Property

North of the Phase One Property was the Welland River, followed by industrial and commercial land uses.

East of the Phase One Property

East of the Phase One Property was Stanley Avenue followed by Oaklands Golf Course.

South of the Phase One Property

South of the Phase One Property was Lyon's Creek Road, followed by residential use followed by Lyon's Creek.

West of the Phase One Property

West of the Phase One Property was undeveloped land.

Summary

No PCAs were identified on properties within the Phase One Study Area.

5.5 Written Description of Investigation

Findings of Wood's inspection and interviews were outlined throughout this section of our report. In summary, the reconnaissance and related inquiries identified two PCAs on the Phase One Property that resulted in APECs as follows:

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity*	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC-1: Potentially contaminated fill materials	Southwestern corner of the Phase One Property	#30 – importation of fill material of unknown quality	On-Site (Southwestern corner of the Phase One Property)	Metals/PHCs/ BTEX	Soil
APEC-2: Presence of electrical transformer	Surrounding the electrical transformers near the bathroom facility	#55 - transformer manufacturing, processing and use	On-Site (located on concrete pads south of the bathroom facility)	PCBs	Soil
APEC-3: Presence of electrical transformer	Surrounding one sub-grade electrical transformer in the campsite area	#55 - transformer manufacturing, processing and use	On-Site (located sub-grade near campsites)	PCBs	Soil

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity*	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC-4: Presence of electrical transformer	Surrounding the second sub-grade electrical transformer in the campsite area	#55 - transformer manufacturing, processing and use	On-Site (located sub-grade near campsites)	PCBs	Soil

PHCs – Petroleum Hydrocarbons, BTEX – Benzene, Toluene, Ethylbenzene, and Xylene, PCBs – Polychlorinated Biphenyls

No PCAs were identified on properties within the Phase One Study Area during the reconnaissance.

A Copy of Wood's Interview notes are provided in **Appendix D** and were outlined throughout this report.

6.0 REVIEW AND EVALUATION OF INFORMATION

6.1 Current and Past Uses

According to historical records obtained by Wood, including aerial photography and discussions from the Phase One Property representative, the history of the occupancy of the Phase One Property is as follows:

Years	Name of Owner	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, etc.
Prior to 1811	Crown	Undeveloped	Agricultural or Other Use	Inferred. No other documentation available.
1811	John Burch	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1811-1824	Lanty Shannon	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1824-1830	William Terry	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1830-1831	John Darling	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1831-1866	David Davis	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1866-1872	James Cranes	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories and aerial photographs not available.
1866-1873	Thomas Davis	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories, and aerial photographs not available.

Years	Name of Owner	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, etc.
1873-1903	James McKeown	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories, and aerial photographs not available.
1872-1921	Andrew Simpson	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories, and aerial photographs not available.
1903-1911	Benjamin Hewson	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership and title search. FIPs, city directories, and aerial photographs not available.
1911-1934	Charles Kiemele	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership, title search, and the 1934 aerial photograph. FIPs and city directories not available.
1932-1965	George Glasgow	Field Crops	Agricultural or Other Use	This property use is inferred based on private ownership, title search, and the 1934, 1955, 1960, 1965, and 1970 aerial photographs. FIPs and city directories not available.
1965-1972	George Glasgow	Developed Campground	Parkland	This property use is inferred based on private ownership, title search, and the 1965 and 1970 aerial photographs. FIPs and city directories not available.
1963-1965	Samuel De Lorenzo	Developed Campground	Parkland	This property use is inferred based on title search and 1965 aerial photograph. FIPs and city directories not available.
1965-1966	Samuel De Lorenzo	Developed Campground	Parkland	This property use is inferred based on title search and 1965 aerial photograph. FIPs and city directories not available.
1958-1965	Andrew Harris & Shirley Harris	Developed Campground	Parkland	This property use is inferred based on title search and 1960 and 1965 aerial photographs. FIPs and city directories not available.
1965-1971	Andrew Harris & Shirley Harris	Developed Campground	Parkland	This property use is inferred based on title search and 1965 and 1970 aerial photographs. FIPs and city directories not available.

Years	Name of Owner	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, etc.
1966-1971	Border Marine Distributors Ltd.	Developed Campground	Parkland	This property use is inferred based on title search and 1965 aerial photograph. FIPs and city directories not available.
1971-1991	Welland Securities (1964) Ltd.	Developed Campground (Oaklands Tent & Trailer Park Ltd.)	Parkland	This property use is inferred based on title search, 1975, 1980, 1983, and 1989 aerial photographs, and city directories. FIPs not available.
1991-2017	Marineland of Canada Inc.	Developed Campground (King Waldorf's Tent & Trailer Park)	Parkland	This property use is inferred based on title search, 1994, 2000, 2006, 2010, and 2015 aerial photographs, and city directories. FIPs not available.
2017-Present	2610832 Ontario Inc.	Developed Campground (Oaklands Campground)	Parkland	This property use is inferred based on the title search, Phase One Property reconnaissance, and interviews. FIPs and city directories not available.

6.2 Potentially Contaminating Activities and Areas of Potential Environmental Concern

Wood's findings regarding potential areas of environmental concern as a result of the Records Review are presented in Section 3.5, and findings as a result of Interviews and the Phase One Property Phase One Property reconnaissance are presented in Section 5.5. Based on the findings of the Phase One ESA, two PCAs have been identified associated with surrounding properties which result in APECs on the Phase One Property as follows:

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity*	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC-1: Potentially contaminated fill materials	Southwestern corner of the Phase One Property	#30 – importation of fill material of unknown quality	On-Site (Southwestern corner of the Phase One Property)	Metals/PHCs/ BTEX	Soil

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity*	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC-2: Presence of electrical transformer	Surrounding the electrical transformers near the bathroom facility	#55 - transformer manufacturing, processing and use	On-Site (located on concrete pads south of the bathroom facility)	PCBs	Soil
APEC-3: Presence of electrical transformer	Surrounding one sub-grade electrical transformer in the campsite area	#55 - transformer manufacturing, processing and use	On-Site (located sub-grade near campsites)	PCBs	Soil
APEC-4: Presence of electrical transformer	Surrounding the second sub-grade electrical transformer in the campsite area	#55 - transformer manufacturing, processing and use	On-Site (located sub-grade near campsites)	PCBs	Soil

PHCs – Petroleum Hydrocarbons, BTEX – Benzene, Toluene, Ethylbenzene, and Xylene, PCBs – Polychlorinated Biphenyls

6.3 Phase One Conceptual Phase One Property Model

The Phase One CSM provides a description of the areas where potentially contaminating activities occurred, a physical description of the Phase One Property including the geology, hydrogeology and sub-surface structures that can influence the potential movement of any contaminants that may have been released, and any known contaminant impacts to the Phase One Property.

The CSM is described in the following figures: **Figure 1** is the Property Location Map (Key Plan); **Figure 2** illustrates the existing layout of the Phase One Property; and, **Figure 3** includes the CSM and the Phase One ESA Study Area.

6.3.1 Physical Setting

6.3.1.1 Topography and Hydrogeology

The elevation at the Phase One Property ranges from 171 metres above sea level (mASL) to 180 mASL. The UTM coordinates at the approximate centre of the Site are 655955 east and 4767400 north (NAD 83 UTM 17N). The topography across the central (developed campground) portion of the Site is relatively flat, however, slopes steeply at the north end towards the Welland River. The Welland River is located adjacent to the north of the Phase One Property.

According to the **2010 Surficial Geology of Southern Ontario Miscellaneous Release – Data 128 REV**, published by the **Ontario Geological Survey (OGS)**, the geology near the Phase One Property is interpreted to consist of fine textured glaciolacustrine deposits consisting of silt and clay with minor sand, and described as massive to well laminated.

The **2007 Paleozoic Geology of southern Ontario Miscellaneous Release – Data 219**, published by the **Armstrong, D.K. and Dodge, J.E.P. of the OGS**, describes the bedrock in the area to consist of dolostone, shale and evaporites of the Salina Formation. Bedrock is anticipated to be encountered at depths in the range of 26 to 44 meters below ground surface (mbgs) (**Bedrock Topography of the Niagara and Niagara-on-the-Lake Area, Southern Ontario**, Ontario Geological Survey Preliminary Map P.2400, 1981).

The regional ground water flow direction, based on topographic features and knowledge gained from other sites in the area, is expected to be generally to the north towards the Welland River. Locally, however, the shallow ground water flow may be influenced by underground utility trenches, conduits, and structures, variations in soil type, and minor fluctuations in topography.

6.3.1.2 Fill Activities and Water Wells

The Site is generally graded even with the surrounding properties and significant amounts of fill material is inferred not to be present at the Site. However, an area of disturbed soil/potential infilling was noted in the 2000 aerial photograph. The fill appeared to be placed at grade (not spread out). The ground surface in this area was obscured by snow at the time of the Site visit.

No water wells were observed at the Phase One Property by Wood during the reconnaissance. A search of the MECP Well Records Database conducted by Wood on January 3, 2019 showed no water well records for domestic (potable) ground water wells on the Phase One Property, however, one domestic (potable) water well was identified within the study area, approximately 130 m to the south. An observation or monitoring well was also identified approximately 125 m north of the Phase One Property. It is possible that a well was historically present associated with the farmstead at the south end of the Phase One Property.

No additional water wells, test wells, disposal wells, oil, gas or salt wells were observed at the Phase One Property by Wood during the reconnaissance.

6.3.1.3 Water Bodies and Areas of Natural Significance (if any)

The Welland River is located adjacent to the north of the Phase One Property. Lyon's Creek is also located approximately 35 m to 80 m to the south of the Phase One Property across Lyon's Creek Road. Therefore, the Phase One Property does include land that is within 30 m of a "water body".

Based on a review of the Ministry of Natural Resource's Natural Heritage Areas map, there is a Provincially Significant Wetland located on the southwestern edge of the Phase One Property. Therefore, the Phase One Property is considered an Environmentally Sensitive Area.

6.3.1.4 Phase One Property Structures and Preferential Pathways

At the time of the reconnaissance, five buildings were present on the Phase One Property. An office/gatehouse building, a shed (for storage of lawn maintenance equipment, etc.), a washroom/ shower/laundry facilities building, a pool shed, and a pump house. The southern portion of the Site is undeveloped, with the exception of the area cleared for the on-Site sewage disposal system, which includes a septic tank and leaching bed, and is located in the southern portion of 9015 Stanley Avenue. Ground cover conditions at the time were snow covered. The Phase One Property was partially fenced along the east edge of the property with a gate to provide vehicle access to the campground.

Underground services were provided for at least municipal water and natural gas. There is also a septic system present at the Phase One Property. The trenches for these utilities and septic system likely remain intact. If so, they could act as preferential pathways for mobile contaminants to migrate onto or off the Phase One Property.

6.3.2 Sources of Contamination

Two sources of potential contamination at the Phase One Property have been identified as noted throughout this report, and as documented in Section 6.2. The PCAs were identified in relation to the historic addition of fill material of unknown quality towards the south of the Phase One Property (PCA #30), the presence of two pad-mounted transformers to the south of the bathroom facility (PCA #55), and the presence of two sub-grade electrical transformers in the campsite area (two APECs, PCA #55). These resulted in APECs on the Phase One Property.

6.3.3 Contaminant Migration

PHCs and VOCs are potentially mobile, while any metal and/or inorganic-impacted soils would remain where they are found in surficial soils. Regional ground water flow direction is anticipated to be to the north/northeast towards an unnamed creek, however, at a local level, the shallow ground water flow may be influenced by underground utility trenches, conduits, and structures, variations in soil type, and minor fluctuations in topography. Both of the PCAs identified were located at the Phase One Property.

6.3.4 Uncertainty and Data Gaps

Uncertainty exists regarding the depth to ground water, and whether manmade features influence ground water flow.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Summary

Based on the Phase One ESA conducted by Wood, evidence of potential contamination associated with the Phase One Property has been identified with respect to the historic addition of fill material of unknown quality towards the south of the Phase One Property (PCA #30), the presence of two pad-mounted transformers to the south of the bathroom facility (PCA #55), and the presence of two sub-grade electrical transformers in the campsite area (two APECs, PCA #55). These resulted in APECs on the Phase One Property.

7.2 Whether Phase Two Environmental Phase One Property Assessment Required Before Record of Phase One Property Condition Submitted

A Phase Two ESA would be required at this Phase One Property to address the APECs identified in this Phase One ESA before an RSC could be submitted.

7.3 Recommendations and Potential Operational/Management Issues

The presence of suspected LCPs, ACMs, and PCBs were identified as potential operational/ management issues by Wood. To address potential operational/management issues, Wood offers the following recommendations:

- Suspected LCPs may be present at the Phase One Property based on criteria outlined in the Canadian Hazardous Products Act – Surface Coating Materials Regulation, as revised in 2010. As enforced by the Ministry of Labour (MOL), all LCP in poor condition must be removed by a qualified lead abatement contractor as outlined in the MOL Guideline titled the *"The Control of Lead Exposures During the Removal of Lead on Construction Projects"*. Although many companies eliminated the use of lead in paint in the early 1990s, the legislative definition of LCP in Canada was revised in 2010 to include a much lower acceptable concentration of lead than was previously regulated. Based on these revised levels, paint manufactured in 1991 could still contain concentrations of lead above the regulated levels as defined in 2010.

- A Designated Substances Survey (DSS) is required if future repair, renovation or demolition activities are planned in areas of the building where suspect ACMs and LCPs are located.

A DSS is required to fulfil the Owner's requirements under Section 30 of the *Ontario Occupational Health and Safety Act*, (the OHSA), Revised Statutes of Ontario 1990, (as amended). The building owner must provide the DSS report to all contractors working on the Phase One Property. Subsequently, all contractors must provide the DSS report to their subcontractors.

8.0 CLOSURE

Under the supervision of Patrick Shriner, P.Geo., QP, Ms. Tracy Wolowidnek of Wood conducted the Phase One Property reconnaissance. Any practice of geoscience documented within this report was undertaken by or under the supervision of a Professional Engineer or Professional Geoscientist licensed in the Province of Ontario. The Qualifications of the Assessors are provided in **Appendix H.**

This report was prepared for the exclusive use of Ricci Law Professional Corporation and is intended to provide a Phase One ESA of 9015 Stanley Avenue, Niagara Falls, Ontario, at the time of the reconnaissance. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from Wood will be required. With respect to third parties, Wood has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The report is based on data and information collected during the Phase One ESA of the property conducted by Wood. It is based solely on the conditions of the Phase One Property encountered at the time of the visit on January 24, 2019 supplemented by a review of historical information and data obtained by Wood as described in this report, and discussion with a representative of the owner/occupant, as reported herein. Except as otherwise may be specified, Wood disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to Wood after the time during which Wood conducted the Phase One ESA.

In evaluating the property, Wood has relied in good faith on information provided by other individuals noted in this report. Wood has assumed that the information provided is factual and accurate. In addition, the findings in this report are based, to a large degree, upon information provided by the current owner/occupant. Wood accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

Wood makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

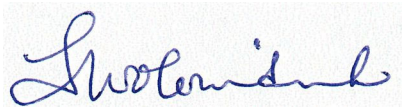
This Report is also subject to the further Standard Limitations contained in **Appendix I**.

If you have any questions or require further information, please contact the undersigned.

Wood Environment & Infrastructure Solutions,
a division of Wood Canada Limited.

Prepared by:

Braedan Huras, B.Sc., EPt
Environmental Technician

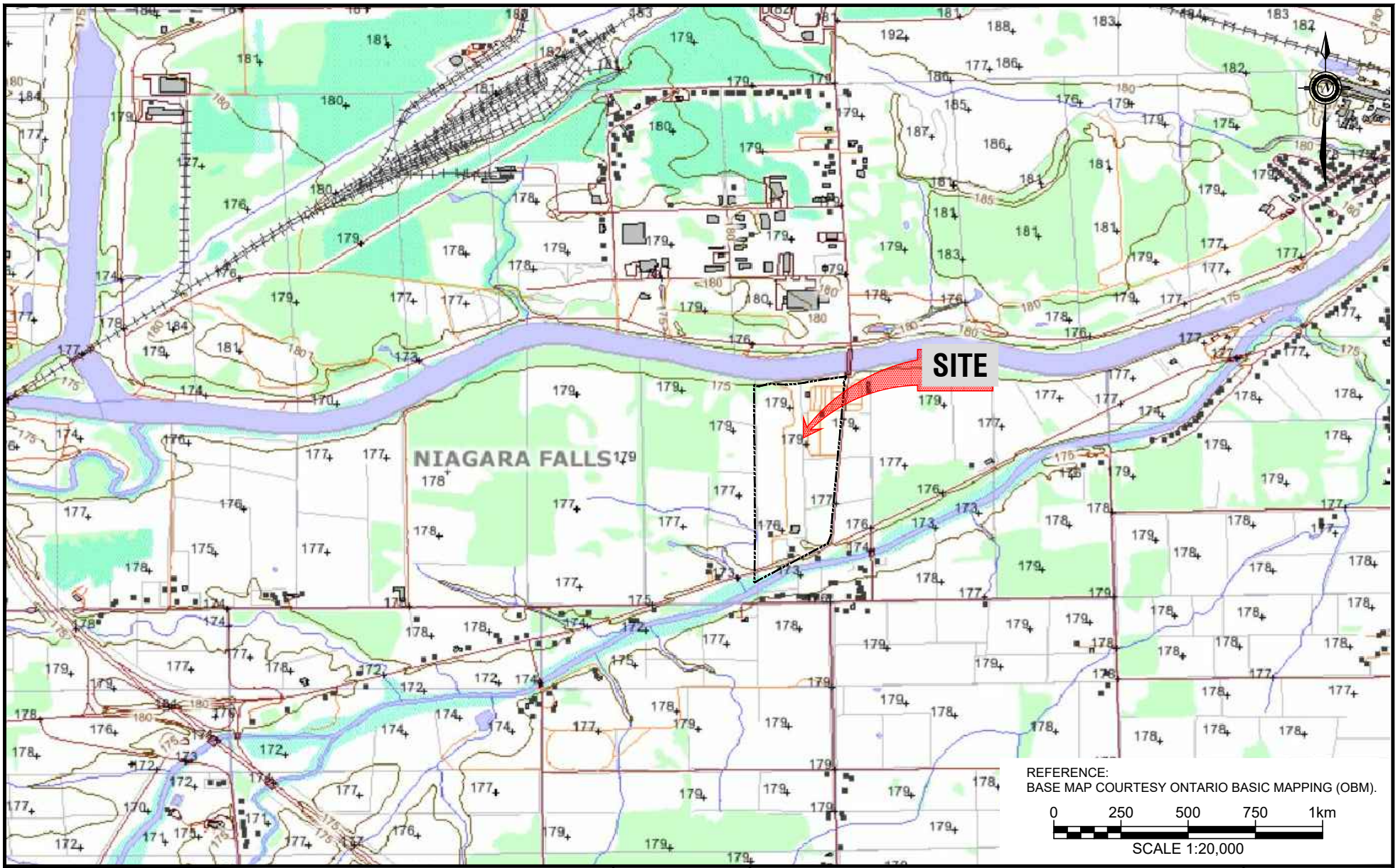


Tracy Wolowidnek, B.Sc.
Environmental Scientist

Reviewed by:

Patrick Shriner, P.Geo.
Associate Environmental Geoscientist

Figures



REFERENCE:
BASE MAP COURTESY ONTARIO BASIC MAPPING (OBM).

0 250 500 750 1km

SCALE 1:20,000

CLIENT: RICCI LAW PROFESSIONAL CORPORATION	DWN BY: ZF	PROJECT: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT OAKLANDS CAMPGROUND 9015 STANLEY AVENUE, NIAGARA FALLS, ON	REV. NO.: A
	CHK'D BY: TW		DATE: MARCH 2020
	DATUM: NAD 83		PROJECT NO: SCT196351
	PROJECTION: UTM ZONE 17T		
	SCALE: 1:30,000	TITLE: KEY PLAN	FIGURE No. 1

Wood Environment & Infrastructure Solutions
3300 Merrittville Highway, Unit 5
Thorold, Ontario L2V 4Y6

wood.

C:\Users\zhanna.furman\appdata\local\temp\AcPublish_15088\SCT196351_9015_Phase One.dwg – Figure 1 – Mar. 20, 2020 2:04pm – zhanna.furman

LEGEND:

- PROPERTY BOUNDARY
- T PAD-MOUNTED TRANSFORMER

CLIENT: RICCI LAW PROFESSIONAL CORPORATION

Wood Environment & Infrastructure Solutions
3300 Merrittville Highway, Unit 5
Thorold, Ontario L2V 4Y6

DWN BY:	ZF
CHK'D BY:	TW
DATUM:	NAD 83
PROJECTION:	UTM ZONE 17T
SCALE:	AS SHOWN

PROJECT: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
OAKLANDS CAMPGROUND
9015 STANLEY AVENUE, NIAGARA FALLS, ON

TITLE: PHASE ONE PROPERTY LAYOUT PLAN

DATE:	MARCH 2020
PROJECT NO:	SCT196351
REV. NO.:	A
FIGURE No.	2

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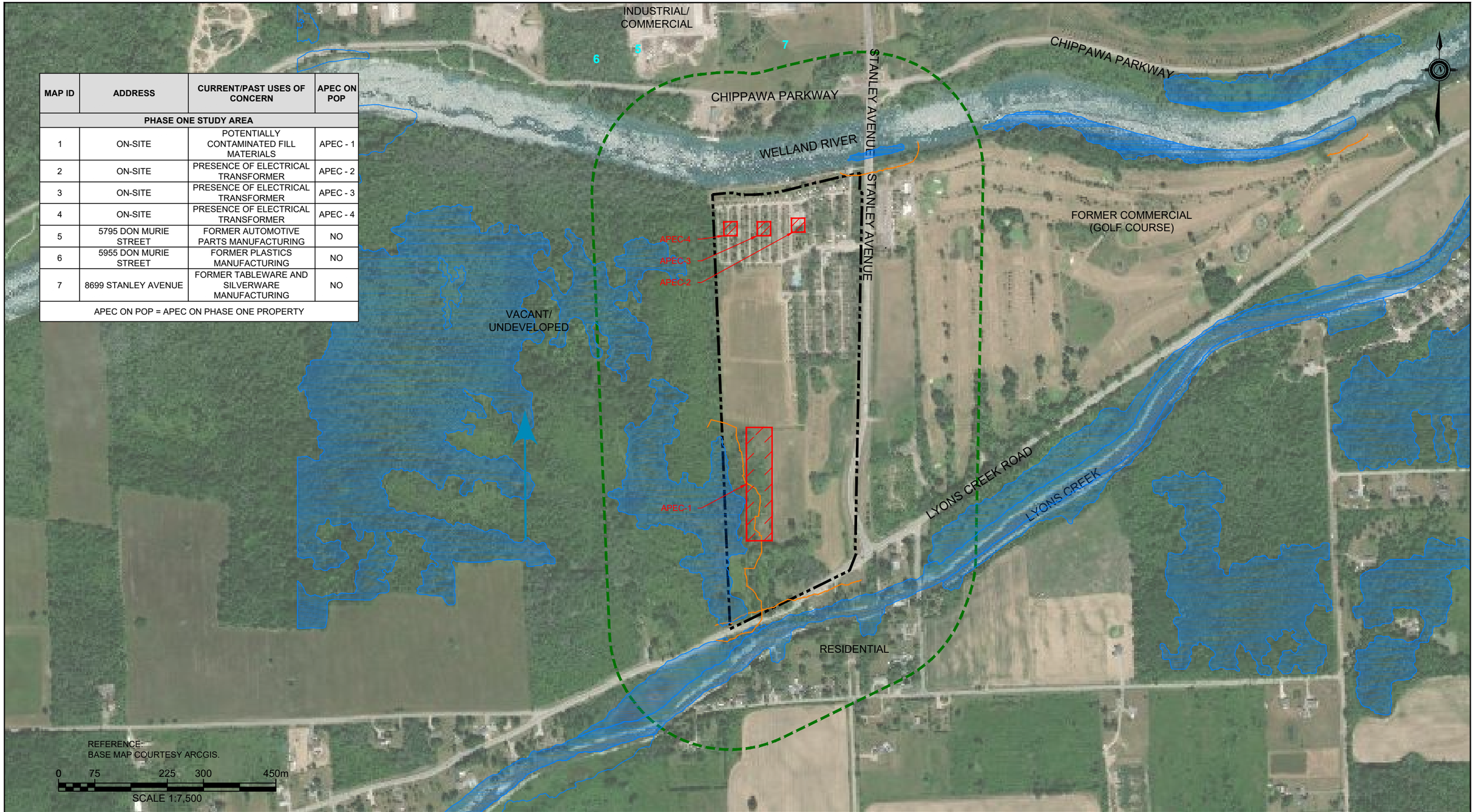
MAP ID	ADDRESS	CURRENT/PAST USES OF CONCERN	APEC ON POP
PHASE ONE STUDY AREA			
1	ON-SITE	POTENTIALLY CONTAMINATED FILL MATERIALS	APEC - 1
2	ON-SITE	PRESENCE OF ELECTRICAL TRANSFORMER	APEC - 2
3	ON-SITE	PRESENCE OF ELECTRICAL TRANSFORMER	APEC - 3
4	ON-SITE	PRESENCE OF ELECTRICAL TRANSFORMER	APEC - 4
5	5795 DON MURIE STREET	FORMER AUTOMOTIVE PARTS MANUFACTURING	NO
6	5955 DON MURIE STREET	FORMER PLASTICS MANUFACTURING	NO
7	8699 STANLEY AVENUE	FORMER TABLEWARE AND SILVERWARE MANUFACTURING	NO
APEC ON POP = APEC ON PHASE ONE PROPERTY			



LEGEND:

- PHASE ONE PROPERTY BOUNDARY
- PHASE ONE STUDY AREA (250 m RADIUS)
- 1 POTENTIALLY CONTAMINATING ACTIVITY (PCA)
- INFERRED GROUNDWATER FLOW DIRECTION
- AREA OF POTENTIAL ENVIRONMENTAL CONCERN (APEC)
- LYONS CREEK WETLAND COMPLEX AND WELLAND RIVER EAST WETLAND COMPLEX
- 30m BUFFER FROM THE WETLANDS

CLIENT:
RICCI LAW PROFESSIONAL CORPORATION

Wood Environment & Infrastructure Solutions
3300 Merrittville Highway, Unit 5
Thorold, Ontario L2V 4Y6

wood.

DWN BY:	ZF
CHK'D BY:	TW
DATUM:	NAD 83
PROJECTION:	UTM ZONE 17T
SCALE:	AS SHOWN

PROJECT
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
OAKLANDS CAMPGROUND
9015 STANLEY AVENUE, NIAGARA FALLS, ON

TITLE
CONCEPTUAL SITE MODEL AND PHASE ONE STUDY AREA

DATE:	MARCH 2020
PROJECT NO:	SCT196351
REV. NO.:	A
FIGURE No.	3

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Appendix A

Legal Survey Plan

Appendix B

Phase One ESA Reference Document

Phase One Environmental Site Assessment

Reference Document

Asbestos	Asbestos refers to a group of naturally occurring fibrous mineral silicates that is known to have been used in over 3,000 products commonly referred to as asbestos containing materials (ACMs). Friable ACM can be readily crumbled with hand pressure, releasing asbestos fibres from the associated binding materials and is commonly seen in boiler and pipe insulation and sprayed fireproofing. Non-friable ACM is associated with a binding agent that prevents the release of airborne fibres and is typically found in floorings, cars and sealants, drywall compound, plaster and pre-existing asbestos cement products commonly referred to as Transite (i.e., roof drains and transite panels). The handling, identification, documentation, and removal of asbestos are regulated by *Ontario Regulation278/05 Designated Substance – Asbestos On Construction Projects And In Buildings And Repair Operations*. The presence of ACMs can only be verified through multiple samples and analysis of suspect materials as outlined in *O. Reg. 278/05*. ACMs can be addressed through the implementation of an appropriate management and/or abatement program to protect the health of persons working in and the Site, as required under the OHSA and *O. Reg. 278/05*. ACMs in poor or deteriorated condition can be addressed through repair, encapsulation, enclosure or removal.
Hydraulic Equipment	Mechanical equipment including piston type elevators, vehicle hoists, loading dock lifts, and compactors comprise typical hydraulically operated devices. Such equipment contains hydraulic oils which are operated under high pressures and can be released into the environment as a result of leaks or equipment failure.
Lead	Lead is a heavy metal typically found in metallic lead used to make water distribution pipes, electrical batteries, lead solder, and electric cable sheathes. Inorganic compounds (components of products such as insecticides, pigments, paints, and glass) and organic lead compounds (the most common of which are tetraethyl lead and tetraethyl lead, used as an anti-knock additives in gasoline). The presence of lead containing paints (LPPs) in buildings represents a potential hazard where persons, notably children, may ingest peeling or flaking LPPs. The generation of airborne lead containing dust created during renovation, demolition, or construction activities (i.e., during sanding and grinding), or like actions also comprises a potential health concern. The MOL issued the *Lead on Construction Projects* guideline in September

200[illegible]. The guideline includes legal requirements, health effects, control of the health hazard, classification of construction operations, and measures and procedures for working with the designated substance during operations that create lead dust or fumes.

The United States Department of Housing and Urban Development (the U.S. HUD) guideline of 1 milligram per square centimetre (mg/cm²), 0.5 percent lead by weight, or 5,000 parts per million (ppm) lead is used in the United States as a guideline for determining whether the use of safety precautions would be required during operations that create lead dust or fumes.

In 1976, the Canadian Federal Government introduced the Liquid Coating Materials Regulations under the Federal Hazardous Products Act (HPA), restricting the maximum total lead content of paints and other liquid coating materials used in or around premises attended by children or pregnant women to 0.5% by weight (5,000 mg/kg). In January [illegible], Health Canada negotiated a voluntary reduction of lead content in all Canadian produced consumer paint to a maximum of 0.06%. Recently the Canadian Federal Government revoked Part I of the HPA and enacted the Surface Coating Materials Regulations (SOR/2005-109) under the Canada Consumer Product Safety Act (S.C. 2010) which reduce the maximum total lead content of any new surface coatings for consumer products to 0.009% (90 mg/kg). This reduction does not generally apply to surface coating applied to buildings or other structures used for agricultural or industrial purposes or as an anti-weathering or anti-corrosive coating.

The OHSA does not set a regulatory limit on the concentration of lead in paint and based on discussions with the MOL, any concentration of lead in paint applications should be considered to be lead-containing. The presence of LCPs can only be verified through sampling and analysis of suspect paint samples or by using a handheld XRF. If present, LCPs may be addressed through the implementation of an appropriate management or abatement plan to protect the health of workers. Where LCPs are in poor condition (i.e., peeling or flaking) they may be addressed through removal. Appropriate management plans are also required where maintenance, alteration, renovation, or demolition activities may disturb these materials.

Methane

Methane is a colourless and odourless gas commonly formed by the decomposition of organic material, and is a large component of natural gas associated with waste disposal sites. Natural sources of methane include marshes, swamps, bogs, fens or coal and/or peat deposits. Potential methane risks include explosion hazards where methane enters closed spaces and concentrations exceed the lower explosive limit.

Mer□r□ Mer□r□ an □e □sed in □ores□en□, □o□pa□□ □ores□en□and hi□h in□ensi□ dis□har□e (HID) la□ps, ele□ri□al s□i□□hes, □her□os□a□s, □her□o□e□ers, and □er□ain □a□eries. All □ores□en□ and □o□pa□□ □ores□en□ li□h□s □on□ain □er□□r□ re□ardless o□□he da□e o□□an□a□□re. The □anadian □o□n□il o□ Minis□ers o□□he En□iron□en□(□□ME)" □anada-□ide S□andard □or Mer□□r-□on□ainin□ La□ps" (200□) is lar□el□ □eared □o□ards red□in□ □he a□o□n□o□ □er□□r□ in la□ps a□□he □an□a□□rin□ s□a□e; ho□e□er, □he□ do re□o□□end □ha□□he release o□□er□□r□ □an □e □ini□i□ed □hro□□h □he proper re□□lin□ and disposal o□□er□□r□-□on□ainin□ la□ps. Mer□□r□□as also added □o so□e leaded pain□s as a □□n□al re□ardan□. In □an□ar□ 1991, □nder □he □ol□n□ar□ ind□s□r□ pro□ra□ ne□o□ia□ed by Heal□h □anada, □he in□en□ional addi□ion o□ □er□□r□ □o □anadian prod□□ed □ons□□er pain□s □or in□erior □se □eased. □nder □he □ederal S□□a□e □oa□in□ Ma□erials Re□□la□ions (SOR/200□-1□9), □he □ax□mum □o□al □er□□r□ □on□en□ra□ion o□ pain□s and o□her s□□a□e □oa□in□s is res□ri□ed □o 1□ mg/kg (0.00□%) □hen a dried sa□ple is □es□ed in a□□ordan□e □i□h a □e□hod □ha□□on□or□s □o □ood la□ora□or□ pra□i□es. The 1□ mg/kg □er□□r□ res□ri□ion is □ni□□e □o □anada and is □ased on a □o□i□olo□i□al assess□en□ by Heal□h □anada in 1995, □hi□h □as re□on□ir□ed in 200□.

Mo□ld Mo□ld spores are □□i□□o□s in □o□h indoor and o□□door en□iron□en□s and in □he presen□e o□ade□□a□e □ois□□re, □ay pose a □on□ern in a □□ildin□ en□iron□en□. There are □□rren□l□ no re□□la□ions spe□i□i□all□ □o□erin□ e□pos□re □o □o□ld and□or □o□ld re□ediation pra□i□es in □anada and □here are no o□□□pa□ional e□pos□re li□i□s □ha□de□ine a□□ep□a□le le□els o□□o□ld e□pos□re □i□ho□□ad□erse heal□h e□e□s. Ho□e□er, Se□ion 2□ and 2□ o□□he OHSA s□a□es □ha□an e□plo□er and s□per□isor □us□ □a□e e□er□ reasona□le pre□a□ion □o ens□re □he heal□h and sa□e□□ o□□heir □or□ers. This in□□des e□pos□re □o □o□lds and o□her □iolo□i□al □a□er. Dire□ion on □he assess□en□ and re□ediation o□□o□ld in On□ario is □ased on □he *"Mould Guidelines for the Canadian Construction Industry"* □anadian □ons□□□ion Asso□ia□ion □do□□□en□(□□ A8□2) □e□□ar□ 200□, and □he *"Mould Abatement Guidelines, Second Edition."* En□iron□en□al A□a□e□en□ □o□n□il o□ On□ario (EA□O) 20□0.

O□one deple□in□ s□□s□an□es O□one deple□in□ s□□s□an□es (ODSs) in□lude an□ s□□s□an□es □on□ainin□ □hloro□l□oro□ar□on (CFC), □dro□hloro□l□oro□ar□on (□CFC), halon or an□ o□her □a□erial □apa□le o□des□ro□in□ o□one in □he a□□osphere. ODSs □a□e □een □sed in ri□id pol□□re□hane □oa□ and ins□la□ion, la□ina□es, aerosols, air □ondi□ioners, □ire e□in□□ishers, □leanin□ sol□en□s and □he s□erili□a□ion o□ □edi□al e□ip□en□. □ederal re□□la□ions in□rod□□ed in 1995 re□□ired □he eli□ina□ion o□prod□□ion and i□por□o□CFC s by □an□ar□ 1, 1996 □s□e□□o □er□ain essen□ial □ses) and a □ree□e on □he prod□□ion and i□por□o□HCFC-22 by □an□ar□ 1, 1996. These re□□la□ions also re□□ire □he □o□ple□e

eli□ina□ion o□H□□□22 □□ he □ear 2020. ODSs and o□her halo□ar□ons are re□□la□ed □□ On□ario Re□□la□ion □□3□□0 □ade □nder □he En□iron□en□al Pro□e□ion A□□EPA□.

Pol□□hlorina□ed □iphen□ls

P□□□□on□ainin□ prod□□s □e.□., oil in li□h□ □allas□s and li□□id□illed □rans□or□ers□□ere □an□a□□□red or □se in appli□a□ions □here s□□le, □re□ resis□an□, and hea□□□rans□er proper□ies □ere de□anded □e□□een □□2□□2□ and □□□□. Mos□P□□s □ere sold □or □se as diele□ri□ □□ids □ins□la□in□ li□□ids□in ele□ri□ □rans□or□ers and □apa□i□ors. O□her □ses in□□ded hea□□rans□er □□id, h□dra□li□ □□id, d□e □arriers in □ar□onless □op□ paper, plas□i□□ers in pain□s, adhesi□es, and □a□□in□ □o□po□nds.

In □anada, P□□s □ere prohi□i□ed □ro□ □ein□ □sed in prod□□s, e□□ip□en□, □a□hiner□, ele□□ri□al □rans□or□ers and □apa□i□ors □ha□□ere □an□a□□□red or i□□por□ed in□o □he □o□n□r□a□er □□□□□□0. Ho□e□er, older e□□ip□en□in □se a□er □his da□e □a□ s□ill □on□ain P□□s i□□he e□□ip□en□s □□id has no□□een □han□ed, or i□□here □as s□□□i□□en□in□en□or□o□s□□h e□□ip□en□.

P□□□□on□ainin□ la□p □allas□s in □ood □ondi□ion and s□ill in ser□i□e do no□ re□□ire re□o□al or repla□e□en□. Lea□in□ □allas□s sho□ld □e □eri□ied □or P□□ □on□en□, and i□□o□nd □o □e P□□ □on□ainin□, □ana□ed in a□□ordan□e □i□h MOE re□□la□ions re□ardin□ P□□ □as□e□. A□□ordin□ □o En□iron□en□al □anada□s *Handbook on PCBs in Electrical Equipment*, □an□s□□s□an□e □ha□ □on□ains □0 pp□ or □rea□er is □onsidered □o □e □on□a□ina□ed and □□s□□e □rea□ed as a P□□□□on□ainin□ s□□s□an□e.□ □here □ain□enan□e al□era□ion, reno□a□ion, or de□oli□ion a□i□i□ies □nder□a□en a□a Si□e □a□ res□□in □he □enera□ion o□□ore □han □.0 □□ o□P□□ □as□e, i□□ill □e ne□essar□ □o es□a□lish a se□□re li□ensed P□□ s□ora□e □a□li□□ a□□he Si□e or dispose o□□he □as□es a□an appro□ed P□□ disposal or des□□□ion □a□li□□. P□□ □as□es □o□alin□ less □han □.0 □□ □a□ □e disposed as non□ha□ardo□s □as□e a□an□ li□ensed □as□e disposal si□e.

Radioa□i□e Ma□erials

The □anadian □□□lear Sa□e□□ □o□□ission □□□S□□is responsi□le □or □he □ana□e□en□and li□ensin□ o□radioa□i□e □a□erials, □o ens□re □ha□□he □se o□ n□□lear ener□□ and □a□erials do no□ pose □nd□e ris□ □o heal□h, sa□e□□, se□□ri□□ and □he en□iron□en□. Ind□s□rial e□□ip□en□s□□h as □□ra□i□a□ers, □e□al de□e□ion de□i□es and □eas□rin□ de□i□es □a□ □on□ain radioa□i□e □a□erials and □a□□e a ha□ard i□□sed or s□ored i□ properl□.

Radon

Radon is a na□□rall□ o□□□rrin□ □as prod□□ed □□ □he de□a□ o□□□rani□□ □23□ □ha□ □ends □o □on□en□ra□e in □or□a□ions o□ □ranie, sands□one, □oal, phospha□e and □rani□□ deposi□s. Radon is □olo□rless, odo□rless and □as□eless and □ends □o per□ola□e □p □hro□□h soil □here i□□a□ en□er and a□□□□ □la□e in □ase□en□s o□□□ildin□s □hro□□h □o□ndation □ra□□s and □oin□s. □e□a□se □he e□is□en□e o□radon is dependen□□pon □eolo□i□al □a□ors, i□is

□ore o□a re□ional □on□ern □han si□e spe□i□.

In June 2007, following a review of the 1988 federal radon guidelines, Health Canada announced a new (non-regulatory) guideline for acceptable levels of radon in indoor air in a residential setting: *"remedial measures should be undertaken in a dwelling whenever the average annual radon concentration exceeds 200 Becquerels per cubic metre (200 Bq/m³) in the normal occupancy area. The higher the radon concentration, the sooner remedial measures should be undertaken. When remedial action is taken, the radon levels should be reduced to a value as low as practicable. The construction of new dwellings should employ techniques that will minimize radon entry and will facilitate post-construction radon removal, should this subsequently prove necessary*."

Heal□ □anada and □he □ederal Pro□in□ial Terri□orial Radia□ion Pro□e□ion □o□ □i□ee (□PTRP□) □or□ed □olla□ora□i□el □o □or□ □he ne□ radon □□ideline, and sin□e 200□4 ha□e also □or□ed □o de□elop a pro□ra□ o□ i□ple□en□a□ion □or □he □□ideline, □nder □he □a□ional Radon Pro□ra□. Se□eral resear□h pro□e□s ha□e □een on□oin□ □o □es□ radon a□ross □he □o□n□r□, and de□elop a radon po□en□ial □appin□ □e□hodolo□□, □hi□h □ill help □o □ar□e□□ore resear□h and ed□□a□ion e□□or□s. The □wo □ear *Cross-Canada Survey of Radon Concentrations in Homes, Final Report* (1□2) *es*□i□a□ed □ha□ □he per□en□a□e o□□anadian ho□es □i□h radon le□els a□o□e □he 200 Bq/m³ □□ideline is 6.9%. The es□i□a□e □or On□ario o□ ho□es e□□eedin□ □he □□ideline □as less, a□ 4.6%. □□r□her s□□dies are on□oin□ □o de□er□ine an□ □orrela□ions □e□□een radon le□els and ho□e □ara□eris□i□s, as □ell as re□ional po□en□ial □appin□. The s□□d□s on□l□sions □nd □ha□no areas o□ □he □o□n□r□ are radon □ree□, and also e□phasi□ed □ha□ □he res□l□s sho□ld no□ □e □sed □o de□er□ine ris□ po□en□ial, as □he onl□ way □o □no□ i□a □□ildin□ has ele□a□ed radon is □o □es□□or i□.

Sili□a

Sili□a (SiO_2) is □he na□e o□a □ro□p o□ □inerals □ha□ are □sed in □he □an□a□□re o□ □lass, □era□i□s, a□rasi□es, □a□er rea□□en□ prod□□s, □os□e□i□s, inse□□ides, pain□, and □oods, as □ell as a dr□in□ a□en□ or preser□a□i□e. □r□s□alline sili□a □a□erials also are □sed in □he prod□□ion o□ □on□re□e or □or□ar-□ased □□ildin□ □a□erials, □e□en□, a□o□s□i□ □eilin□ □iles, and □era□i□ □iles □hi□h are □sed □or □onstr□□ion p□rposes. □o□□on □onstr□□ion sand □on□ains □ree □r□s□alline sili□a and is presen□ in □eilin□ □iles, □on□re□e prod□□s, □or□ar, and brick. D□s□s □on□ainin□ □ore □han 1% □r□s□alline □ree sili□a by □ei□her are □onsidered □o pose a po□en□ial e□pos□re ha□ard. *O. Reg. 490/09* spe□i□ies □he o□□pa□ional e□pos□re li□i□ □or respira□le □r□s□alline sili□a is 0.0□5 □illi□ra□s per cub□ic □e□re (mg/m³) o□ air by □ol□□e as a 4□0-ho□r □ee□ □i□e-□ei□hed a□era□e □or □ris□o□ali□e and rid□□i□e. In □he □ase o□ qu□artz and □ripoli, □he o□□pa□ional e□pos□re li□i□ is 0.1□0 mg/m³ o□ air by □ol□□e. The MOL iss□ed □he Sili□a on □onstr□□ion

Pro e□s □ideline in Sep e□ er 200□. The □idelines in□l□de le□al re□□ire□en□s, healh e□e□s, □on□rol o□ he healh ha□ard, □lassi□a□ion o□ □onsr□□ion opera□ions, and □eas□res and pro□ed□res □or □or□in□ □ih he desi□na□ed s□□s□an□e d□rin□ opera□ions ha□□rea□e sili□a d□s□.

□□□l

□rea □or□aldeh□de □oa□ ins□la□ion □□□□l□is a □her□al ins□la□ion □a□erial ha□is p□□ped in□o in□ers□□al spa□es □e□□een he □alls o□□□ildin□s □here i□ hardens □o □or□ a solid la□er o□ins□la□ion. The sale and ins□alla□ion o□□□□l □as □anned □or healh□rela□ed reasons □e□a□se o□ he □or□a□ion o□ □or□aldeh□de □as, □hi□h is released □ro□ he □□□l □o he □□ildin□ in□erior. The spra□ appli□a□ion o□□□□l □as repor□edl□□sed □e□□een □□□□ and i□s □an in □anada in □□□0. □□□l □as □anned d□e □o de□elopin□ □on□erns o□ he release o□□o□i□ □or□aldeh□de □apor e□i□ed in he □□rin□ pro□ess and □ro□ he □rea□do□n o□old ins□la□ion d□e □o □a□er or □ois□□re da□a□e. Healh □anada has repor□edl□de□er□ined ha□0.□par□s per □illion □pp□ □is a sa□e le□el o□ □or□aldeh□de in a residen□ial □□ildin□. Sensi□i□□ □o his □on□en□ra□ion □a□□ar□ased on indi□id□al a□e and healh.

Appendix C

Chain of Title Records

CHAIN OF TITLE REPORT

Project #: SCT196351
Address: 9015 Stanley Avenue, Niagara Falls
Legal Description: Part lot 3, Con BF Welland River desig. As Parts 1-3, 6-8, 59R7833 except Parts 1 & 3, 59R14106
PIN #: 64444-0251(LT)

Searched at: St. Catharines
LRO #: 59

INSTR #	DOC. TYPE	REG. DATE	PARTY FROM	PARTY TO
	Patent (100 acres)	30 03 1811	Crown	**John BURCH**
1965	Deed	10 05 1811	John Burch	Lanty SHANNON
6403	Deed	14 01 1824	Thadeus Davis, exor. Of the estate of Lanty Shannon	William TERRY
7990	Deed	16 07 1830	William Terry	John DARLING
8393	Deed	22 10 1831	John Darling	David DAVIS
99	Deed (37 acres)	06 02 1866	David Davis	Thomas DAVIS
142	Deed (53 acres)	15 02 1866	David Davis	James CRANE
217	Deed	13 06 1872	James Crane	Andrew SIMPSON
293	Deed	22 05 1873	Thomas Davis	James MCKEOWN

Cont'd on page 2

CHAIN OF TITLE REPORT

Project #:	SCT196351	**Searched at:**	St. Catharines
Address:	9015 Stanley Avenue, Niagara Falls	**LRO #:**	59
Legal Description:	Part lot 3, Con BF Welland River desig. As Parts 1-3, 6-8, 59R7833 except Parts 1 & 3, 59R14106		
PIN #:	64444-0251(LT)		

INSTR #	DOC. TYPE	REG. DATE	PARTY FROM	PARTY TO
2589	Deed	29 09 1903	James McKeown	Benjamin HEWSON
3272	Deed (37 acres)	23 10 1911	Benjamin Hewson	Charles KIEMELE
3963	Deed (53 acres)	18 10 1921	Andrew Simpson	Charles KIEMELE
4576	Deed	20 05 1932	Charles Kiemele	George GLASGOW
4846	Deed	20 08 1934	Charles Kiemele	George GLASGOW
12376A	Deed	19 09 1958	George Glasgow	Andrew HARRIS & Shirley HARRIS
99745A	Deed	23 10 1963	George Glasgow	Samuel DE LORENZO
48760B	Deed	21 07 1966	Samuel De Lorenzo	Border Marine Distributors Ltd.
140724	Deed	14 05 1971	Andrew Harris & Shirley Harris	Welland Securities (1964) Ltd.

Cont'd on page 3

CHAIN OF TITLE REPORT

Project #: SCT196351
Address: 9015 Stanley Avenue, Niagara Falls
Legal Description: Part lot 3, Con BF Welland River desig. As Parts 1-3, 6-8, 59R7833 except Parts 1 & 3, 59R14106
PIN #: 64444-0251(LT)

Searched at: St. Catharines
LRO #: 59

INSTR #	DOC. TYPE	REG. DATE	PARTY FROM	PARTY TO
150773	Deed	15 10 1971	Border Marine Distributors Ltd.	Welland Securities (1964) Ltd.
171514	Deed	01 09 1972	George Glasgow	Welland Securities (1964) Ltd.
RO620107	Deed	05 11 1991	Welland Securities (1964) Ltd.	Marineland of Canada Inc.
LT231145	Deed	12 12 2002	Marineland of Canada Inc.	Marineland of Canada Inc.
SN539038	Deed (Present Owner)	29 12 2017	Marineland of Canada Inc.	**2610832 Ontario Inc.**

PROPERTY DESCRIPTION: PT LT 3 CON BROKEN FRONT WELLAND RIVER WILLOUGHBY PT 1 - 3, 6 - 8, 59R7833 EXCEPT PTS 1 & 3 ON 59R14106; NIAGARA FALLS

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
DIVISION FROM 64444-0065

PIN CREATION DATE:
2010/07/21

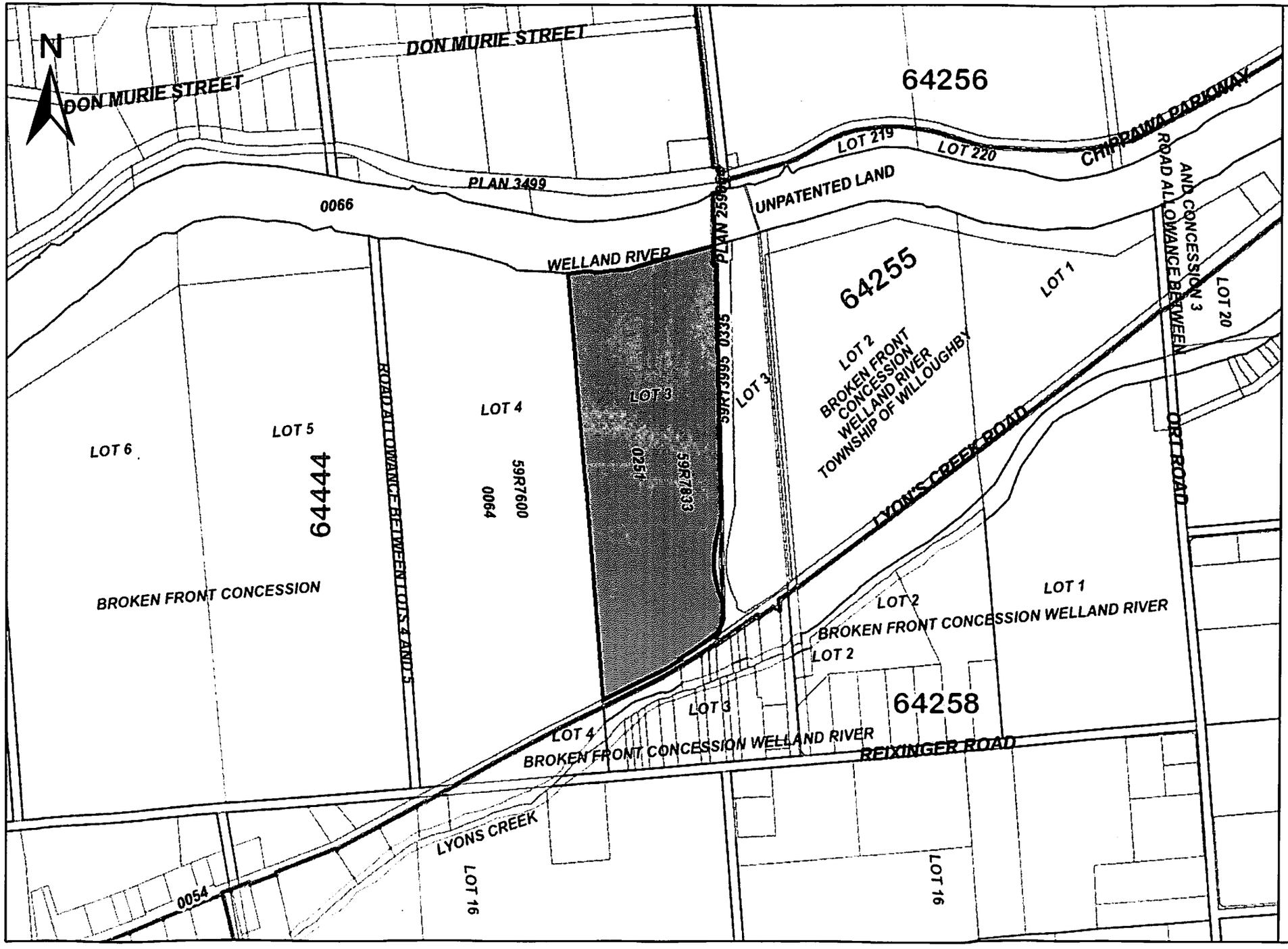
OWNERS' NAMES
2610832 ONTARIO INC.

CAPACITY SHARE
ROWN

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE 2010/07/21 **						
**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: 1999/11/15 **						
AA69374	1962/03/02	BYLAW				C
59R7833	1991/10/21	PLAN REFERENCE				C
LT217206	2002/07/18	CHARGE		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	ROYAL BANK OF CANADA	
LT217207	2002/07/18	CHARGE		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	FALLS MANAGEMENT COMPANY	
LT217208	2002/07/18	CHARGE		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	JOHN HOLER HOLDINGS LIMITED	
LT217856	2002/07/26	TRANSFER OF CHARGE		*** DELETED AGAINST THIS PROPERTY *** FALLS MANAGEMENT COMPANY	THE CANADA TRUST COMPANY	
LT231145	2002/12/12	TRANSFER		*** DELETED AGAINST THIS PROPERTY *** MARINELAND OF CANADA INC.	MARINELAND OF CANADA INC.	

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
SN39213	2004/06/30	TRANSFER OF CHARGE		*** DELETED AGAINST THIS PROPERTY *** THE CANADA TRUST COMPANY	FALLS MANAGEMENT COMPANY	
	REMARKS: LT217207					
SN394488	2013/12/24	DISCH OF CHARGE		*** COMPLETELY DELETED *** FALLS MANAGEMENT COMPANY		
	REMARKS: LT217207.					
SN538669	2017/12/22	DISCH OF CHARGE		*** COMPLETELY DELETED *** ROYAL BANK OF CANADA		
	REMARKS: LT217206.					
SN538935	2017/12/28	DISCH OF CHARGE		*** COMPLETELY DELETED *** JOHN HOLER HOLDINGS LIMITED		
	REMARKS: LT217208.					
SN539038	2017/12/29	TRANSFER	$22,000,000	MARINELAND OF CANADA INC.	2610832 ONTARIO INC.	C
	REMARKS: PLANNING ACT STATEMENTS.					
SN539039	2017/12/29	APL ANNEX REST COV		MARINELAND OF CANADA INC.		C
	REMARKS: NO EXPIRY					



ServiceOntario

PRINTED ON 19 MAR, 2020 AT 10:14:06
FOR BERTUCCI1

SCALE

0 90 180 270 360 450 meters

PROPERTY INDEX MAP

NIAGARA SOUTH(No. 59)

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

Appendix D

Regulatory Correspondence and Interviews

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P.O. □o□ □023
□ia□ara □alls, On□ario
L2E □□□

A□en□ion□ Mr. Ale□ Herlo□i□□h – Dep□□□ Dire□□or o□ Plannin□ and De□elop□en□

Re: Phase I/One Environmental Site Assessment
9015 Stanley Ave
Niagara Falls, ON

Dear Mr. Herlo□i□□h□

□ e ha□e □een re□ained □o □nder□a□e a Phase One En□iron□en□al Si□e Assess□en□on □he a□o□e re□eren□ed proper□□. As s□□h, □e □o□ld appre□ia□e a re□ie□ o□ □o□r □iles re□ardin□ an□ en□iron□en□al □on□erns asso□ia□ed □i□h i□, or □he s□rro□ndin□ lands.

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Re□ards,

Wood Environment and Infrastructure Solutions

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January 24, 2019

Mr. Cameron McCann
Wood Environment and Infrastructure Solutions
3300 Merrittville Hwy Unit 5
Thorold, ON L2V 4Y6

Dear Mr. McCann:

Re: 9015 Stanley Avenue
Niagara Falls, Ontario

The following information has been compiled in response to your request regarding possible environmental constraints for the above noted lands.

Our environmental review is based on data contained in the Niagara Falls Environmental Inventory. The Inventory is comprised of information regarding locations of past manufacturing, current manufacturing, salvage yards, effluent sites, air emissions sites, closed and/or existing service stations, and/or private fuel dispensers, PCB storage, closed and/or existing landfill sites, and dry cleaning establishments and propane storage sites.

The attached map identifies the following potential pollution sources within 500 m radius of 9015 Stanley Avenue. *(2) two past manufacturing; (2) two current manufacturing; and (2) two air emissions.*

The data is provided "as is" and the City of Niagara Falls (the City) makes no representations or warranties express or implied, as to the accuracy or completeness of the data. The maps and drawings contained herein are intended for general layout purposes only and shall not be considered as official plans or drawings. For further information, please contact the City. The City shall not be held liable for special, incidental, consequential or indirect damages arising from the use of this data. Users assume all risks in using this data.

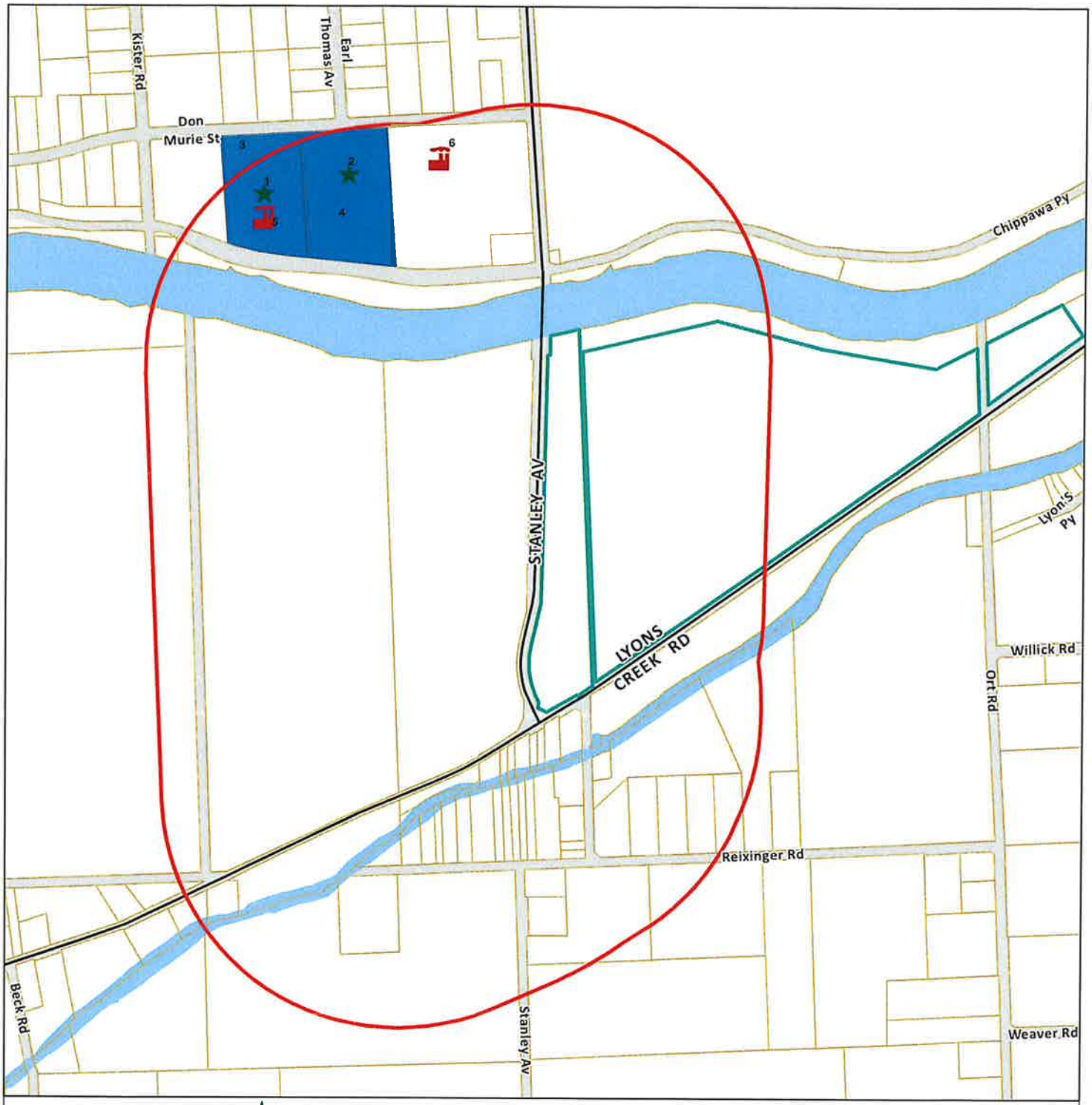
If you have any questions, or wish to review the municipal database, please contact Peggy Boyle, of the Planning division at ext. 4334.

Yours truly,

John Barnsley, MCIP, RPP
Manager of Policy Planning

PB:cr
Attach.
S:\ENVIRO\Potential Pollution\EREQ_LTR\2018\9015 Stanley Ave.docx

Planning, Building, & Development
Ext 4247 Fax 905-356-2354
barnsley@niagarafalls.ca



★ **Air Emissions**

1 H & L Tool And Die Ltd 5955 Don Murie St

2 Edscha Of Canada Ltd 5795 Don Murie St

Current Manufacturing

3 H & L Tool And Die Ltd 5955 Don Murie St

4 Edscha Of Canada Ltd 5795 Don Murie St

Past Manufacturing

5 Lomak Plastics Mfg Inc 5955 Don Murie St

6 Oneida Canada Ltd 8699 Stanley Av

59R7833 PTS 01-03,07,08, PT PT 06

0 50 100 Meters

NiagaraFalls

Potential Pollution Sources
9015 Stanley Avenue
City of Niagara Falls, Ontario

N

Figure 1

Planning & Development

Date: January 2019 | Dawn by: DK | File: K:\GIS_Requests\2018\Schedule\Enviro\9015_StanleyAv.mxd

Public Works
Water & Wastewater Services
3501 Schmon Pkwy., PO Box 1042, Thorold, ON L2V 4T7
Telephone: 905-980-6000 Toll-free: 1-800-263-7215 Fax: 905-685-5205
www.niagararegion.ca

Environmental Record Search

Date of Report: Monday, January 21, 2019

Subject Property: 9015 Stanley Ave Niagara Falls

Water and Wastewater Services Search Completed By:		
Full name: CRAIG BURNS, EEO	Department: Public Works	Division: W&WW
Email: craig.burns@niagararegion.ca	Phone: 905 685-4225	Extension: 3309

Search Type: Any documentation related to environmental concerns, orders, spills, inspections or permits pertaining to the subject property.

Files searched (E.05):

NIAGARA FALLS MISC FILES	1991 - Present
ACTION REQUEST/VIOLATION NOTICE	1985 - Present
INCIDENT REPORTS	2001 - Present

Results of Search: <u>No documentation has been found that references the subject property</u>.

Comments:
Disclaimer: The files searched were limited to those shown above. Niagara Region makes no representation as to compliance or non-compliance with any other legislation resulting from this disclosure.

Ministry of the Environment, Conservation and Parks

Access and 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, de la Protection de la nature et des Parcs

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

January 25, 2019

Cameron McCann
Wood Environment & Infrastructure Solutions
3300 Merrittville Hwy, Unit 5
Thorold, ON L2V 4Y6

Dear Cameron McCann:

RE: ***Freedom of Information and Protection of Privacy Act* Request**
Our File # A-2019-00526, Your Reference TG181134

The Ministry is in receipt of your request made pursuant to the *Freedom of Information and Protection of Privacy Act* and has received your payment in the amount of $5.00 (non-refundable application fee), along with your $30.00 deposit.

The search is being conducted on the following: 9015 Stanley Avenue, Niagara Falls. If there is any discrepancy please contact us immediately.

You may expect a reply or additional communication as your request is processed. For your information, the Ministry charges for search, copying and preparation time.

If you have any questions regarding this matter, please contact Rebeka Bogdan at Rebeka.Bogdan@ontario.ca.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

Ministry of the Environment, Conservation and Parks

Access and 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, de la Protection de la nature et des Parcs

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

Ontario

February 5, 2019

Cameron McCann
Wood Environment & Infrastructure Solutions
3300 Merrittville Hwy, Unit 5
Thorold, ON L2V 4Y6

Dear Cameron McCann:

RE: *Freedom of Information and Protection of Privacy Act* Request
Our File #: A-2019-00526, Your Reference #: TG181134

This letter is in response to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 9015 Stanley Avenue, Niagara Falls.

After a thorough search of the Ministry's Niagara District Office, West Central Region, Investigations and Enforcement Branch, Environmental Assessment and Permissions Branch, Environmental Monitoring and Reporting Branch, Sector Compliance Branch and Safe Drinking Water Branch, records were located in response to your request. It is my preliminary decision to provide partial access to the information as the identity of complainants will be removed to protect privacy (Section 21(1)(f) of the Act).

In accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, the estimated fee is:

• Search Time 1 hour @ $30/hour	$30.00
• CD	10.00
• Preparation Time approx. 0.21 hour @ $30/hour	6.30
• Delivery	3.00
• **Total**	**$49.30**
• Deposit Received	- 30.00
• **Balance Due**	**$19.30**

Due to the volume, the records will be provided to you electronically on a CD. The Ministry has relied on Order PO-3621 by the Office of the Information and Privacy Commission (IPC) in order to calculate the estimated fees. Order PO-3621 states that the Ministry may charge a preparation fee of $30.00 per hour for every 1,200 pages of scanned records. The breakdown of the approximate preparation fee is as follows: an estimated 0.21 hours to convert approximately 248 pages to electronic format. Please note, that upon completion of the Ministry's review, additional preparation charges may be applied to account for any severances made to the records in accordance with the exemptions under the Act. These severances will be charged at a rate of $30.00 per hour, calculated at a rate of two minutes per page.

In order to receive a copy of the records please forward this amount to our office. You may pay by money order or cheque (made payable to the "Minister of Finance (FOI)") or by credit card. Credit card forms are available on the Ministry's website http://www.ontario.ca/environment-and-energy/freedom-information-request-form. Please do not mail cash.

If payment has not been received within 45 days this file will be closed. When remitting payment, please quote our file number or attach a copy of this letter.

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 Sharon Menzies at (416) 327-1429.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

Wolowidnek, Tracy

From: Public Information Services <publicinformationservices@tssa.org>
Sent: Friday, January 04, 2019 12:49 PM
To: Mccann, Cameron
Subject: Re: Database Search for TG181134 (No Record)

Hello,

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 complete our release of public information form found at https://www.tssa.org/en/about-tssa/release-of-public-information.aspx?_mid_=392 and email the completed form to 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 great day,

Roxana

From: Mccann, Cameron <cameron.mccann@woodplc.com>
Sent: January 4, 2019 10:06 AM
To: Public Information Services <publicinformationservices@tssa.org>
Subject: Database Search for TG181134

Hello,

I'm emailing to ask if you could please conduct a search for the following addresses for ASTs, USTs, environmental records and spills, etc?

The following addresses are in Niagara Falls, Ontario

8970 Stanley Avenue
9015 Stanley Avenue
8699 Stanley Avenue

5795 Don Murie Street
5955 Don Murie Street

7001 Reixinger Road
7573 Reixinger Road

4527 Chippawa Parkway
5511 Chippawa Parkway
5571 Chippawa Parkway

Thanks,

Wolowidnek, Tracy

From: Jim Sorley <jim.sorley@npei.ca>
Sent: Thursday, January 31, 2019 1:20 PM
To: Wolowidnek, Tracy
Subject: RE: 9015 Stanley Avenue

Hi Tracy,

Both units are PCB free. Unit #800604 was manufactured in 2006 and Unit #800406 was manufactured in 1997.

Regards,

Niagara Peninsula Energy Inc.

Jim Sorley, C.E.T.
Engineering Services Manager

Office - 1-877-270-3938 ex.6224
Mobile - 905-327-1782
Fax - 905-356-2831
email - jim.sorley@npei.ca

From: Wolowidnek, Tracy [mailto:tracy.wolowidnek@woodplc.com]
Sent: Tuesday, January 29, 2019 4:33 PM
To: Jim Sorley
Subject: 9015 Stanley Avenue

Hi Jim,

For the purposes of an Environmental Site Assessment, are you able to advise on the installation date and PCB-status of the 2 transformers present at Oaklands Campground at 9015 Stanley Avenue, in Niagara Falls? These transformers are #s 800604 and 800406, as shown in the photo below.

Thank you,

Tracy Wolowidnek
Environmental Scientist
3300 Merrittville Highway, Unit 5
Thorold, Ontario L2V 4Y6
Office: (905) 687-6616
Mobile: (905) 380-3699
Email: tracy.wolowidnek@woodplc.com
www.woodplc.com

wood.

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wood.

RECORD OF INTERVIEW – PROJECT # SCT196351

Purpose of Interview (PI ESA / Due Diligence ESA)	Phase One ESA		
Date of Interview	April 2, 2020	**Format (phone / meeting)**	
Site Address	9015 Stanley Avenue, Niagara Falls		
Interviewee & Affiliation & Contact Number	Mr. Ralph Terrio		
Wood Interviewer / Office Location	Braedan Huras		

SITE INFORMATION

1) Describe land use history. Was the property ever used for industrial use, dry cleaning, a garage or bulk liquid dispensing facility, including a gasoline outlet?

Campground.

No it was NOT used for the usages listed above.

2) Are you aware of any environmental issues associated with the subject property such as waste disposal, landfilling, chemical use and / or storage (including spills), above or underground storage tanks, MOE orders, etc.? (obtain details) Yes (No)

3) Are you aware of any environmental building management issues such as asbestos containing materials, PCBs in electrical equipment, odour, mould, indoor air quality, UFFI, ODSs, lead-based paints, etc.? (obtain details) Yes (No)

4) Are you aware of any site-specific permits, waste generator number(s), certificates of approval, water well records or sewer use / discharge permits? Yes (No)

5) Are you aware of any current or historical environmental concerns associated with adjacent properties? (obtain details)
Yes (No)

6) Are you aware of any previous environmental investigations, inspections, audits or reports (e.g., environmental assessment and remediation, tank removals, asbestos or mould surveys) for the subject property or adjacent properties? Yes (No)

7) Is there anyone else Wood should contact for additional environmental information? (name, title, phone no.) Yes (No)

Are additional pages attached: Yes/(No), If so how many?___

Appendix E

ERIS Report

ENVIRONMENTAL RISK INFORMATION SERVICES

DATABASE REPORT

Project Property:	*Phase One ESA* *8970 Stanley Avenue* *Niagara Falls ON L2E 6X8*
Project No:	*TG181134*
Report Type:	*Quote - Custom-Build Your Own Report*
Order No:	*20180627025*
Requested by:	*Wood Environment & Infrastructure Solutions, Inc.*
Date Completed:	*December 14, 2018*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

Table of Contents

Executive Summary

Property Information:

Project Property: *Phase One ESA*
8970 Stanley Avenue Niagara Falls ON L2E 6X8

Project No: *TG181134*

Order Information:

Order No: *20180627025*
Date Requested: *June 27, 2018*
Requested by: *Wood Environment & Infrastructure Solutions, Inc.*
Report Type: *Quote - Custom-Build Your Own Report*

Historical/Products:

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.25km	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	0	0
AUWR	Automobile Wrecking & Supplies	Y	0	0	0
BORE	Borehole	Y	0	12	12
CA	Certificates of Approval	Y	0	2	2
CFOT	Commercial Fuel Oil Tanks	Y	0	0	0
CHEM	Chemical Register	Y	0	0	0
CNG	Compressed Natural Gas Stations	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
DRYCLEANERS	Dry Cleaning Facilities	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	1	4	5
EEM	Environmental Effects Monitoring	Y	0	0	0
EHS	ERIS Historical Searches	Y	0	0	0
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	1	0	1
GHG	Greenhouse Gas Emissions from Large Facilities	Y	0	0	0
HINC	TSSA Historic Incidents	Y	0	0	0
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0	0	0
INC	TSSA Incidents	Y	0	1	1
LIMO	Landfill Inventory Management Ontario	Y	0	0	0
MINE	Canadian Mine Locations	Y	0	0	0
MISA PENALTY	Environmental Penalty Annual Report	Y	0	0	0

Database	Name	Searched	Project Property	Boundary to 0.25km	Total
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
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
NEBI	National Energy Board Pipeline Incidents	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	1	1
PRT	Private and Retail Fuel Storage Tanks	Y	0	0	0
PTTW	Permit to Take Water	Y	1	0	1
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	0	0
SPL	Ontario Spills	Y	0	2	2
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	0	0
WWIS	Water Well Information System	Y	0	2	2
	Total:		3	24	27

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev diff (m)	Page Number
1	GEN	1019455 ONTARIO INC., O/A	8970 STANLEY AVE. SOUTH NIAGARA FALLS ON L2G 6X8	-/0.0	-12.86	16
1	PTTW	Oakland Golf Club (1019455 Ontario Inc.)	8970 Stanley Ave. South, Lot 30W, Plan 239 CITY OF NIAGARA FALLS ON	-/0.0	-12.86	16
2	ECA	Marineland of Canada Inc.	9015 Stanley Ave Niagara Falls ON L2E 6X8	-/0.0	-22.70	16

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
3	ECA	Queensway Chippawa Props. Inc.	Ref Plan 24T-94009 Niagara Falls ON L4K 4R1	E/12.8	-69.99	17
3	ECA	Queensway Chippawa Props. Inc.	Ref Plan 24T-94009 Niagara Falls ON L4K 4R1	E/12.8	-69.99	17
4	BORE		ON	ENE/25.2	-74.12	17
5	ECA	The Corporation of the City of Niagara Falls	Stanley Avenue and Lyons Creek Rd Niagara Falls ON L2E 2L1	SSW/54.0	-61.63	18
6	BORE		ON	ENE/68.7	-68.80	18
7	BORE		ON	ENE/72.7	-75.37	18
8	BORE		ON	ENE/114.6	-52.64	19
9	BORE		ON	ENE/124.4	-71.10	20
10	WWIS		lot 3 ON ***Well ID:*** 6602251	SSW/138.2	-16.69	20
11	BORE		ON	ENE/141.9	-48.23	22
12	BORE		ON	ENE/151.5	-55.50	23
13	BORE		ON	NE/154.7	-46.76	23

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
14	BORE		ON	NNE/156.6	-32.74	24
15	PINC		4540 Lyons Pkwy, Niagara Falls ON	ENE/157.3	-33.47	24
16	BORE		ON	ENE/161.7	-40.82	25
17	CA	NIAGARA FALLS CITY	LYONS PKWAY/LYONS CREEK RD. NIAGARA FALLS ON	ENE/190.4	-41.95	25
17	CA	NIAGARA FALLS CITY	LYONS PKWAY/LYONS CREEK RD. NIAGARA FALLS ON	ENE/190.4	-41.95	25
18	SPL	Enbridge Gas Distribution Inc.	4540 Lions Pkwy, Chippawa Niagara Falls ON	ENE/191.0	-37.14	26
19	WWIS		lot 317 NIAGARA FALL ON ***Well ID:*** 6604765	NW/208.3	-14.19	26
20	BORE		ON	NE/233.0	-49.60	28
21	BORE		ON	NNE/242.3	-11.22	29
22	ECA	The Corporation of the City of Niagara Falls	Niagara Falls ON	ENE/242.4	-23.83	29
23	INC		5789 LYONS CREEK ROAD, NIAGARA FALLS ON	WSW/250.0	-18.91	30
23	SPL		5789 Lyons Creek Road Niagara Falls ON	WSW/250.0	-18.91	31

Executive Summary: Summary By Data Source

BORE - Borehole

A search of the BORE database, dated 1875-Jul 2014 has found that there are 12 BORE site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	ON	25.2	4
	ON	68.7	6
	ON	72.7	7
	ON	114.6	8
	ON	124.4	9
	ON	141.9	11
	ON	151.5	12
	ON	154.7	13
	ON	156.6	14

Site	Address	Distance (m)	Map Key
	ON	161.7	16
	ON	233.0	20
	ON	242.3	21

CA - Certificates of Approval

A search of the CA database, dated 1985-Oct 30, 2011* has found that there are 2 CA site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
NIAGARA FALLS CITY	LYONS PKWAY/LYONS CREEK RD. NIAGARA FALLS ON	190.4	17
NIAGARA FALLS CITY	LYONS PKWAY/LYONS CREEK RD. NIAGARA FALLS ON	190.4	17

ECA - Environmental Compliance Approval

A search of the ECA database, dated Oct 2011-Oct 31, 2018 has found that there are 5 ECA site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
Marineland of Canada Inc.	9015 Stanley Ave Niagara Falls ON L2E 6X8	0.0	2
Queensway Chippawa Props. Inc.	Ref Plan 24T-94009 Niagara Falls ON L4K 4R1	12.8	3
Queensway Chippawa Props. Inc.	Ref Plan 24T-94009 Niagara Falls ON L4K 4R1	12.8	3

Site	Address	Distance (m)	Map Key
The Corporation of the City of Niagara Falls	Stanley Avenue and Lyons Creek Rd Niagara Falls ON L2E 2L1	54.0	5
The Corporation of the City of Niagara Falls	Niagara Falls ON	242.4	22

GEN - Ontario Regulation 347 Waste Generators Summary

A search of the GEN database, dated 1986-June 30, 2018 has found that there are 1 GEN site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
1019455 ONTARIO INC., O/A	8970 STANLEY AVE. SOUTH NIAGARA FALLS ON L2G 6X8	0.0	1

INC - TSSA Incidents

A search of the INC database, dated Feb 28, 2017 has found that there are 1 INC site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	5789 LYONS CREEK ROAD, NIAGARA FALLS ON	250.0	23

PINC - TSSA Pipeline Incidents

A search of the PINC database, dated Feb 28, 2017 has found that there are 1 PINC site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	4540 Lyons Pkwy, Niagara Falls ON	157.3	15

PTTW - Permit to Take Water

A search of the PTTW database, dated 1994-Oct 31, 2018 has found that there are 1 PTTW site(s) within approximately 0.25

kilometers of the project property.

Site	Address	Distance (m)	Map Key
Oakland Golf Club (1019455 Ontario Inc.)	8970 Stanley Ave. South, Lot 30W, Plan 239 CITY OF NIAGARA FALLS ON	0.0	1

SPL - Ontario Spills

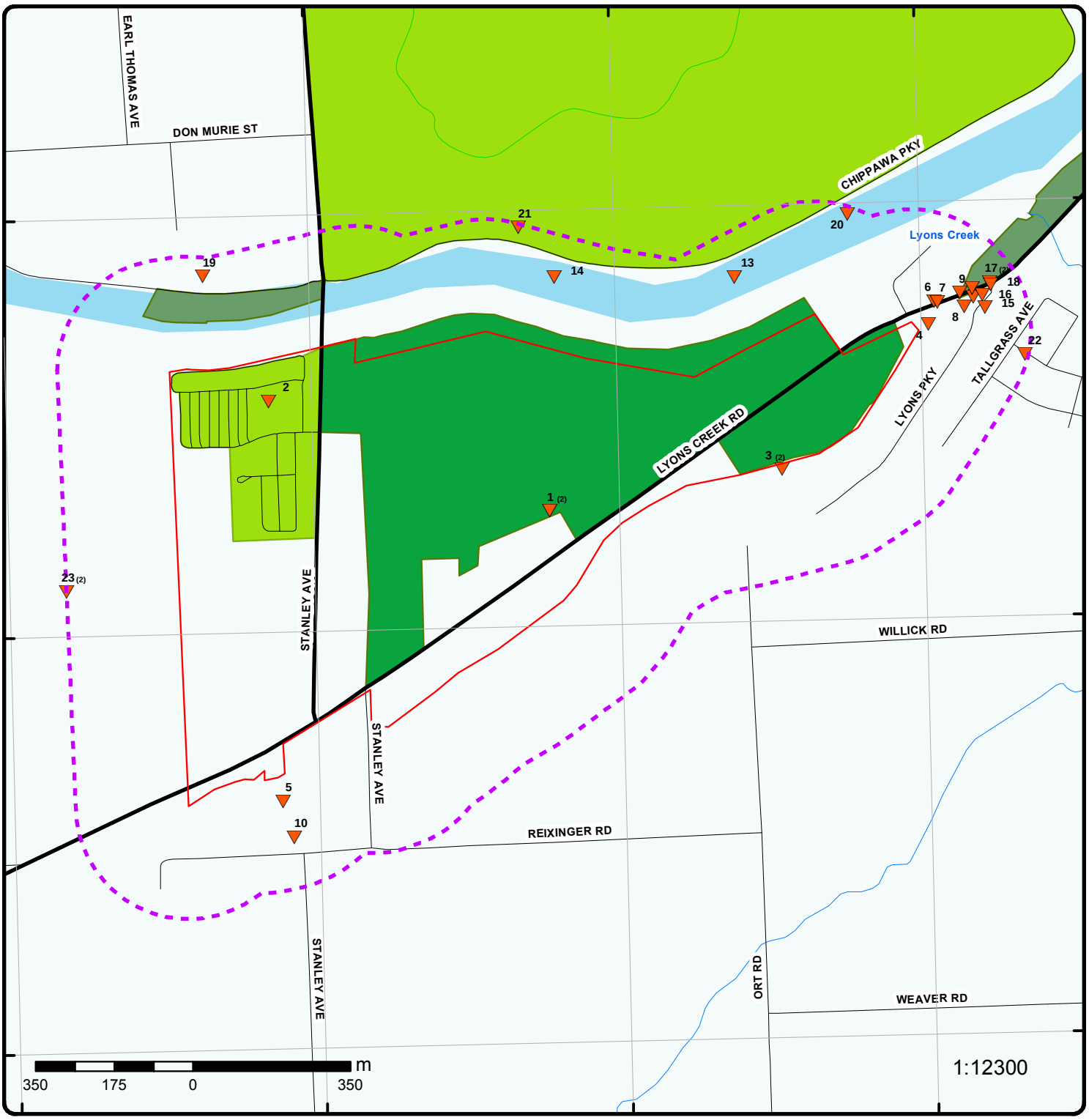
A search of the SPL database, dated 1988-Jul 2018 has found that there are 2 SPL site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
Enbridge Gas Distribution Inc.	4540 Lions Pkwy, Chippawa Niagara Falls ON	191.0	18
	5789 Lyons Creek Road Niagara Falls ON	250.0	23

WWIS - Water Well Information System

A search of the WWIS database, dated Dec 31, 2017 has found that there are 2 WWIS site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	lot 3 ON ***Well ID:*** 6602251	138.2	10
	lot 317 NIAGARA FALL ON ***Well ID:*** 6604765	208.3	19



Map : 0.25 Kilometer Radius

Order No: 20180627025

Address: 8970 Stanley Avenue, Niagara Falls, ON, L2E 6X8

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES

- 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
- National Park
- Provincial or Territorial Park
- Other Park
- Golf Course or Driving Range
- Park or Sports Field
- Other Recreation Area

79°4'30"W

43°3'N

43°3'N

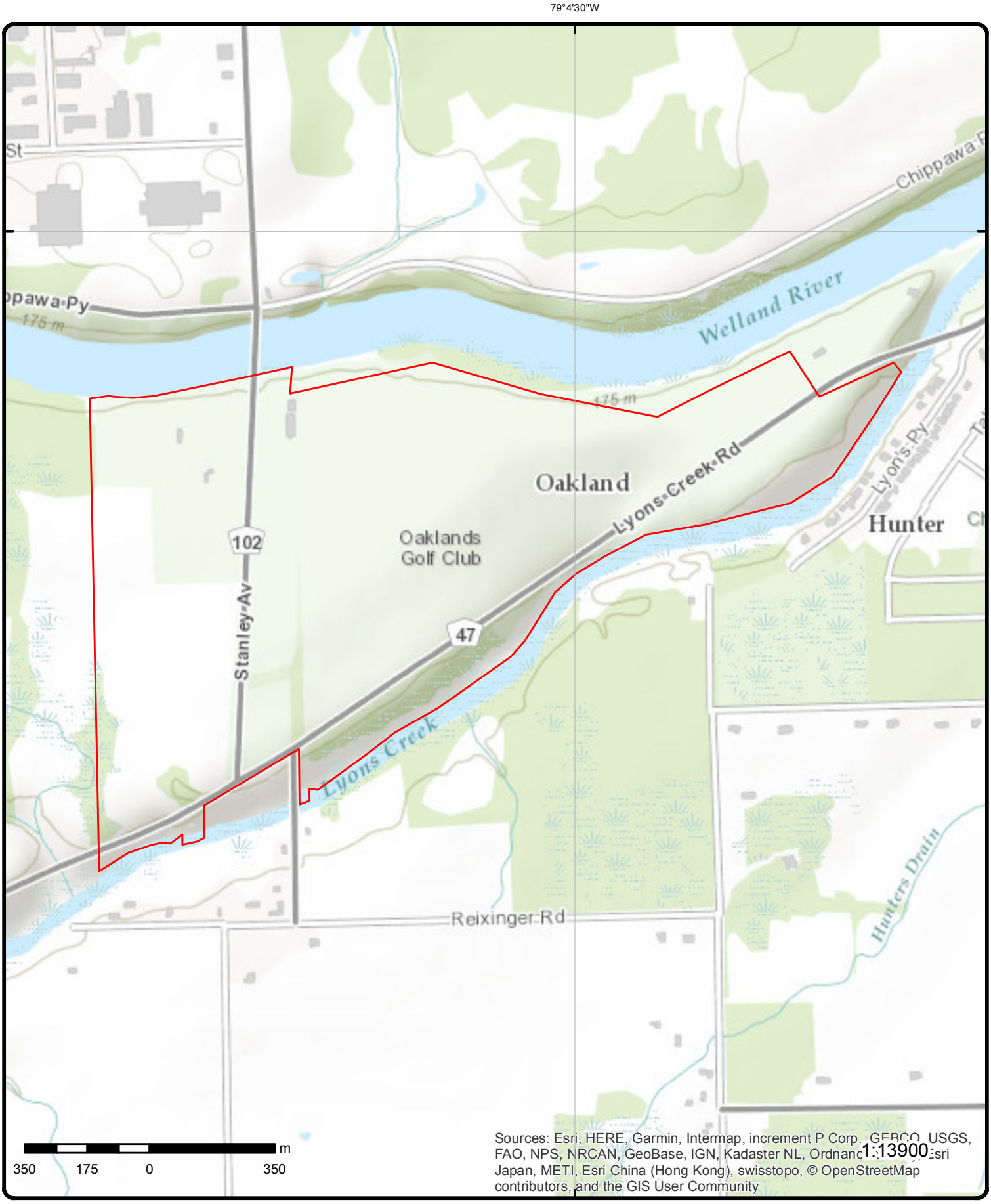
Aerial (2017)

Address: 8970 Stanley Avenue, Niagara Falls, ON, L2E 6X8

Source: ESRI World Imagery

Order No: 20180627025

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES



Topographic Map

Address: 8970 Stanley Avenue, Niagara Falls, ON, L2E 6X8

Source: ESRI World Topographic Map

Order No: 20180627025

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES

Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	1 of 2	-/0.0	177.8 / -12.86	1019455 ONTARIO INC., O/A 8970 STANLEY AVE. SOUTH NIAGARA FALLS ON L2G 6X8	GEN

Generator No.: ON2686400
Status:
Approval Years: 01
Contam. Facility:
MHSW Facility:
SIC Code: 9999
SIC Description: OTHER SERVICES

PO Box No.:
Country:
Choice of Contact:
Co Admin:
Phone No. Admin:

--Details--
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	2 of 2	-/0.0	177.8 / -12.86	Oakland Golf Club (1019455 Ontario Inc.) 8970 Stanley Ave. South, Lot 30W, Plan 239 CITY OF NIAGARA FALLS ON	PTTW

EBR Registry No.: IA9E0750
Ministry Ref. No.: 23007259
Notice Type: Instrument Decision
Company Name: Oakland Golf Club (1019455 Ontario Inc.)
Proponent Name:
Proposal Address: 8970 Stanley Avenue South, Niagara Falls Ontario, L2E 6X8
Instrument Type: (OWRA s. 34) - Permit to Take Water
Location Other:
URL:

Proposal Date: June 22, 1999
Notice Date: September 06, 2001
Year: 1999

Location:

8970 Stanley Ave. South, Lot 30W, Plan 239 CITY OF NIAGARA FALLS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
2	1 of 1	-/0.0	167.9 / -22.70	Marineland of Canada Inc. 9015 Stanley Ave Niagara Falls ON L2E 6X8	ECA

Approval No: 1107-9LGMSR
Approval Date: 2014-09-10
Status: Approved
Record Type: ECA
Link Source: IDS
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Address: 9015 Stanley Ave
Full Address:
Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/4595-9H3LDZ-14.pdf

SWP Area Name:
MOE District:
City: Niagara Falls
Longitude:
Latitude:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
3	1 of 2	E/12.8	120.6 / -69.99	Queensway Chippawa Props. Inc. Ref Plan 24T-94009 Niagara Falls ON L4K 4R1	ECA

Approval No: 0450-A4YQ94
Approval Date: 2015-12-08
Status: Approved
Record Type: ECA
Link Source: IDS
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Address: Ref Plan 24T-94009
Full Address:
Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/0952-A4JTV7-14.pdf

SWP Area Name: Niagara Peninsula
MOE District: Niagara
City: Niagara Falls
Longitude: -79.0706
Latitude: 43.0447

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
3	2 of 2	E/12.8	120.6 / -69.99	Queensway Chippawa Props. Inc. Ref Plan 24T-94009 Niagara Falls ON L4K 4R1	ECA

Approval No: 6185-ASWT8K
Approval Date: 2017-11-14
Status: Approved
Record Type: ECA
Link Source: IDS
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Address: Ref Plan 24T-94009
Full Address:
Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/6241-AS2JNS-14.pdf

SWP Area Name: Niagara Peninsula
MOE District: Niagara
City: Niagara Falls
Longitude: -79.0706
Latitude: 43.0447

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
4	1 of 1	ENE/25.2	116.5 / -74.12	ON	BORE

Borehole ID: 606784
Use: Geotechnical/Geological Investigation
Drill Method: Power auger
Easting: 657475
Location Accuracy:
Elev. Reliability Note:
Total Depth m: -999
Township:
Lot:
Completion Date: OCT-1966
Primary Water Use: Not Used

Type: Borehole
Status:
UTM Zone: 17
Northing: 4767907
Orig. Ground Elev m: 173
DEM Ground Elev m: 143
Primary Name:
Concession:
Municipality:
Static Water Level: .2
Sec. Water Use:

--Details--

Stratum ID: 218375940
Bottom Depth(m): 1.0
Top Depth(m): 0.0
Stratum Desc: FILL,STONES,GRAVEL. STIFF.

Stratum ID: 218375941
Bottom Depth(m): 2.4
Top Depth(m): 1.0
Stratum Desc: FILL,SILT,CLAY,SAND.BROWN,FIRM, WATER STABLE AT 567.6 FEET.

Stratum ID: 218375942
Bottom Depth(m): 2.7
Top Depth(m): 2.4
Stratum Desc: SILT,CLAY,ORGANIC. GREY,VERY STIFF.

Stratum ID: 218375943
Bottom Depth(m): 3.8
Top Depth(m): 2.7
Stratum Desc: PEAT. SOFT.

Stratum ID: 218375944
Top Depth(m): 3.8

Bottom Depth(m):	10.6	**Stratum Desc:**	CLAY(52),SILT(44), GRAVEL(04). VARI-COLOURED,SOFT.
Stratum ID:	218375945	**Top Depth(m):**	10.6
Bottom Depth(m):	14.0	**Stratum Desc:**	SILT. BROWN,FIRM.
Stratum ID:	218375946	**Top Depth(m):**	14.0
Bottom Depth(m):	14.9	**Stratum Desc:**	TILL,CLAY,GRAVEL. BROWN,GLACIAL,HARD, AGE GLACIAL.
Stratum ID:	218375947	**Top Depth(m):**	14.9
Bottom Depth(m):	15.5	**Stratum Desc:**	SHALE. BROKEN.
Stratum ID:	218375948	**Top Depth(m):**	15.5
Bottom Depth(m):		**Stratum Desc:**	BEDROCK,DOLOMITE. 021 040 038 018035040 025 01

5 **1 of 1** **SSW/54.0** **129.0 / -61.63** **The Corporation of the City of Niagara Falls**
Stanley Avenue and Lyons Creek Rd
Niagara Falls ON L2E 2L1 **ECA**

Approval No:	6061-7U6RTR	**SWP Area Name:**	Niagara Peninsula
Approval Date:	2009-07-23	**MOE District:**	Niagara
Status:	Approved	**City:**	
Record Type:	ECA	**Longitude:**	-79.0844
Link Source:	IDS	**Latitude:**	43.0383
Approval Type:	ECA-Municipal Drinking Water Systems		
Project Type:	Municipal Drinking Water Systems		
Address:	Stanley Avenue and Lyons Creek Rd		
Full Address:			
Full PDF Link:			

6 **1 of 1** **ENE/68.7** **121.8 / -68.80** **ON** **BORE**

Borehole ID:	857773	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	Decommissioned
Drill Method:	Hollow stem auger	**UTM Zone:**	17
Easting:	657488	**Northing:**	4767959
Location Accuracy:		**Orig. Ground Elev m:**	-999.9
Elev. Reliability Note:		**DEM Ground Elev m:**	145
Total Depth m:	3.7	**Primary Name:**	
Township:	WILLOUGHBY	**Concession:**	CON 3
Lot:	0	**Municipality:**	
Completion Date:	12-JAN-1967	**Static Water Level:**	-999.9
Primary Water Use:		**Sec. Water Use:**	

--Details--

Stratum ID:	220433423	**Top Depth(m):**	0.0
Bottom Depth(m):	0.9	**Stratum Desc:**	Reddish brown clayey and stoney mixed fill
Stratum ID:	220433424	**Top Depth(m):**	0.9
Bottom Depth(m):	2.3	**Stratum Desc:**	Grey-black or brown silty clay with sand peat. Bouncing
Stratum ID:	220433425	**Top Depth(m):**	2.3
Bottom Depth(m):	3.7	**Stratum Desc:**	Reddish brown silty clay.

7 **1 of 1** **ENE/72.7** **115.2 / -75.37** **ON** **BORE**

Borehole ID: 606785 **Type:** Borehole
Use: Geotechnical/Geological Investigation **Status:**
Drill Method: Power auger **UTM Zone:** 17
Easting: 657495 **Northing:** 4767957
Location Accuracy: **Orig. Ground Elev m:** 172
Elev. Reliability Note: **DEM Ground Elev m:** 140
Total Depth m: 3.7 **Primary Name:**
Township: **Concession:**
Lot: **Municipality:**
Completion Date: OCT-1966 **Static Water Level:** .1
Primary Water Use: Not Used **Sec. Water Use:**

--Details--

Stratum ID: 218375949 **Top Depth(m):** 0.0
Bottom Depth(m): 1.2 **Stratum Desc:** FILL,STONES,CLAY. BROWN,STIFF.

Stratum ID: 218375950 **Top Depth(m):** 1.2
Bottom Depth(m): 2.7 **Stratum Desc:** CLAY,SILT,PEAT. BLACK,SOFT, WATER STABLE AT 564.8 FEET.

Stratum ID: 218375951 **Top Depth(m):** 2.7
Bottom Depth(m): 3.7 **Stratum Desc:** CLAY,SILT. BROWN,VERY SOFT. 060 0000001400040002LT(44), G

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8 ***1 of 1*** ***ENE/114.6*** ***138.0 / -52.64*** ***ON*** ***BORE***

Borehole ID: 606783 **Type:** Borehole
Use: Geotechnical/Geological Investigation **Status:**
Drill Method: Power auger **UTM Zone:** 17
Easting: 657555 **Northing:** 4767947
Location Accuracy: **Orig. Ground Elev m:** 173
Elev. Reliability Note: **DEM Ground Elev m:** 167
Total Depth m: 18.7 **Primary Name:**
Township: **Concession:**
Lot: **Municipality:**
Completion Date: OCT-1966 **Static Water Level:** .2
Primary Water Use: Not Used **Sec. Water Use:**

--Details--

Stratum ID: 218375932 **Top Depth(m):** 0.0
Bottom Depth(m): 0.1 **Stratum Desc:** SOIL,UNSPECIFIED.

Stratum ID: 218375933 **Top Depth(m):** 0.1
Bottom Depth(m): 0.9 **Stratum Desc:** FILL. VERY SOFT,GRANULAR.

Stratum ID: 218375934 **Top Depth(m):** 0.9
Bottom Depth(m): 2.1 **Stratum Desc:** FILL,CLAY,SILT,SAND.BROWN,FIRM, WATER STABLE AT 567.4 FEET.

Stratum ID: 218375935 **Top Depth(m):** 2.1
Bottom Depth(m): 3.0 **Stratum Desc:** CLAY,PEAT,SILT. GREY,SOFT.

Stratum ID: 218375936 **Top Depth(m):** 3.0
Bottom Depth(m): 13.7 **Stratum Desc:** SILT(64),CLAY(29), GRAVEL(07). VARI-COLOURED,FIRM.

Stratum ID: 218375937 **Top Depth(m):** 13.7
Bottom Depth(m): 15.5 **Stratum Desc:** SILT. BROWN,STIFF.

Stratum ID: 218375938 **Top Depth(m):** 15.5
Bottom Depth(m): 16.6 **Stratum Desc:** TILL,CLAY,GRAVEL. BROWN,GLACIAL.

Stratum ID: 218375939 **Top Depth(m):** 16.6
Bottom Depth(m): 18.7 **Stratum Desc:** BEDROCK,DOLOMITE. 033 030 016025030 020 028 000030260

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9 *1 of 1* *ENE/124.4* *119.5 / -71.10* *ON* **BORE**

Borehole ID: 857772 **Type:** Borehole
Use: Geotechnical/Geological Investigation **Status:** Decommissioned
Drill Method: Hand auger **UTM Zone:** 17
Easting: 657545 **Northing:** 4767978
Location Accuracy: **Orig. Ground Elev m:** 172
Elev. Reliability Note: **DEM Ground Elev m:** 148
Total Depth m: 3.7 **Primary Name:**
Township: WILLOUGHBY **Concession:** CON 3
Lot: 0 **Municipality:**
Completion Date: 12-JAN-1967 **Static Water Level:** .6
Primary Water Use: **Sec. Water Use:**

--Details--

Stratum ID: 220433420 **Top Depth(m):** 0.0
Bottom Depth(m): 1.2 **Stratum Desc:** Reddish brown clayey and stoney mixed fill

Stratum ID: 220433421 **Top Depth(m):** 1.2
Bottom Depth(m): 2.7 **Stratum Desc:** Grey-black or brown silty clay with sand peat. Bouncing

Stratum ID: 220433422 **Top Depth(m):** 2.7
Bottom Depth(m): 3.7 **Stratum Desc:** Reddish brown silt clay, WTPL

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10 *1 of 1* *SSW/138.2* *173.9 / -16.69* *lot 3* *ON* **WWIS**

Well ID: 6602251 **Data Entry Status:**
Construction Date: **Data Src:** 1
Primary Water Use: Domestic **Date Received:** 6/22/1966
Sec. Water Use: 0 **Selected Flag:** Yes
Final Well Status: Water Supply **Abandonment Rec:**
Water Type: **Contractor:** 4720
Casing Material: **Form Version:** 1
Audit No: **Owner:**
Tag: **Street Name:**
Construction Method: **County:** NIAGARA (WELLAND)
Elevation (m): **Municipality:** NIAGARA FALLS CITY (WILLOUGHBY)
Elevation Reliability: **Site Info:**
Depth to Bedrock: **Lot:** 003
Well Depth: **Concession:**
Overburden/Bedrock: **Concession Name:** BF WR
Pump Rate: **Easting NAD83:**
Static Water Level: **Northing NAD83:**
Flowing (Y/N): **Zone:**
Flow Rate: **UTM Reliability:**
Clear/Cloudy:

Bore Hole Information

Bore Hole ID: 10461984 **Elevation:** 175.78
DP2BR: **Elevrc:**
Spatial Status: **Zone:** 17
Code OB: o **East83:** 656067

Code OB Desc:	Overburden	**Org CS:**	
Open Hole:		**North83:**	4766768
Cluster Kind:		**UTMRC:**	5
Date Completed:	17-MAY-66	**UTMRC Desc:**	margin of error : 100 m - 300 m
Remarks:		**Location Method:**	p5
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	932594350
Layer:	2
Color:	
General Color:	
Mat1:	11
Most Common Material:	GRAVEL
Mat2:	
Other Materials:	
Mat3:	
Other Materials:	
Formation Top Depth:	78
Formation End Depth:	83
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	932594349
Layer:	1
Color:	3
General Color:	BLUE
Mat1:	05
Most Common Material:	CLAY
Mat2:	
Other Materials:	
Mat3:	
Other Materials:	
Formation Top Depth:	0
Formation End Depth:	78
Formation End Depth UOM:	ft

Method of Construction & Well Use

Method Construction ID:	966602251
Method Construction Code:	1
Method Construction:	Cable Tool
Other Method Construction:	

Pipe Information

Pipe ID:	11010554
Casing No:	1
Comment:	
Alt Name:	

Construction Record - Casing

Casing ID:	930750596
Layer:	1
Material:	1
Open Hole or Material:	STEEL
Depth From:	
Depth To:	83
Casing Diameter:	6
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

Results of Well Yield Testing

Pump Test ID:	996602251
Pump Set At:	
Static Level:	12
Final Level After Pumping:	50
Recommended Pump Depth:	50
Pumping Rate:	6
Flowing Rate:	
Recommended Pump Rate:	2
Levels UOM:	ft
Rate UOM:	GPM
Water State After Test Code:	1
Water State After Test:	CLEAR
Pumping Test Method:	1
Pumping Duration HR:	2
Pumping Duration MIN:	0
Flowing:	N

Water Details

Water ID:	933949554
Layer:	1
Kind Code:	1
Kind:	FRESH
Water Found Depth:	83
Water Found Depth UOM:	ft

11 ***1 of 1*** ***ENE/141.9*** ***142.4 / -48.23*** ***ON*** ***BORE***

Borehole ID:	606786	***Type:***	Borehole
Use:	Geotechnical/Geological Investigation	***Status:***	
Drill Method:	Power auger	***UTM Zone:***	17
Easting:	657575	***Northing:***	4767967
Location Accuracy:		***Orig. Ground Elev m:***	172
Elev. Reliability Note:		***DEM Ground Elev m:***	171
Total Depth m:	3.7	***Primary Name:***	
Township:		***Concession:***	
Lot:		***Municipality:***	
Completion Date:	OCT-1966	***Static Water Level:***	.1
Primary Water Use:	Not Used	***Sec. Water Use:***	

--Details--

Stratum ID:	218375952	***Top Depth(m):***	0.0
Bottom Depth(m):	0.9	***Stratum Desc:***	FILL,STONES,CLAY. BROWN,STIFF.
Stratum ID:	218375953	***Top Depth(m):***	0.9
Bottom Depth(m):	2.3	***Stratum Desc:***	CLAY,SILT,PEAT. BLACK,FIRM, WATER STABLE AT 564.8 FEET.

Stratum ID:	218375954	**Top Depth(m):**	2.3
Bottom Depth(m):	3.7	**Stratum Desc:**	CLAY,SILT. BROWN,SOFT. 053 044 020 0000001600030005

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12 **1 of 1** **ENE/151.5** **135.1 / -55.50** **ON** **BORE**

Borehole ID:	857774	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	Decommissioned
Drill Method:	Hollow stem auger	**UTM Zone:**	17
Easting:	657573	**Northing:**	4767987
Location Accuracy:		**Orig. Ground Elev m:**	-999.9
Elev. Reliability Note:		**DEM Ground Elev m:**	164
Total Depth m:	3.7	**Primary Name:**	
Township:	WILLOUGHBY	**Concession:**	CON 3
Lot:	0	**Municipality:**	
Completion Date:	12-JAN-1967	**Static Water Level:**	-999.9
Primary Water Use:		**Sec. Water Use:**	

--Details--

Stratum ID:	220433426	**Top Depth(m):**	0.0
Bottom Depth(m):	1.7	**Stratum Desc:**	Reddish brown clayey and stoney mixed fill
Stratum ID:	220433427	**Top Depth(m):**	1.7
Bottom Depth(m):	2.7	**Stratum Desc:**	Grey-black or brown silty clay with sand peat. Bouncing
Stratum ID:	220433428	**Top Depth(m):**	2.7
Bottom Depth(m):	3.7	**Stratum Desc:**	Reddish brown silty clay

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13 **1 of 1** **NE/154.7** **143.8 / -46.76** **ON** **BORE**

Borehole ID:	606788	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Power auger	**UTM Zone:**	17
Easting:	657045	**Northing:**	4768012
Location Accuracy:		**Orig. Ground Elev m:**	174
Elev. Reliability Note:		**DEM Ground Elev m:**	140
Total Depth m:	15.7	**Primary Name:**	
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	JUN-1971	**Static Water Level:**	1.1
Primary Water Use:	Not Used	**Sec. Water Use:**	

--Details--

Stratum ID:	218375958	**Top Depth(m):**	0.0
Bottom Depth(m):	0.2	**Stratum Desc:**	SOIL.
Stratum ID:	218375959	**Top Depth(m):**	0.2
Bottom Depth(m):	14.0	**Stratum Desc:**	CLAY,SILT,GRAVEL. BROWN,LACUSTRINE,FIRM, AGE GLACIAL.
Stratum ID:	218375960	**Top Depth(m):**	14.0
Bottom Depth(m):	15.7	**Stratum Desc:**	SILT. GREY,LACUSTRINE,LOOSE, AGE GLACIAL, WATER STABLE AT 568.9 FEET. 017 02800005011004600

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
14	1 of 1	NNE/156.6	157.9 / -32.74	ON	BORE

Borehole ID: 606702
Use: Geotechnical/Geological Investigation
Drill Method: Power auger
Easting: 656645
Location Accuracy:
Elev. Reliability Note:
Total Depth m: 11.4
Township:
Lot:
Completion Date: JUN-1971
Primary Water Use: Not Used
Type: Borehole
Status:
UTM Zone: 17
Northing: 4768012
Orig. Ground Elev m: 176
DEM Ground Elev m: 156
Primary Name:
Concession:
Municipality:
Static Water Level: .3
Sec. Water Use:

--Details--

Stratum ID	Bottom Depth(m)	Top Depth(m)	Stratum Desc
218375521	0.2	0.0	SOIL.
218375522	2.6	0.2	CLAY,GRAVEL. BROWN,STIFF.
218375523	4.4	2.6	SILT,CLAY,SAND. BROWN,FIRM, WATER STABLE AT 578.0 FEET.
218375524	9.1	4.4	CLAY,SAND. BROWN,LACUSTRINE,VERY SOFT, LAYERED.
218375525	11.4	9.1	CLAY,SILT. GREY,LACUSTRINE,FIRM, AGE GLACIAL. 017 0280000500900085008001450200030000704

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
15	1 of 1	ENE/157.3	157.1 / -33.47	4540 Lyons Pkwy, Niagara Falls ON	PINC

Incident ID:
Incident No: 888924
Type: FS-Pipeline Incident
Status Code: Pipeline Damage Reason Est
Fuel Occurrence Tp:
Fuel Type:
Tank Status: RC Established
Task No: 4058296
Spills Action Centre:
Method Details: E-mail
Fuel Category: Natural Gas
Date of Occurrence:
Occurrence Start Date: 2012/12/03
Operation Type:
Pipeline Type:
Regulator Type:
Summary: 4540 Lyons Pkwy, Niagara Falls - 2" Pipeline Hit
Reported By: Bill Elliott - Enbridge
Affiliation:
Occurrence Desc:
Damage Reason: Excavation practices not sufficient
Notes:
Health Impact:
Environment Impact:
Property Damage: No
Service Interupt:
Enforce Policy: Yes
Public Relation:
Pipeline System:
Depth:
Pipe Material:
PSIG:
Attribute Category: FS-Perform P-line Inc Invest
Regualtor Location:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
16	1 of 1	ENE/161.7	149.8 / -40.82	ON	BORE

Borehole ID: 606787
Use: Geotechnical/Geological Investigation
Drill Method: Power auger
Easting: 657595
Location Accuracy:
Elev. Reliability Note:
Total Depth m: 3.7
Township:
Lot:
Completion Date: OCT-1966
Primary Water Use: Not Used

Type: Borehole
Status:
UTM Zone: 17
Northing: 4767972
Orig. Ground Elev m: 173
DEM Ground Elev m: 176
Primary Name:
Concession:
Municipality:
Static Water Level: -999.9
Sec. Water Use:

--Details--

Stratum ID: 218375955
Bottom Depth(m): 1.7
Top Depth(m): 0.0
Stratum Desc: FILL,STONES,CLAY. BROWN,VERY SOFT.

Stratum ID: 218375956
Bottom Depth(m): 2.7
Top Depth(m): 1.7
Stratum Desc: CLAY,SILT,ORGANIC. BLACK,STIFF.

Stratum ID: 218375957
Bottom Depth(m): 3.7
Top Depth(m): 2.7
Stratum Desc: CLAY,SILT. BROWN,SOFT. 018 044 022 00000026000550140000

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
17	1 of 2	ENE/190.4	148.7 / -41.95	NIAGARA FALLS CITY LYONS PKWAY/LYONS CREEK RD. NIAGARA FALLS ON	CA

Certificate #: 3-1316-98-
Application Year: 98
Issue Date: 9/2/1998
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)	Elev/Diff (m)	Site	DB
17	2 of 2	ENE/190.4	148.7 / -41.95	NIAGARA FALLS CITY LYONS PKWAY/LYONS CREEK RD. NIAGARA FALLS ON	CA

Certificate #: 7-0877-98-
Application Year: 98
Issue Date: 9/2/1998
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)	Elev/Diff (m)	Site	DB

18 | **1 of 1** | **ENE/191.0** | **153.5 / -37.14** | **Enbridge Gas Distribution Inc.**
4540 Lions Pkwy, Chippawa
Niagara Falls ON | **SPL**

Ref No:	3278-8YSJPQ	**Discharger Report:**	
Site No:		**Material Group:**	
Incident Dt:	05-OCT-12	**Client Type:**	
Year:		**Sector Type:**	Pipeline/Components
Incident Cause:	Operator/Human error	**Source Type:**	
Incident Event:		**Nearest Watercourse:**	
Contaminant Code:	35	**Site Name:**	line strike<UNOFFICIAL>
Contaminant Name:	NATURAL GAS (METHANE)	**Site Address:**	4540 Lions Pkwy, Chippawa
Contaminant Limit 1:		**Site District Office:**	
Contam Limit Freq 1:		**Site County/District:**	
Contaminant UN No 1:		**Site Postal Code:**	
Contaminant Qty:	0 other - see incident description	**Site Region:**	
Environment Impact:	Confirmed	**Site Municipality:**	Niagara Falls
Nature of Impact:	Air Pollution; Human Health/Safety	**Site Lot:**	
Receiving Medium:		**Site Conc:**	
Receiving Env:		**Northing:**	
Health/Env Conseq:		**Easting:**	
MOE Response:	Not MOE mandate	**Site Geo Ref Accu:**	
Dt MOE Arvl on Scn:		**Site Geo Ref Meth:**	
MOE Reported Dt:	05-OCT-12	**Site Map Datum:**	
Dt Document Closed:	06-OCT-12		
Agency Involved:			
SAC Action Class:	TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill		
Incident Reason:	Operator/Human Error		
Incident Summary:	TSSA: 2 inch plast line strike, safe		

19 | **1 of 1** | **NW/208.3** | **176.4 / -14.19** | **lot 317**
NIAGARA FALL ON | **WWIS**

Well ID:	6604765	**Data Entry Status:**	
Construction Date:		**Data Src:**	
Primary Water Use:		**Date Received:**	4/16/2004
Sec. Water Use:		**Selected Flag:**	Yes
Final Well Status:		**Abandonment Rec:**	
Water Type:		**Contractor:**	7003
Casing Material:		**Form Version:**	3
Audit No:	Z07420	**Owner:**	
Tag:	A007318	**Street Name:**	
Construction Method:		**County:**	NIAGARA (WELLAND)
Elevation (m):		**Municipality:**	NIAGARA FALLS CITY
Elevation Reliability:		**Site Info:**	
Depth to Bedrock:		**Lot:**	317
Well Depth:		**Concession:**	
Overburden/Bedrock:		**Concession Name:**	
Pump Rate:		**Easting NAD83:**	
Static Water Level:		**Northing NAD83:**	
Flowing (Y/N):		**Zone:**	
Flow Rate:		**UTM Reliability:**	
Clear/Cloudy:			

Bore Hole Information

Bore Hole ID:	11108098	**Elevation:**	173.95
DP2BR:		**Elevrc:**	
Spatial Status:		**Zone:**	17
Code OB:	o	**East83:**	655864
Code OB Desc:	Overburden	**Org CS:**	UTM83

Open Hole:
Cluster Kind:
Date Completed: 01-MAR-04
Remarks:
Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

North83: 4768014
UTMRC: 5
UTMRC Desc: margin of error : 100 m - 300 m
Location Method: wwr

Overburden and Bedrock Materials Interval

Formation ID: 932965218
Layer: 1
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2: 11
Other Materials: GRAVEL
Mat3: 84
Other Materials: SILTY
Formation Top Depth: 0
Formation End Depth: 4.5
Formation End Depth UOM: m

Annular Space/Abandonment Sealing Record

Plug ID: 933251955
Layer: 1
Plug From: .5
Plug To: 4
Plug Depth UOM: m

Annular Space/Abandonment Sealing Record

Plug ID: 933251956
Layer: 2
Plug From: 4.5
Plug To: 5.2
Plug Depth UOM: m

Method of Construction & Well Use

Method Construction ID: 966604765
Method Construction Code: B
Method Construction: Other Method
Other Method Construction:

Pipe Information

Pipe ID: 11116025
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID:	930841445
Layer:	2
Material:	5
Open Hole or Material:	PLASTIC
Depth From:	0
Depth To:	4.5
Casing Diameter:	6
Casing Diameter UOM:	cm
Casing Depth UOM:	m

Construction Record - Casing

Casing ID:	930841446
Layer:	3
Material:	5
Open Hole or Material:	PLASTIC
Depth From:	0
Depth To:	4.5
Casing Diameter:	6
Casing Diameter UOM:	cm
Casing Depth UOM:	m

Construction Record - Casing

Casing ID:	930841444
Layer:	1
Material:	5
Open Hole or Material:	PLASTIC
Depth From:	0
Depth To:	4.5
Casing Diameter:	6
Casing Diameter UOM:	cm
Casing Depth UOM:	m

Construction Record - Screen

Screen ID:	933408717
Layer:	1
Slot:	040
Screen Top Depth:	4.5
Screen End Depth:	5.2
Screen Material:	5
Screen Depth UOM:	m
Screen Diameter UOM:	cm
Screen Diameter:	6.2

Hole Diameter

Hole ID:	11116024
Diameter:	12
Depth From:	0
Depth To:	5.2
Hole Depth UOM:	m
Hole Diameter UOM:	cm

20	***1 of 1***	***NE/233.0***	***141.0 / -49.60***	***ON***	***BORE***

Borehole ID:	606789	***Type:***	Borehole
Use:	Geotechnical/Geological Investigation	***Status:***	

Drill Method:	Power auger	**UTM Zone:**	17
Easting:	657295	**Northing:**	4768152
Location Accuracy:		**Orig. Ground Elev m:**	175
Elev. Reliability Note:		**DEM Ground Elev m:**	158
Total Depth m:	9.9	**Primary Name:**	
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	JUN-1971	**Static Water Level:**	.1
Primary Water Use:	Not Used	**Sec. Water Use:**	

--Details--

Stratum ID:	218375961	**Top Depth(m):**	0.0
Bottom Depth(m):	0.1	**Stratum Desc:**	SOIL.
Stratum ID:	218375962	**Top Depth(m):**	0.1
Bottom Depth(m):	4.0	**Stratum Desc:**	CLAY,SILT,GRAVEL. BROWN,LACUSTRINE,FIRM, AGE GLACIAL.
Stratum ID:	218375963	**Top Depth(m):**	4.0
Bottom Depth(m):	5.8	**Stratum Desc:**	CLAY,ORGANIC. GREY,LACUSTRINE,FIRM, AGE GLACIAL, WATER STABLE AT 574.9 FEET.
Stratum ID:	218375964	**Top Depth(m):**	5.8
Bottom Depth(m):	9.9	**Stratum Desc:**	CLAY. BROWN,LACUSTRINE,FIRM, AGE GLACIAL. 017 02800003004001300080019003

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21 ***1 of 1*** ***NNE/242.3*** ***179.4 / -11.22*** ***ON*** ***BORE***

Borehole ID:	606585	**Type:**	Borehole
Use:	Geotechnical/Geological Investigation	**Status:**	
Drill Method:	Power auger	**UTM Zone:**	17
Easting:	656565	**Northing:**	4768122
Location Accuracy:		**Orig. Ground Elev m:**	177
Elev. Reliability Note:		**DEM Ground Elev m:**	180
Total Depth m:	11.4	**Primary Name:**	
Township:		**Concession:**	
Lot:		**Municipality:**	
Completion Date:	JUN-1971	**Static Water Level:**	.1
Primary Water Use:	Not Used	**Sec. Water Use:**	

--Details--

Stratum ID:	218374856	**Top Depth(m):**	0.0
Bottom Depth(m):	0.2	**Stratum Desc:**	SOIL.
Stratum ID:	218374857	**Top Depth(m):**	0.2
Bottom Depth(m):	7.0	**Stratum Desc:**	CLAY. BROWN,LACUSTRINE,STIFF, AGE GLACIAL, WATER STABLE AT 583.5 FEET.
Stratum ID:	218374858	**Top Depth(m):**	7.0
Bottom Depth(m):	11.4	**Stratum Desc:**	CLAY,SILT,SAND, GRAVEL. GREY,LACUSTRINE,STIFF, AGE GLACIAL. 017 02800006025002300102302 5

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22 ***1 of 1*** ***ENE/242.4*** ***166.8 / -23.83*** ***The Corporation of the City of Niagara Falls Niagara Falls ON*** ***ECA***

Approval No:	6157-5PBHVK	**SWP Area Name:**	Niagara Peninsula

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Approval Date:	2003-07-10	**MOE District:**	Niagara
Status:	Approved	**City:**	Niagara Falls
Record Type:	ECA	**Longitude:**	-79.0639
Link Source:	IDS	**Latitude:**	43.0469
Approval Type:	ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS		
Project Type:	MUNICIPAL AND PRIVATE SEWAGE WORKS		
Address:			
Full Address:			
Full PDF Link:	https://www.accessenvironment.ene.gov.on.ca/instruments/6388-5LLQPG-14.pdf		

23	1 of 2	WSW/250.0	171.7 / -18.91	5789 LYONS CREEK ROAD, NIAGARA FALLS ON	INC

Incident No:	1972306
Incident ID:	
Attribute Category:	FS-Perform L1 Incident Insp
Status Code:	
Incident Location:	5789 LYONS CREEK ROAD, NIAGARA FALLS - VAPOUR RELEASE
Drainage System:	
Sub Surface Contam.:	
Aff. Prop. Use Water:	
Contam. Migrated:	
Contact Natural Env.:	
Near Body of Water:	
Approx. Quant. Rel.:	
Equipment Model:	
Serial No:	
Residential App. Type:	
Commercial App. Type:	
Industrial App. Type:	
Institutional App. Type:	
Venting Type:	
Vent Connector Mater:	
Vent Chimney Mater:	
Pipeline Type:	
Pipeline Involved:	
Pipe Material:	
Depth Ground Cover:	
Regulator Location:	
Regulator Type:	
Operation Pressure:	
Liquid Prop Make:	
Liquid Prop Model:	
Liquid Prop Serial No:	
Equipment Type:	
Cylinder Capacity:	
Cylinder Capac. Units:	
Cylinder Material Type:	
Tank Capacity:	
Fuels Occurence Type:	Vapour Release
Fuel Type Involved:	Natural Gas
Date of Occurence:	2016/11/08 00:00:00
Time of Occurence:	02:20:00
Occur Insp Start Date:	2016/11/08 00:00:00
Any Health Impact:	No
Any Environmental Impact:	No
Was Service Interrupted:	Yes
Was Property Damaged:	No
Operation Type Involved:	Private Dwelling
Enforcement Policy:	NULL
Prc Escalation Required:	NULL
Task No:	6428766
Notes:	
Occurence Narrative:	vehicle stuck gas regulator (farm tap)

Tank Material Type:
Tank Storage Type:
Tank Location Type:
Pump Flow Rate Capac:
Liquid Prop Notes:

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23 | ***2 of 2*** | ***WSW/250.0*** | ***171.7 / -18.91*** | ***5789 Lyons Creek Road Niagara Falls ON*** | ***SPL***

Ref No:	1030-AFHHJ9	***Discharger Report:***	
Site No:	NA	***Material Group:***	
Incident Dt:	2016/11/08	***Client Type:***	
Year:		***Sector Type:***	Unknown / N/A
Incident Cause:		***Source Type:***	
Incident Event:	Leak/Break	***Nearest Watercourse:***	
Contaminant Code:	35	***Site Name:***	Residential<UNOFFICIAL>
Contaminant Name:	NATURAL GAS (METHANE)	***Site Address:***	5789 Lyons Creek Road
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site County/District:***	
Contaminant UN No 1:		***Site Postal Code:***	
Contaminant Qty:	0 other - see incident description	***Site Region:***	
Environment Impact:		***Site Municipality:***	Niagara Falls
Nature of Impact:		***Site Lot:***	
Receiving Medium:		***Site Conc:***	
Receiving Env:	Air	***Northing:***	
Health/Env Conseq:		***Easting:***	
MOE Response:	No	***Site Geo Ref Accu:***	
Dt MOE Arvl on Scn:		***Site Geo Ref Meth:***	
MOE Reported Dt:	2016/11/08	***Site Map Datum:***	
Dt Document Closed:	2016/12/17		
Agency Involved:			
SAC Action Class:	TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill		
Incident Reason:	Operator/Human Error		
Incident Summary:	TSSA FSB, 1" meter set, made safe		

Unplottable Summary

Total: 34 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
CA	QUEENSWAY CHIPPAWA PROPS. INC.	PT.LOTS 19/20&22, CONC. 3, SWM	NIAGARA FALLS ON	
CA	NATIVE HERITAGE REALTY LIMITED	LYON'S CREEK ROAD	NIAGARA FALLS CITY ON	
CA	NATIVE HERITAGE REALTY LIMITED	LYON'S CREEK ROAD	NIAGARA FALLS CITY ON	
CA	1578891 Ontario Ltd.	Stanley Avenue (south of Swayze Drive)	Niagara Falls ON	
CA	The Corporation of the City of Niagara Falls	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2E 6S4
CA	1578891 Ontario Ltd.	Stanley Ave	Niagara Falls ON	
CA	The Corporation of the City of Niagara Falls	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2E 6S4
CA	The Corporation of the City of Niagara Falls	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2E 6S4
CA	The Regional Municipality of Niagara	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2E 6S4
CA	The Regional Municipality of Niagara	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2E 6S4
CA	The Regional Municipality of Niagara	Stanley Avenue	Niagara Falls ON	
CA	REDLAND QUARRIES INC.	STANLEY AVE., RR #2, QUEENSTON	NIAGARA FALLS CITY ON	
CA	QUEENSWAY CHIPPAWA PROPS. INC.	PT.LOTS 20&21/CONC.1 (SWM)	NIAGARA FALLS CITY ON	
CA	R.M. OF NIAGARA	STANLEY AVE.	NIAGARA FALLS CITY ON	
CONV	IAN HERD	Reixinger Road	Niagara Falls ON	
EBR	Half-Way Sand Pit Limited	Part Lot 4 and 17, Geographical Township of Stamford CITY OF NIAGARA FALLS REGIONAL MUNICIPALITY OF NIAGARA	ON	

ECA	The Corporation of the City of Niagara Falls	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2E 6X5
ECA	The Regional Municipality of Niagara	Regional Road 102 (Stanley Avenue)	Niagara Falls ON	L2V 4T7
ECA	Queensway Chippawa Props. Inc.	Ref Plan 24T-94009	Niagara Falls ON	L4K 4R1
ECA	The Regional Municipality of Niagara	Stanley Avenue	Niagara Falls ON	
ECA	Queensway Chippawa Props. Inc.	Ref Plan 24T-94009	Niagara Falls ON	L4K 4R1
ECA	Queensway Chippawa Props. Inc.		Niagara Falls ON	L4K 4R1
EHS		Stanley Ave	Niagara Falls ON	
GEN	NIAGARA FALLS HYDRO (PCB) 00-000	MULLER (STA. 37)STANLEY AVE. P.O. BOX 120	NIAGARA FALLS ON	L2E 6S9
GEN	STEETLEY QUARRY PRODUCTS INC. 36-226	STANLEY AVENUE NORTH R.R. #1, STANLEY AVENUE NORTH	NIAGARA FALLS ON	L2E 6S4
GEN	STEETLEY QUARRY PRODUCTS INC.	STANLEY AVENUE NORTH R.R. #1, STANLEY AVENUE NORTH	NIAGARA FALLS ON	L2E 6S4
LIMO	Cytec Canada Inc., formely Cyanamid Of Canada Limited St Davids Landfill	Part of Lots 4 & 17 Unnamed Road (Off Stanley Ave) Niagara Falls	ON	
SCT	REDLAND QUARRIES INC.	STANLEY AVE	NIAGARA FALLS ON	L2E
SCT	Lafarge Canada Inc. - Queenston Quarries Division	1 Stanley Ave N	Niagara Falls ON	L2E 6S4
SPL	NIAGARA FALLS HYDRO	ORT RD, N OF MARSHALL RD TRANSFORMER/CAPACITOR	NIAGARA FALLS CITY ON	
SPL	Rankin Construction Inc.; Ontario Power Generation Inc.	100m north of Queenston Bridge; Stanley Ave.	Niagara Falls; Niagara-on-the-Lake ON	NA
SPL	Strabag Inc.	Stanley Ave., just north of Valley Way in Niagara Falls	Niagara Falls ON	
SPL	MARINE LAND	KING WALDORF TRAILER PARK ON STANLEY AVE NEAR MARINELAND/ LYONS CREEK ROAD. AMUSEMENT PARK	NIAGARA FALLS CITY ON	
WWIS		lot 4	ON	

Unplottable Report

Site: ***QUEENSWAY CHIPPAWA PROPS. INC.***
PT.LOTS 19/20&22, CONC. 3, SWM NIAGARA FALLS ON

Database: ***CA***

Certificate #:	3-1149-98-
Application Year:	98
Issue Date:	10/13/1998
Approval Type:	Municipal sewage
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

Site: ***NATIVE HERITAGE REALTY LIMITED***
LYON'S CREEK ROAD NIAGARA FALLS CITY ON

Database: ***CA***

Certificate #:	7-1088-92-
Application Year:	92
Issue Date:	11/9/1992
Approval Type:	Municipal water
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

Site: ***NATIVE HERITAGE REALTY LIMITED***
LYON'S CREEK ROAD NIAGARA FALLS CITY ON

Database: ***CA***

Certificate #:	3-1399-92-
Application Year:	92
Issue Date:	11/9/1992
Approval Type:	Municipal sewage
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

Site: ***1578891 Ontario Ltd.***
Stanley Avenue (south of Swayze Drive) Niagara Falls ON

Database: ***CA***

Certificate #:	2340-6AZSPB

Application Year: 2005
Issue Date: 4/6/2005
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: ***The Corporation of the City of Niagara Falls***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2E 6S4

Database: ***CA***

Certificate #: 1646-6MHLWK
Application Year: 2006
Issue Date: 3/3/2006
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: ***1578891 Ontario Ltd.***
Stanley Ave Niagara Falls ON

Database: ***CA***

Certificate #: 5334-77EN9B
Application Year: 2007
Issue Date: 10/25/2007
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: ***The Corporation of the City of Niagara Falls***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2E 6S4

Database: ***CA***

Certificate #: 8626-68BJ3N
Application Year: 2005
Issue Date: 1/5/2005
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: ***The Corporation of the City of Niagara Falls***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2E 6S4

Database: ***CA***

Certificate #: 2419-5JBRMV
Application Year: 2003
Issue Date: 2/5/2003
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: ***The Regional Municipality of Niagara***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2E 6S4

Database: ***CA***

Certificate #: 3976-5JGSRQ
Application Year: 2003
Issue Date: 2/7/2003
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: ***The Regional Municipality of Niagara***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2E 6S4

Database: ***CA***

Certificate #: 6181-66SQYP
Application Year: 2004
Issue Date: 11/18/2004
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: ***The Regional Municipality of Niagara***
Stanley Avenue Niagara Falls ON

Database: ***CA***

Certificate #: 2125-6EHRAN
Application Year: 2005
Issue Date: 8/5/2005
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: ***REDLAND QUARRIES INC.***
STANLEY AVE., RR #2, QUEENSTON NIAGARA FALLS CITY ON

Database: ***CA***

Certificate #: 8-2013-97-
Application Year: 97
Issue Date: 4/4/1997
Approval Type: Industrial air
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description: PORTABLE SEC. CRUSHING/SCREENING PLANT
Contaminants: Propylene Oxide
Emission Control:

Site: ***QUEENSWAY CHIPPAWA PROPS. INC.***
PT.LOTS 20&21/CONC.1 (SWM) NIAGARA FALLS CITY ON

Database: ***CA***

Certificate #: 3-1450-95-006
Application Year: 95
Issue Date: 11/8/95
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***R.M. OF NIAGARA***
STANLEY AVE. NIAGARA FALLS CITY ON

Database: ***CA***

Certificate #: 3-0156-86-
Application Year: 86
Issue Date: 2/28/1986
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***IAN HERD***
Reixinger Road Niagara Falls ON

Database: ***CONV***

File No: 050104
Crown Brief No:
Location:
Region:

Court Location: ***Ministry District:***
Publication City:
Publication Title:
Act:
Act(s):
First Matter:
Second Matter:
Investigation 1:
Investigation 2:
Penalty Imposed:
Description: On March 20, 2009, ian M. Herd was sentenced ex parte, to six months in jail after being convicted on August 15, 2008 for failing to have oil-contaminated soil transported to an approved waste management facility by an approved waste hauler and failing to submit copies of all manifests and receipts to the ministry. An order was also issued to Mr. Herd and 1499974 Ontario Inc. to clean up the site in St. Catharines. Since Mr. Herd was not in attendance at the time of sentencing, a committal warrant was issued for his arrest. The Court heard that Mr. Herd is the sole director of 1499974 Ontario Inc. In April of 2006, the company purchased a property on Reixinger Road in Niagara Falls that contained an abundance of scrap metal, tires and liquid automobile wastes in barrels. In August of 2006, ministry staff issued an order to the company and Mr. Herd, requiring the removal of the oil-contaminated soil at the property and submission of all receipts related to the clean-up. Mr. Herd failed to comply with the order. Mr. Herd and the company were charged following an investigation by the Ministry of the Environment's Investigations and Enforcement Branch. Mr. Herd had previously been convicted of two other offences under the Environmental Protection Act. In 2004, he was convicted of operating a waste disposal site for tires in Belleville without a Certificate of Approval. A fine of $13,000 was imposed, as well as a court order to clean up the site. He was then charged with failing to comply with the court order and pleaded guilty to the charge in June 2008. In September 2008, he was sentenced to sixty days in jail to be served intermittently, and two years of probation. His fine was suspended and a second court order was issued.
Background:
URL:

--Details--
Publication Date:
Count: 1
Act:
Regulation:
Section:
Act/Regulation/Section:
Date of Offence:
Date of Conviction:
Date Charged: March 20, 2009
Charge Disposition: jail
Fine: 6 months
Synopsis:

Site: ***Half-Way Sand Pit Limited***
Part Lot 4 and 17, Geographical Township of Stamford CITY OF NIAGARA FALLS REGIONAL MUNICIPALITY OF NIAGARA ON

Database: ***EBR***

EBR Registry No.: 010-1983 ***Proposal Date:*** October 29, 2007
Ministry Ref. No.: FSD GUE 30/07 ***Notice Pub Date:*** October 20, 2008
Notice Type: Instrument Decision ***Year:*** 2007
Company Name: Half-Way Sand Pit Limited
Proponent Name:
Proposal Address: 2200 Stanley Avenue, Niagara Falls Ontario, Canada L2E 6S4
Instrument Type: (ARA s. 16 (2)) - Approval of licensee proposed amendment to a site plan
Location Other:
URL:

Location:

Part Lot 4 and 17, Geographical Township of Stamford CITY OF NIAGARA FALLS REGIONAL MUNICIPALITY OF NIAGARA

Site: ***The Corporation of the City of Niagara Falls***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2E 6X5

Database: ***ECA***

Approval No:	1646-6MHLWK	***SWP Area Name:***	
Approval Date:	2006-03-03	***MOE District:***	
Status:	Approved	***City:***	Niagara Falls
Record Type:	ECA	***Longitude:***	
Link Source:	IDS	***Latitude:***	
Approval Type:	ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS		
Project Type:	MUNICIPAL AND PRIVATE SEWAGE WORKS		
Address:	Regional Road 102 (Stanley Avenue)		
Full Address:			
Full PDF Link:	https://www.accessenvironment.ene.gov.on.ca/instruments/8168-6MGMFK-14.pdf		

Site: ***The Regional Municipality of Niagara***
Regional Road 102 (Stanley Avenue) Niagara Falls ON L2V 4T7

Database: ***ECA***

Approval No:	6937-9NBKZ2	***SWP Area Name:***	
Approval Date:	2014-08-28	***MOE District:***	
Status:	Approved	***City:***	Niagara Falls
Record Type:	ECA	***Longitude:***	
Link Source:	IDS	***Latitude:***	
Approval Type:	ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS		
Project Type:	MUNICIPAL AND PRIVATE SEWAGE WORKS		
Address:	Regional Road 102 (Stanley Avenue)		
Full Address:			
Full PDF Link:	https://www.accessenvironment.ene.gov.on.ca/instruments/9557-9N5RVZ-14.pdf		

Site: ***Queensway Chippawa Props. Inc.***
Ref Plan 24T-94009 Niagara Falls ON L4K 4R1

Database: ***ECA***

Approval No:	7134-8MZQLP	***SWP Area Name:***	
Approval Date:	2011-11-04	***MOE District:***	
Status:	Approved	***City:***	Niagara Falls
Record Type:	ECA	***Longitude:***	
Link Source:	IDS	***Latitude:***	
Approval Type:	ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS		
Project Type:	MUNICIPAL AND PRIVATE SEWAGE WORKS		
Address:	Ref Plan 24T-94009		
Full Address:			
Full PDF Link:	https://www.accessenvironment.ene.gov.on.ca/instruments/0482-8MRS64-14.pdf		

Site: ***The Regional Municipality of Niagara***
Stanley Avenue Niagara Falls ON

Database: ***ECA***

Approval No:	2125-6EHRAN	***SWP Area Name:***	
Approval Date:	2005-08-05	***MOE District:***	
Status:	Approved	***City:***	Niagara Falls
Record Type:	ECA	***Longitude:***	
Link Source:	IDS	***Latitude:***	
Approval Type:	ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS		
Project Type:	MUNICIPAL AND PRIVATE SEWAGE WORKS		
Address:	Stanley Avenue		
Full Address:			
Full PDF Link:	https://www.accessenvironment.ene.gov.on.ca/instruments/1698-6DBNGY-14.pdf		

Site: ***Queensway Chippawa Props. Inc.***
Ref Plan 24T-94009 Niagara Falls ON L4K 4R1

Database: ***ECA***

Approval No:	9269-9LZJ46	***SWP Area Name:***	
Approval Date:	2014-07-17	***MOE District:***	
Status:	Approved	***City:***	Niagara Falls
Record Type:	ECA	***Longitude:***	
Link Source:	IDS	***Latitude:***	
Approval Type:	ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS		

Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Address: Ref Plan 24T-94009
Full Address:
Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/2823-9LURSR-14.pdf

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Site: ***Queensway Chippawa Props. Inc.***
Niagara Falls ON L4K 4R1

Database: ***ECA***

Approval No: 2524-8QPQVD
Approval Date: 2012-01-27
Status: Approved
Record Type: ECA
Link Source: IDS
SWP Area Name:
MOE District:
City: Niagara Falls
Longitude:
Latitude:
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Address:
Full Address:
Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/4726-8MKSK4-14.pdf

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Site:
Stanley Ave Niagara Falls ON

Database: ***EHS***

Order No: 20101108008
Status: C
Report Type: Custom Report
Report Date: 11/17/2010
Date Received: 11/8/2010 12:09:30 PM
Previous Site Name:
Lot/Building Size:
Additional Info Ordered:
Nearest Intersection: McLeod Road & Stanley Avenue
Municipality: RMON
Client Prov/State: ON
Search Radius (km): 0.25
X: -694444.444444
Y: 43.0741

Site: ***NIAGARA FALLS HYDRO (PCB) 00-000***
MULLER (STA. 37)STANLEY AVE. P.O. BOX 120 NIAGARA FALLS ON L2E 6S9

Database: ***GEN***

Generator No.: ON0393813
Status:
Approval Years: 92,93,94
Contam. Facility:
MHSW Facility:
SIC Code: 0000
SIC Description: *** NOT DEFINED ***
PO Box No.:
Country:
Choice of Contact:
Co Admin:
Phone No. Admin:

Site: ***STEETLEY QUARRY PRODUCTS INC. 36-226***
STANLEY AVENUE NORTH R.R. #1, STANLEY AVENUE NORTH NIAGARA FALLS ON L2E 6S4

Database: ***GEN***

Generator No.: ON0010702
Status:
Approval Years: 92,93,94,95,96,97
Contam. Facility:
MHSW Facility:
SIC Code: 0812
SIC Description: LIMESTONE QUARRIES
PO Box No.:
Country:
Choice of Contact:
Co Admin:
Phone No. Admin:

--Details--
Waste Code: 252
Waste Description: WASTE OILS & LUBRICANTS

Site: ***STEETLEY QUARRY PRODUCTS INC.***
STANLEY AVENUE NORTH R.R. #1, STANLEY AVENUE NORTH NIAGARA FALLS ON L2E 6S4

Database: ***GEN***

Generator No.:	ON0010702	***PO Box No.:***	
Status:		***Country:***	
Approval Years:	98,99,00,01	***Choice of Contact:***	
Contam. Facility:		***Co Admin:***	
MHSW Facility:		***Phone No. Admin:***	
SIC Code:	0812		
SIC Description:	LIMESTONE QUARRIES		

--Details--

Waste Code:	252
Waste Description:	WASTE OILS & LUBRICANTS

Site: ***Cytec Canada Inc., formely Cyanamid Of Canada Limited St Davids Landfill***
Part of Lots 4 & 17 Unnamed Road (Off Stanley Ave) Niagara Falls ON

Database: ***LIMO***

ECA/Instrument No:	A120202	***Air Emis Monitor:***	
Site Name:		***Natural Attenuation:***	
Oper Status 2016:	Closed	***Liners:***	
C of A Issue Date:		***Cover Material:***	
C of A Issued to:		***Leachate Off-Site:***	
Lndfl Gas Mgmt (P):		***Leachate On Site:***	
Lndfl Gas Mgmt (F):		***Req Coll Lndfll Gas:***	
Lndfl Gas Mgmt (E):		***Lndfll Gas Coll:***	
Lndfl Gas Mgmt Sys:		***Total Waste Rec:***	
Landfill Gas Mntr:		***TWR Methodology:***	
Leachate Coll Sys:		***TWR Unit:***	
ERC Est Vol (m3):		***Tot Aprv Cap Unit:***	
ERC Volume Unit:		***Financial Assurance:***	
ERC Dt Last Det:		***Last Report Year:***	
Landfill Type:		***MOE Region:***	
Source File Type:	Historic and Closed Landfills	***MOE District:***	
Fill Rate:		***Site County:***	
Fill Rate Unit:		***Lot:***	
Tot Fill Area (ha):		***Concession:***	
Tot Site Area (ha):		***Latitude:***	
Footprint:		***Longitude:***	
Tot Apprv Cap (m3):		***Easting:***	
Contam Atten Zone:		***Northing:***	
Grndwtr Mntr:		***UTM Zone:***	
Surf Wtr Mntr:		***Data Source:***	
Approved Waste Type:			
Client Site Name:	Cytec Canada Inc., formely Cyanamid Of Canada Limited St Davids Landfill		
ERC Methodology:			
Site Location Details:	Part of Lots 4 & 17 Unnamed Road (Off Stanley Ave)		
	Niagara Falls		
Service Area:			

Site: ***REDLAND QUARRIES INC.***
STANLEY AVE NIAGARA FALLS ON L2E

Database: ***SCT***

Established:	0000
Plant Size (ft²):	10890000
Employment:	6

--Details--

Description:	MINERALS AND EARTHS, GROUND OR OTHERWISE TREATED
SIC/NAICS Code:	3295

Site: ***Lafarge Canada Inc. - Queenston Quarries Division***
1 Stanley Ave N Niagara Falls ON L2E 6S4

Database: ***SCT***

Established: 1996
Plant Size (ft²): 890000
Employment: 6

--Details--
Description: All Other Non-Metallic Mineral Product Manufacturing
SIC/NAICS Code: 327990

Site: ***NIAGARA FALLS HYDRO***
ORT RD, N OF MARSHALL RD TRANSFORMER/CAPACITOR NIAGARA FALLS CITY ON

Database: ***SPL***

Ref No:	224981	***Discharger Report:***	
Site No:		***Material Group:***	
Incident Dt:	5/9/2002	***Client Type:***	
Year:		***Sector Type:***	
Incident Cause:	OTHER CONTAINER LEAK	***Source Type:***	
Incident Event:		***Nearest Watercourse:***	
Contaminant Code:		***Site Name:***	
Contaminant Name:		***Site Address:***	
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site County/District:***	
Contaminant UN No 1:		***Site Postal Code:***	
Contaminant Qty:		***Site Region:***	
Environment Impact:	POSSIBLE	***Site Municipality:***	18101
Nature of Impact:	Multi Media Pollution	***Site Lot:***	
Receiving Medium:	LAND / WATER	***Site Conc:***	
Receiving Env:		***Northing:***	
Health/Env Conseq:		***Easting:***	
MOE Response:		***Site Geo Ref Accu:***	
Dt MOE Arvl on Scn:		***Site Geo Ref Meth:***	
MOE Reported Dt:	5/9/2002	***Site Map Datum:***	
Dt Document Closed:			
Agency Involved:			
SAC Action Class:			

Incident Reason: ERROR
Incident Summary: NIAGARA HYDRO: 50 L TRANSFORMER OIL TO GRND & WET DITCH.CONTAINED,CLEANING.

Site: ***Rankin Construction Inc.; Ontario Power Generation Inc.***
100m north of Queenston Bridge; Stanley Ave. Niagara Falls; Niagara-on-the-Lake ON NA

Database: ***SPL***

Ref No:	7415-A9FU73	***Discharger Report:***	
Site No:	NA; 7676-75LK7W	***Material Group:***	
Incident Dt:	2016/04/28	***Client Type:***	
Year:		***Sector Type:***	Miscellaneous Industrial
Incident Cause:		***Source Type:***	
Incident Event:	Process Upset/Malfunction	***Nearest Watercourse:***	Niagara River
Contaminant Code:	41	***Site Name:***	Niagara Falls OPG project - off trail<UNOFFICIAL>; OPG PGS Reservoir (Stanley Avenue - Harrison System)
Contaminant Name:	BENTONITE SLURRY	***Site Address:***	100m north of Queenston Bridge; Stanley Ave.
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site County/District:***	
Contaminant UN No 1:		***Site Postal Code:***	NA
Contaminant Qty:	100 L	***Site Region:***	
Environment Impact:		***Site Municipality:***	Niagara Falls; Niagara-on-the-Lake
Nature of Impact:		***Site Lot:***	
Receiving Medium:		***Site Conc:***	
Receiving Env:	Land	***Northing:***	4779813; 4779626
Health/Env Conseq:		***Easting:***	658844; 656853
MOE Response:	Yes	***Site Geo Ref Accu:***	Map
Dt MOE Arvl on Scn:	2016/05/03	***Site Geo Ref Meth:***	NA
MOE Reported Dt:	2016/04/28	***Site Map Datum:***	NAD83
Dt Document Closed:			
Agency Involved:			

SAC Action Class:	Land Spills
Incident Reason:	Operator/Human Error
Incident Summary:	Rankin Construction - <100L gelled bentonite to ground, cleaning

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Site: ***Strabag Inc.***
Stanley Ave., just north of Valley Way in Niagara Falls Niagara Falls ON

Database: ***SPL***

Ref No:	7441-94PQ7P	***Discharger Report:***	
Site No:		***Material Group:***	
Incident Dt:	07-FEB-13	***Client Type:***	
Year:		***Sector Type:***	Unknown / N/A
Incident Cause:	Leak/Break	***Source Type:***	
Incident Event:		***Nearest Watercourse:***	
Contaminant Code:	35	***Site Name:***	Hydro Right-of-way, residential and commercial<UNOFFICIAL>
Contaminant Name:	METHANE GAS	***Site Address:***	Stanley Ave., just north of Valley Way in Niagara Falls
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site County/District:***	
Contaminant UN No 1:		***Site Postal Code:***	
Contaminant Qty:	0 other - see incident description	***Site Region:***	
Environment Impact:	Confirmed	***Site Municipality:***	Niagara Falls
Nature of Impact:	Air Pollution	***Site Lot:***	
Receiving Medium:		***Site Conc:***	
Receiving Env:		***Northing:***	
Health/Env Conseq:		***Easting:***	
MOE Response:	No Field Response	***Site Geo Ref Accu:***	
Dt MOE Arvl on Scn:		***Site Geo Ref Meth:***	
MOE Reported Dt:	07-FEB-13	***Site Map Datum:***	
Dt Document Closed:			
Agency Involved:			
SAC Action Class:	Air Spills - Gases and Vapours		
Incident Reason:	Unknown / N/A		
Incident Summary:	Unknown: methane gas release from ground to atm.		

Site: ***MARINE LAND***
KING WALDORF TRAILER PARK ON STANLEY AVE NEAR MARINELAND/ LYONS CREEK ROAD. AMUSEMENT PARK NIAGARA FALLS CITY ON

Database: ***SPL***

Ref No:	171483	***Discharger Report:***	
Site No:		***Material Group:***	
Incident Dt:	8/13/1999	***Client Type:***	
Year:		***Sector Type:***	
Incident Cause:	CONTAINER OVERFLOW	***Source Type:***	
Incident Event:		***Nearest Watercourse:***	
Contaminant Code:		***Site Name:***	
Contaminant Name:		***Site Address:***	
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site County/District:***	
Contaminant UN No 1:		***Site Postal Code:***	
Contaminant Qty:		***Site Region:***	
Environment Impact:	POSSIBLE	***Site Municipality:***	18101
Nature of Impact:	Soil contamination	***Site Lot:***	
Receiving Medium:	LAND	***Site Conc:***	
Receiving Env:		***Northing:***	
Health/Env Conseq:		***Easting:***	
MOE Response:		***Site Geo Ref Accu:***	
Dt MOE Arvl on Scn:		***Site Geo Ref Meth:***	
MOE Reported Dt:	8/14/1999	***Site Map Datum:***	
Dt Document Closed:			
Agency Involved:			
SAC Action Class:			
Incident Reason:	EQUIPMENT FAILURE		
Incident Summary:	MARINE LAND - SEPTIC BED DRAINAGE TO DITCH.		

Site:
lot 4 ON

Database:
WWIS

Well ID:	6603735	***Data Entry Status:***	
Construction Date:		***Data Src:***	1
Primary Water Use:	Municipal	***Date Received:***	4/14/1987
Sec. Water Use:		***Selected Flag:***	Yes
Final Well Status:	Observation Wells	***Abandonment Rec:***	
Water Type:		***Contractor:***	4005
Casing Material:		***Form Version:***	1
Audit No:	10192	***Owner:***	
Tag:		***Street Name:***	
Construction Method:		***County:***	NIAGARA (WELLAND)
Elevation (m):		***Municipality:***	NIAGARA FALLS CITY
Elevation Reliability:		***Site Info:***	
Depth to Bedrock:		***Lot:***	004
Well Depth:		***Concession:***	
Overburden/Bedrock:		***Concession Name:***	CON
Pump Rate:		***Easting NAD83:***	
Static Water Level:		***Northing NAD83:***	
Flowing (Y/N):		***Zone:***	
Flow Rate:		***UTM Reliability:***	
Clear/Cloudy:			

Bore Hole Information

Bore Hole ID:	10463334	***Elevation:***	
DP2BR:		***Elevrc:***	
Spatial Status:		***Zone:***	17
Code OB:	o	***East83:***	
Code OB Desc:	Overburden	***Org CS:***	
Open Hole:		***North83:***	
Cluster Kind:		***UTMRC:***	9
Date Completed:	18-MAR-87	***UTMRC Desc:***	unknown UTM
Remarks:		***Location Method:***	na
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	932599453
Layer:	5
Color:	6
General Color:	BROWN
Mat1:	28
Most Common Material:	SAND
Mat2:	29
Other Materials:	FINE GRAVEL
Mat3:	77
Other Materials:	LOOSE
Formation Top Depth:	151
Formation End Depth:	160
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	932599450
Layer:	2
Color:	3
General Color:	BLUE

Mat1: 05
Most Common Material: CLAY
Mat2: 28
Other Materials: SAND
Mat3: 77
Other Materials: LOOSE
Formation Top Depth: 6
Formation End Depth: 57
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 932599456
Layer: 8
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2: 77
Other Materials: LOOSE
Mat3:
Other Materials:
Formation Top Depth: 176
Formation End Depth: 179
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 932599455
Layer: 7
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2: 08
Other Materials: FINE SAND
Mat3: 77
Other Materials: LOOSE
Formation Top Depth: 173
Formation End Depth: 176
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 932599454
Layer: 6
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2: 77
Other Materials: LOOSE
Mat3:
Other Materials:
Formation Top Depth: 160
Formation End Depth: 173
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 932599449

Layer: 1
Color: 6
General Color: BROWN
Mat1: 05
Most Common Material: CLAY
Mat2: 28
Other Materials: SAND
Mat3: 77
Other Materials: LOOSE
Formation Top Depth: 0
Formation End Depth: 6
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 932599451
Layer: 3
Color: 6
General Color: BROWN
Mat1: 08
Most Common Material: FINE SAND
Mat2: 77
Other Materials: LOOSE
Mat3:
Other Materials:
Formation Top Depth: 57
Formation End Depth: 120
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 932599452
Layer: 4
Color: 6
General Color: BROWN
Mat1: 10
Most Common Material: COARSE SAND
Mat2: 77
Other Materials: LOOSE
Mat3:
Other Materials:
Formation Top Depth: 120
Formation End Depth: 151
Formation End Depth UOM: ft

Method of Construction & Well Use

Method Construction ID: 966603735
Method Construction Code: 1
Method Construction: Cable Tool
Other Method Construction:

Pipe Information

Pipe ID: 11011904
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930752760

Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 65
Casing Diameter: 8
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930752761
Layer: 2
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 173
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Screen

Screen ID: 933385589
Layer: 1
Slot: 010
Screen Top Depth: 173
Screen End Depth: 176
Screen Material:
Screen Depth UOM: ft
Screen Diameter UOM: inch
Screen Diameter: 5

Results of Well Yield Testing

Pump Test ID: 996603735
Pump Set At:
Static Level: 128
Final Level After Pumping: 177
Recommended Pump Depth:
Pumping Rate: 1
Flowing Rate:
Recommended Pump Rate:
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 1
Water State After Test: CLEAR
Pumping Test Method: 1
Pumping Duration HR: 8
Pumping Duration MIN: 0
Flowing: N

Draw Down & Recovery

Pump Test Detail ID: 934865534
Test Type: Draw Down
Test Duration: 45
Test Level: 177
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934611344
Test Type: Draw Down
Test Duration: 30

Test Level: 177
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934343986
Test Type: Draw Down
Test Duration: 15
Test Level: 177
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 935129902
Test Type: Draw Down
Test Duration: 60
Test Level: 177
Test Level UOM: ft

Appendix: Database Descriptions

Environmental Risk Information Services (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 Sep 2018

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-Nov 2016

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: 1999-Jul 31, 2018

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

List of commercial underground fuel oil tanks made available by the Fuels Safety Program of the Technical Standards & Safety Authority (TSSA). Ontario Regulation 213/01 of the Technical Standards and Safety Act (2000) requires that all underground tanks be registered with the TSSA. Note: the Fuels Safety Division does not register waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of commercial fuel tanks in the province. The TSSA updates information in its system on an ongoing basis; this listing is a copy of the data captured at one moment in time and is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

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: 1999-Jul 31, 2018

Compressed Natural Gas Stations: Private CNG

Canada has a network of public access compressed natural gas (CNG) refuelling stations. These stations dispense natural gas in compressed form at 3,000 pounds per square inch (psi), the pressure which is allowed within the current Canadian codes and standards. The majority of natural gas refuelling is located at existing retail gasoline that have a separate refuelling island for natural gas. This list of stations is made available by the Canadian Natural Gas Vehicle Alliance.

Government Publication Date: Dec 2012 - Jul 2018

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-Sep 2018

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-Oct 31, 2018

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-Nov 30, 2017

Dry Cleaning Facilities: Federal DRYCLEANERS

List of dry cleaning facilities made available by Environment and Climate Change Canada. Environment and Climate Change Canada's Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations (SOR/2003-79) are intended to reduce releases of tetrachloroethylene to the environment from dry cleaning facilities.

Government Publication Date: Jan 2004-Dec 2016

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: Oct 2011-Oct 31, 2018

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-Oct 31, 2018

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: Oct 2011-Oct 31, 2018

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-Oct 31, 2018

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

List of locations of historical occurrences of emergency events, including 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. EMHE record details are reproduced by ERIS under License with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2017.

Government Publication Date: Dec 31, 2016

List of TSSA Expired Facilities: Provincial EXP

List of facilities and tanks - for which there was once a registration - no longer registered with the Fuels Safety Program of the Technical Standards and Safety Authority (TSSA). Includes private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc. Tanks which have been removed from the ground are included in the expired facilities inventory held by the TSSA. Notes: the Fuels Safety Division did not register private fuel underground/aboveground storage tanks prior to January of 1990, or furnace oil tanks prior to May 1, 2002; nor does the Division register waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of expired tanks/tank facilities in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

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: Jun 2000-Aug 2018

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-Sep 2017

Fuel Storage Tank: Provincial FST

List of registered private and retail fuel storage tanks made available by the Fuels Safety Program of the Technical Standards & Safety Authority (TSSA). Ontario Regulation 213/01 of the Technical Standards and Safety Act (2000) requires that all underground tanks be registered with the TSSA. Notes: the Fuels Safety Division did not register private fuel underground/aboveground storage tanks prior to January of 1990, or furnace oil tanks prior to May 1, 2002; nor does the Division register waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of fuel storage tanks/tank facilities in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

Fuel Storage Tank - Historic: Provincial FSTH

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks. Public records of private fuel storage tanks are only available since the registration became effective in September 1989. This information is now collected by the Technical Standards and Safety Authority.

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-June 30, 2018

Greenhouse Gas Emissions from Large Facilities: Federal GHG

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

Government Publication Date: 2013-Dec 2016

TSSA Historic Incidents: Provincial HINC

List of historic incidences of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen recorded by the TSSA in their previous incident tracking system. The 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, the TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of historical fuel spills and leaks in the province. This listing is a copy of the data captured at one moment in time and is hence limited by the record date provided here.

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

List of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen reported to the Spills Action Centre (SAC) and made available by the Technical Standards and Safety Authority (TSSA). Under the Technical Standards & Safety Act (2000), the 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. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of fuel-related leaks, spills, and incidents in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

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: Sep 30, 2017

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*

Environmental Penalty Annual Report: Provincial MISA PENALTY

This database contains data from Ontario's annual environmental penalty report published by the Ministry of the Environment and Climate Change. These reports provide information on environmental penalties for land or water violations issued to companies in one of the nine industrial sectors covered by the Municipal Industrial Strategy for Abatement (MISA) regulations.

Government Publication Date: Jan 1, 2011 - Dec 31, 2017

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-Jan 2018

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: Dec 31, 2016

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-Apr 2018

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 Pipeline Incidents: Federal NEBI

Locations of pipeline incidents from 2008 to present, made available by the National Energy Board (NEB). Includes incidents reported under the Onshore Pipeline Regulations and the Processing Plant Regulations related to pipelines under federal jurisdiction, does not include incident data related to pipelines under provincial or territorial jurisdiction.

Government Publication Date: 2008-Jun 30, 2018

National Energy Board Wells: Federal NEBW

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

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES): Federal NEES

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

Government Publication Date: 1974-2003*

National PCB Inventory: Federal NPCB

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

Government Publication Date: 1988-2008*

National Pollutant Release Inventory: Federal NPRI

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

Government Publication Date: 1993-May 2017

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-August 31, 2018

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-May 2018

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-Oct 31, 2018

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, 2009-2014

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 the Environment and Climate Change maintains a database of licensed operators and vendors of registered pesticides.

Government Publication Date: 1988-Mar 2018

TSSA Pipeline Incidents: Provincial PINC

List of pipeline incidents (strikes, leaks, spills) made available by the Technical Standards and Safety Authority (TSSA). Under the Technical Standards & Safety Act (2000), the TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors, and equipment or appliances that use fuels. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of pipeline incidents in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

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-Oct 31, 2018

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: 1986-2016

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-Sep 2018

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 31, 2018

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-Jul 2018

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-Dec 31, 2016

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-Aug 2017

TSSA Variances for Abandonment of Underground Storage Tanks: Provincial VAR

List of variances granted for abandoned tanks. Under the Technical Standards and Safety Authority (TSSA) Liquid Fuels Handling Code and Fuel Oil Code, all underground storage tanks must be removed within two years of disuse. If removal of a tank is not feasible, an application may be sought for a variance from this code requirement.
Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of tank variances in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

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: Oct 2011-Oct 31, 2018

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: Dec 31, 2017

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 are included as reference.

Appendix F

Aerial Photographs

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1934
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

9015 Stanlet Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1955
Aerial Photograph

N
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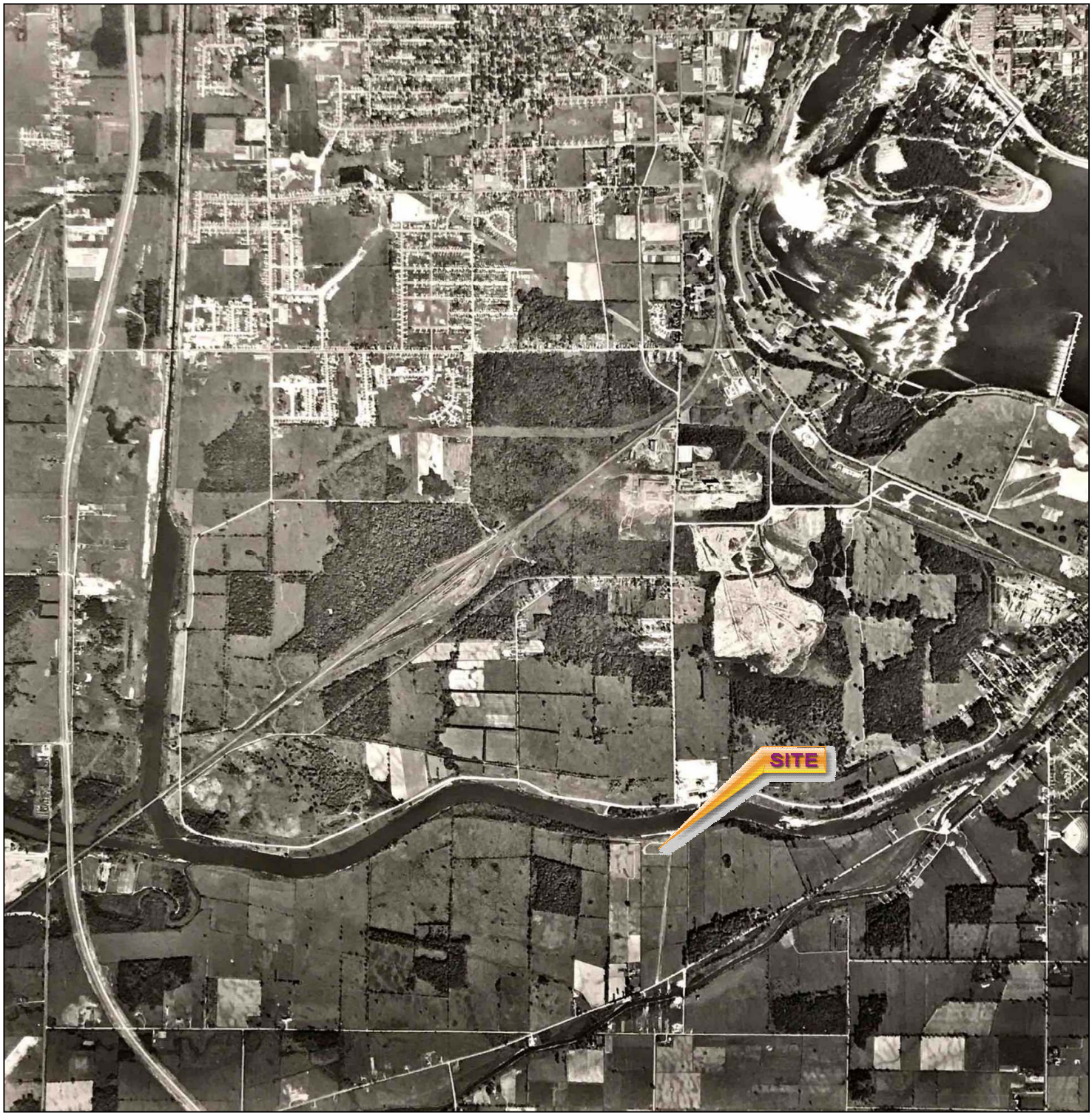
S

Phase One Environmental Site Assessment

9015 Stanlet Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20



wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1960
Aerial Photograph

N
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Phase One Environmental Site Assessment

9015 Stanlet Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1965 Aerial Photograph

N
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Phase One Environmental Site Assessment

**9015 Stanlet Avenue,
Niagara Falls, Ontario**

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1970
Aerial Photograph

N
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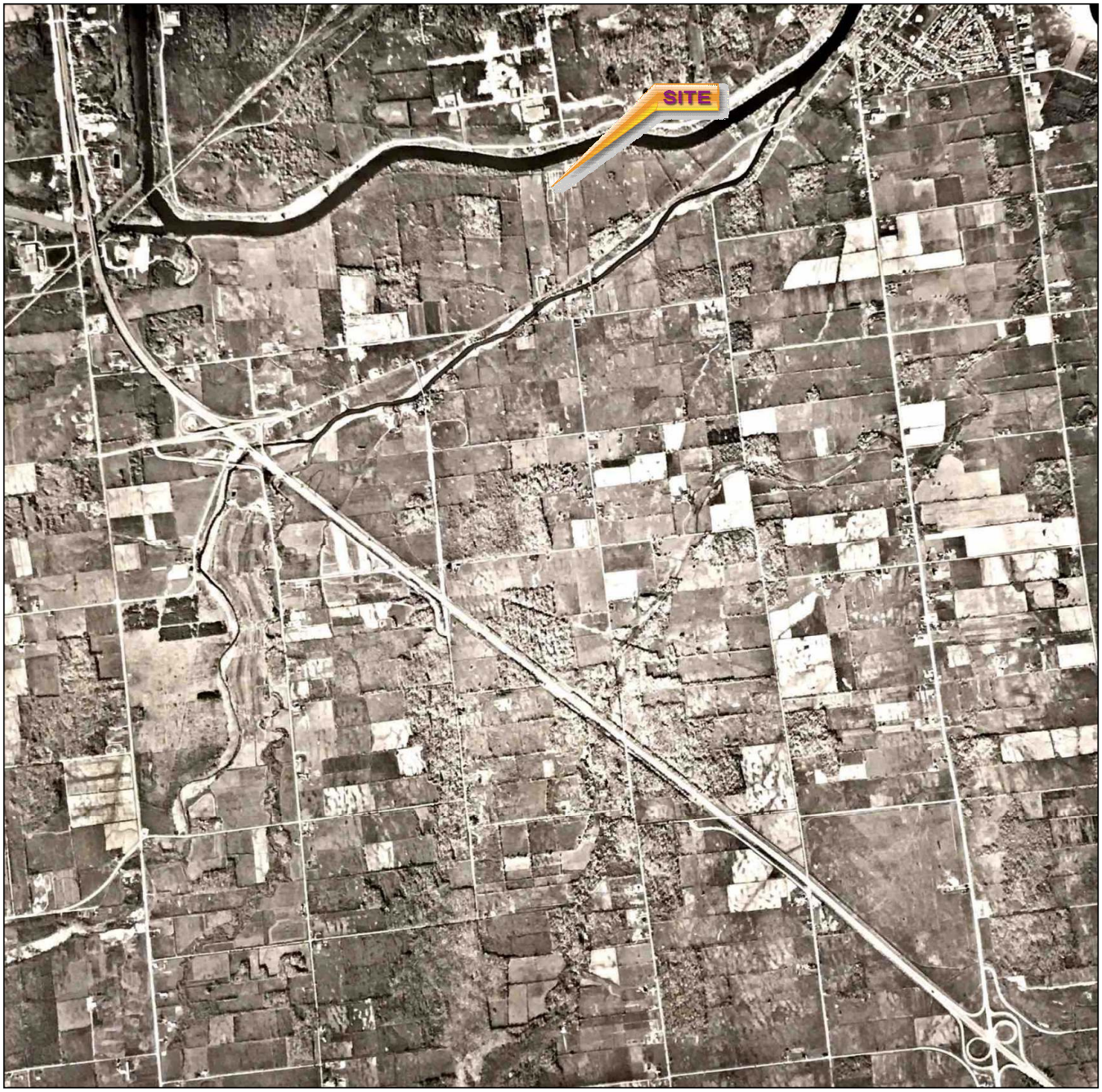
Phase One Environmental Site Assessment

9015 Stanlet Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20



wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1975
Aerial Photograph

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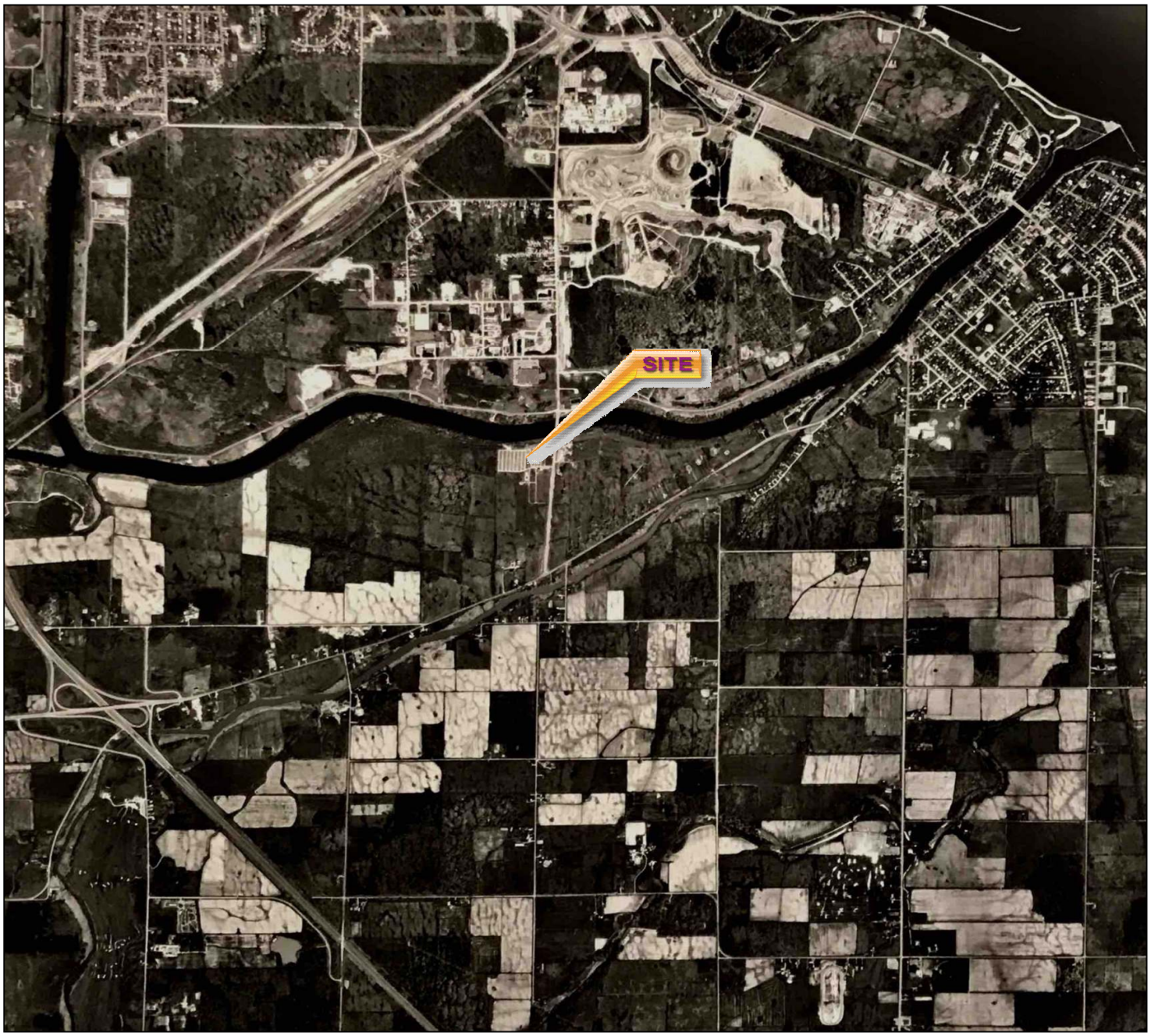
Phase One Environmental Site Assessment

9015 Stanlet Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20



wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1983
Aerial Photograph

N
W E
S

Phase One Environmental Site Assessment

9015 Stanlet Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1989
Aerial Photograph

N
W E
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Phase One Environmental Site Assessment

9015 Stanlet Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

1994
Aerial Photograph

N
W E
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Phase One Environmental Site Assessment

9015 Stanlet Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

2000
Aerial Photograph

N
W E
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Phase One Environmental Site Assessment

9015 Stanlet Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

2006
Aerial Photograph

N
W E
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Phase One Environmental Site Assessment

9015 Stanlet Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

2010
Aerial Photograph

N
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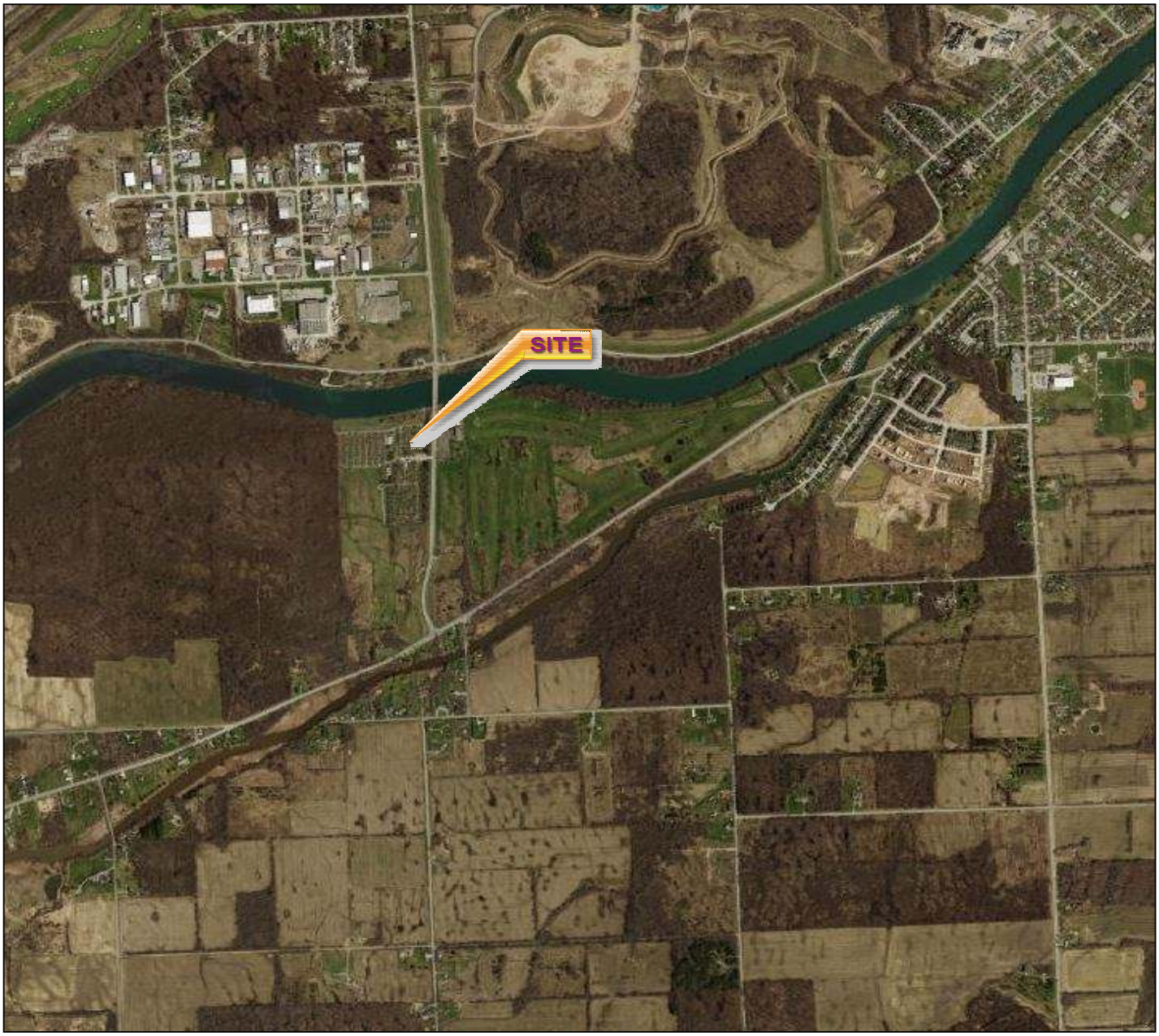
Phase One Environmental Site Assessment

9015 Stanlet Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20



wood.
3300 Merrittville Hwy., Unit 5
Thorold, Ontario L2V 4Y6

2015
Aerial Photograph

N
W E
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Phase One Environmental Site Assessment

9015 Stanlet Avenue,
Niagara Falls, Ontario

Project No.:	Scale:	Date:
SCT196351	Not to Scale	Apr-20

Appendix G

Phase One Property Photographs

Photo 1:
Office building/gatehouse.

Date:
January 24, 2019

Direction:
East

Photo 2:
Interior of office building/gatehouse.

Date:
January 24, 2019

Direction:
N/A

	**Photo 3:** General view of campground. **Date:** January 24, 2019 **Direction:** West

	**Photo 4:** General view of campground. **Date:** January 24, 2019 **Direction:** South

Photo 5:
Washroom/shower/ laundry facilities building and sewage pump house building.

Date:
January 24, 2019

Direction:
Southwest

Photo 6:
Welland River, adjacent to the north of the Site.

Date:
January 24, 2019

Direction:
Northeast

	**Photo 7:** On-site sewage works, showing septic tank and leaching bed, located in southern portion of Site.
	Date: January 24, 2019
	Direction: South

	**Photo 8:** Looking north from septic tank.
	Date: January 24, 2019
	Direction: North

Appendix H

Qualifications of the Assessors

QUALIFICATIONS OF THE ASSESSORS

Cameron McCann, M.Sc., P.Geo.

Environmental Scientist

Mr. Cameron McCann is an Environmental Scientist with experience conducting Phase One/I and Two/II Environmental Site Assessments (ESAs) and site remediation for various private, legal, financial and corporate clients. The Phase Two/II ESAs have included drilling, groundwater monitoring and sampling, testpitting, pipeline and underground storage tank (UST) removal programs. Phase Two/II ESAs have included remediation of petroleum, metal and polycyclic aromatic hydrocarbon-impacted soils. Mr. McCann holds an M.Sc. in Earth and Environmental Science from McMaster University in Hamilton, Ontario and has been thoroughly trained to conduct Phase I Environmental Site Assessments (ESAs) in accordance with the Phase One/I ESA standards as defined by Ontario Regulation 153/04 and CAN/CSA Z768-01.

Tracy Wolowidnek, B.Sc.

Environmental Scientist

Ms. Tracy Wolowidnek is an Environmental Scientist with ten years of experience in the environmental management and consulting industry. Tracy has a broad range of experience in the environmental field, having worked on numerous Phase One/I, Two/II and III Environmental Site Assessments (ESAs), site remediation, designated substance surveys, waste audits and environmental impact assessment projects. These projects were completed on residential, municipal, commercial and industrial sites for various clients, including local and regional municipalities, financial institutions, school boards, and private commercial and industrial clients. As a project manager, Tracy has coordinated and managed numerous Phase One/I and Two/II ESAs and site remediation projects. Tracy also has extensive experience with interpretation and reporting of analytical data and proposal and report preparation. Tracy has previous work experience with watershed monitoring, including habitat characterization, fish community assessment and benthic invertebrate sampling. Tracy holds a B.Sc. in Biology and Environmental Science from the University of Western Ontario in London, Ontario and a Post Graduate Certificate in Environmental Management and Assessment from Niagara College in Niagara-on-the-Lake, Ontario.

Braedan Huras, B.Sc., EPt

Environmental Technician

Mr. Braedan Huras is an Environmental Technician with experience conducting Phase One/I and Two/II Environmental Site Assessments (ESAs) and site remediations for various clients. The Phase Two/II ESAs have included drilling, groundwater monitoring and sampling, test pitting, and remediation of metal and inorganics-impacted soils. He has been thoroughly trained to conduct Phase One Environmental Site Assessments (ESAs) in accordance with the Phase One/I ESA standards as defined by Ontario Regulation 153/04 and CAN/CSA Z768-01. Mr. Huras holds an B.Sc. (Hons.) in Integrated Science with a Concentration in Biology from McMaster University. He has a post graduate certificate in Environmental Management and Assessment from Niagara College, in addition, he is certified by Eco Canada as an Environmental Professional in Training.

Patrick Shriner, P.Geo., CPG

Associate, Environmental Geoscientist

Mr. Shriner is an Associate Environmental Geoscientist in Wood's Niagara (St. Catharines/Thorold) office. Patrick has over 28 years of experience on a wide range of environmental and municipal projects including: environmental site assessment (ESA) and remediation; peer review, designated substances surveys, waste management; landfill investigations and monitoring; hydrogeological investigations; risk assessment and risk management. Patrick is responsible for senor review and Quality Assurance of environmental projects and proposals undertaken by the Niagara office as well as senior technical support for the design, implementation and management of ESAs, site remediation projects, Brownfields clean-up and redevelopment. Patrick has participated in over 750 Phase One/I ESAs undertaken on behalf of a variety of clients including commercial and industrial manufactures, municipal governments, financial institutions and legal firms. Patrick is a recognized Qualified Person (QP) for ESAs under Ontario Regulation 153/04 – Records of Site Condition (RSC) and has filed several RSCs for a variety of properties across Ontario.

Appendix I

Limitations

Limitations

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:

   (a) The Standard Terms and Conditions which form part of Wood's proposal, dated July 11, 2019 and Authorization to Proceed, signed by the Client on July 17, 2019;

   (b) The Scope of Services;

   (c) Time and Budgetary limitations as described in Agreement; and,

   (d) The Limitations stated herein.

2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of the Agreement, or the conclusions presented.

3. The conclusions presented in this report were based, in part, on visual observations of the Phase One Property and attendant structures. Our conclusions cannot and are not extended to include those portions of the Phase One Property or structures which were not reasonably available, in Wood's opinion, for direct observation.

4. The environmental conditions at the Phase One Property were assessed, within the limitations set out above, having due regard for applicable environmental regulations as of the date of the inspection. A review of compliance by past owners or occupants of the Phase One Property with any applicable local, provincial or federal by-laws, orders-in-council, legislative enactments and regulations was not performed.

5. The Phase One Property history research included obtaining information from third parties and employees or agents of the owner. No attempt has been made to verify the accuracy of any information provided, unless specifically noted in our report.

6. Where testing was performed, it was carried out in accordance with the terms of our contract providing for testing. Other substances, or different quantities of substances testing for, may be present on Phase One Property and may be revealed by different of other testing not provided for in our contract.

7. Because of the limitations referred to above, different environmental conditions from those stated in our report may exist. Should such different conditions be encountered, Wood must be notified in order that it may determine if modifications to the conclusions in the report are necessary.

8. The utilization of Wood's services during the implementation of any remedial measures will allow Wood to observe compliance with the conclusions and recommendations contained in the report. Wood's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.

9. This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or in part, or any reliance thereon, or decisions made based on any information of conclusions in the report, is the sole responsibility of such third party. Wood accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.

10. This report is not to be given over to any third party for any purpose whatsoever without the written permission of Wood.

11. Provided that the report is still reliable, and less than 12 months old, Wood will issue a third-party reliance letter to parties Client identifies in writing, upon payment of the then current fee for such letters. All third parties relying on Wood's report, by such reliance agree to be bound by our proposal and Wood's standard reliance letter. Wood's standard reliance letter indicates that in no event shall Wood be liable for any damages, howsoever arising, relating to third-party reliance on Wood's report. No reliance by any party is permitted without such agreement.

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
OAKLANDS GOLF COURSE
9870 STANLEY AVENUE
NIAGARA FALLS, ONTARIO

Submitted to:

RICCI LAW PROFESSIONAL CORPORATION
4025 Dorchester Road, Suite 331
Niagara Falls, Ontario
L2E 7K8

Submitted by:

Wood Environment & Infrastructure Solutions,
a Division of Wood Canada Limited
3300 Merrittville Hwy., Unit #5,
Thorold, Ontario
L2V 4Y6

September 2, 2021

SCT196351

Distribution:

- Ricci Law Professional Corporation – 1 electronic copy; and
- Wood - 1 electronic copy.

1.0 EXECUTIVE SUMMARY

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood) was retained by Ricci Law Professional Corporation (the Client) to conduct a Phase Two Environmental Site Assessment (ESA) of the property located at 8970 Stanley Avenue, in the City of Niagara Falls (the City), Ontario (the "Phase Two Property"). The Phase Two Property is occupied by Oaklands Golf Course. The Site was developed for use as a golf course in the early 1970s and has remained in that use until present, however, the golf course is no longer in operation as of the 2019 season. It is Wood's understanding that a Record of Site Condition (RSC), acknowledged by the Ministry of Environment, Conservation and Parks (MECP), is required as a condition of the planned development of the Phase Two Property for residential use. The investigation is required in support of the RSC.

Wood previously completed a Phase I ESA, the findings of which were documented in the report entitled *"Phase I Environmental Site Assessment, 8970 Stanley Avenue, Niagara Falls, Ontario"* dated February 7, 2019 (2019 Phase I ESA). Wood subsequently upgraded the 2019 Phase I ESA to a Phase One ESA, prepared in accordance with the requirements of *Ontario Regulation 153/04* as amended (*O. Reg. 153/04*). The revised report, entitled *"Phase One Environmental Site Assessment, Oaklands Golf Course, 8970 Stanley Avenue, Niagara Falls, Ontario",* was dated September 1, 2021 (2021 Phase One ESA).

This investigation was carried out in accordance with Wood's proposed scope of work for Phase Two ESA as described in our proposal, dated July 11, 2019, signed by the Client on July 17, 2019.

The primary findings are as follows:

- Wood advanced ten boreholes, four of which were completed as monitoring wells, excavated four testpits, collected 31 surface soil samples and completed an elevation survey between September and December 2019. The locations of the boreholes, monitoring wells, testpits and surface soil samples were selected to address the APECs identified during the Phase One ESA.

- The subsurface conditions encountered during the investigation are described as concrete, topsoil or gravelly sand fill underlain by a silty clay/clayey silt fill followed by native silty clay/clayey silt to the maximum depth explored of 6.1 mbgs. The fill thickness ranged from 0.3 to 2.0 mbgs. Bedrock was not encountered. Petroleum -like odours and black colouration was identified in borehole BH/MW2 (0.1 to 0.6 mbgs). Black staining was identified in borehole BH6 (0.0 to 0.6 mbgs, 0.6 to 0.75 mbgs) and BH10 (0.0 to 0.15 mbgs)

- The assessment criteria applicable to the Phase Two Property, for the purposes of an RSC filing, are the Table 1 SCS Full Depth Background Site Condition Standards for residential/parkland/ institutional/industrial/commercial/community property for medium and fine textured soils.

- Forty-eight soil samples were submitted for analysis of one or more of metals including hydrides, EC, SAR, PCBs, OCs, PHCs, BTEX and VOCs. The results of the soil testing indicated all parameters met the Table 1 SCS with the following exceptions:

    - PHCs: BH/MW9-1-D 0.15 mbgs and BH10-1-D 0.15 mbgs; and

    - OCs: SS7 0.1-0.3 mbgs, SS7A 0.1-0.3 mbgs, SS7B 0.1-0.3 mbgs, SS13 0.1-0.3 mbgs, SS13A 0.1-0.3 mbgs, SS13B 0.1-0.3 mbgs, SS201 0.1-0.3 mbgs, SS202 0.1-0.3 mbgs, SS203 0.1-0.3 mbgs, SS205 0.1-0.3 mbgs, SS206 0.1-0.3 mbgs and SS302 0.1-0.3 mbgs.

- Five ground water samples were submitted for analysis of PHCs, BTEX and VOCs. The results of the groundwater testing indicated all the parameters met the Table 1 SCS.

- The Phase Two Property is not in compliance with the Table 1 SCS, and an RSC cannot be filed at this time.

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2.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood) was retained by Ricci Law Professional Corporation (the Client) to conduct a Phase Two Environmental Site Assessment (ESA) of the property located at 8970 Stanley Avenue, in the City of Niagara Falls (the City), Ontario (the "Phase Two Property"; see **Figure 1**). The Phase Two Property is occupied by Oaklands Golf Course. The Site was developed for use as a golf course in the early 1970s and has remained in that use until present, however, the golf course is no longer in operation as of the 2019 season. **Figure 2** illustrates the lot configuration of the Phase Two Property.

It is Wood's understanding that a Record of Site Condition (RSC), acknowledged by the Ministry of Environment, Conservation and Parks (MECP), is required as a condition of the planned redevelopment of the Phase Two Property for residential use. The Phase Two ESA is required in support of the RSC.

Wood previously completed a Phase I ESA, the findings of which were documented in the report entitled *"Phase I Environmental Site Assessment, 8970 Stanley Avenue, Niagara Falls, Ontario"* dated February 7, 2019 (2019 Phase I ESA). Wood subsequently upgraded the 2019 Phase I ESA to a Phase One ESA, prepared in accordance with the requirements of *Ontario Regulation 153/04* as amended (*O. Reg. 153/04*). The revised report, entitled *"Phase One Environmental Site Assessment, Oaklands Golf Course, 8970 Stanley Avenue, Niagara Falls, Ontario"*, was dated September 1, 2021 (2021 Phase One ESA).

This work program is required for filing an RSC under *O. Reg. 153/04*, as amended. As such all work completed under this project was performed in general accordance with standard engineering practices and the following documents:

- Ministry of the Environment (MOE) document entitled *"Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04"* dated June 2011;
- Ministry of the Environment and Energy (MOEE) document entitled *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"*, dated December 1996;
- MOE document entitled *"Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act"* issued by the Laboratory Services Branch of the MOE and dated March 9, 2004, amended as of July 1, 2011 (Analytical Protocol); and

- All analytical results were compared to the appropriate Site Condition Standards (SCS) identified in the MECP document entitled; *"Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act"* dated April 15, 2011 (MECP SCS).

This investigation was carried out in accordance with Wood's proposed scope of work for Phase Two ESA as described in our proposal, dated July 11, 2019, signed by the Client on July 17, 2019.

2.1 Site Description

The Phase Two Property is located on the east side of Stanley Avenue and extends from Lyons Creek Road to the Welland River, in Niagara Falls, Ontario **(Figure 1).** The Site lies in a rural area and is surrounded by commercial use (Oaklands Campground) followed by undeveloped land on the west side, Welland River followed by Marineland on the north, Lyon's Creek Road followed by agricultural and undeveloped land on the south, and the confluence of the Welland River and Lyon's Creek followed by residential land to the east.

The Site is an irregular-shaped property, a total of approximately 58 hectares (142 acres) in area. The Site currently has three (3) buildings: the main club house building, a maintenance/golf cart storage building and a shed. The Site is currently closed and did not open for the 2019 golf season. The Site representative informed Wood that there are no intentions to re-open next season. The majority of the Site is a golf course and therefore consists of semi-maintained grass and other vegetation, with some large trees and walking/golf cart paths throughout the property.

Based on a review of the information sources identified above, the Site has been occupied by commercial land use (Oaklands Golf Course) since 1970.

The air photos reviewed show a cleared portion of land at the northeast corner of Stanley Avenue and Lyons Creek Road in 2000. In the 2006 air photo, the cleared portion appears to have soil disturbance or potential infilling.

Based on the historical review completed during the Phase I ESA, the Phase Two Property was occupied by agricultural use in the 1930s, until development with the golf course in 1970.

2.2 Property Ownership

The property ownership and Client contact information is as follows:

Client	Ricci Law Professional Corporation on behalf of the owner 2610832 Ontario Inc.	4025 Dorchester Road, Suite 331 Niagara Falls, Ontario L2E 7K8 Contact: Ms. Jennifer Ricci 289-932-1640 riccilaw2008@gmail.com
Owner	2610832 Ontario Inc.	8485 Montrose Road, Niagara Falls, Ontario L2H 3L7 Contact: Mr. Frank Ianniello franki@panoramicproperties.ca

2.3 Current and Proposed Future Uses

The Phase Two Property is currently developed for commercial use (golf course), although it is no longer in operation. The proposed future use is residential.

2.4 Applicable Site Condition Standard

The SCS applicable to the Phase Two Property have been evaluated based on the following rationale:

- The proposed property use is residential and therefore the SCS for residential property use would apply;
- Based on a search of the MECP interactive well record mapping tool completed by Wood for the Phase I ESA, there are no domestic water wells on the Phase Two Property, however, a domestic (potable) ground water well was present approximately 300 m southwest of the Phase Two Property, at a property on the north side of Rexinger Road, approximately 160 m west of Stanley Avenue. This northern boundary of the well property is approximately 160 m southwest of the Phase Two Property. This well was installed in 1966 (Well ID 6602251). It has not known if this well is still present and in use for domestic purposes. As such, the SCS for a potable ground water condition would apply;
- Based on observations in the boreholes and testpits completed for the Phase Two ESA, the native soils at the Site consist of silty clay to clayey silt. As such, the soil at the Phase Two Property was classified as a medium and fine textured soil (i.e., contains 50% or more by mass of particles that are smaller than 75 µm (*O. Reg. 153/04, s.42 (2)*));

- In accordance with *O. Reg. 153/04*, the Phase Two Property includes land that is within 30 m of a "water body": the Welland River is located immediately north of the Phase Two Property, and Lyon's Creek is located approximately 30 m south of the Phase Two Property;

- Based on boreholes and testpits completed during this Phase Two ESA as well as on geologic mapping discussed in Section 3.1, the depth to bedrock is greater than 2 m;

- The Phase Two Property was evaluated against the criteria for *Environmentally Sensitive Areas*, as defined by *O. Reg. 153/04* as amended:

    - Soil pH values of 6.7 and 7.6 were reported for six samples tested during the investigation (**Table 2**). The reported soil pH was within the range of 5.0 to 9.0 units for surface soil (surface to 1.5 metres below ground surface [mbgs]) and as such, application of generic criteria is acceptable;

    - The Phase Two Property, and lands within 30 m of the Property, were assessed for *Areas of Natural Significance*, as defined by *O. Reg. 153/04* as amended. An Area of Natural Significance means any of the following:

        - An area reserved or set apart as a provincial park or conservation reserve under the *Provincial Parks and Conservation Reserves Act, 2006;*
        - An area of natural and scientific interest (ANSIs; life science or earth science) identified by the Ministry of Natural Resources and Forestry (MNRF) as having provincial significance;
        - A wetland identified by the MNRF as having provincial significance;
        - An area designated by a municipality in its official plan as environmentally significant, however expressed, including designations of areas as environmentally sensitive, as being of environmental concern and as being ecologically significant.
        - An area designated as an escarpment natural area or an escarpment protection area by the Niagara Escarpment Plan under the *Niagara Escarpment Planning and Development Act;*
        - An area identified by the MNRF as significant habitat of a threatened or endangered species;
        - An area which is habitat of a species that is classified under Section 7 of the *Endangered Species Act, 2007* as a threatened or endangered species;

- Property within an area designated as a natural core area or natural linkage area within the area to which to Oak Ridges Moraine Conservation Plan under the *Oak Ridges Moraine Conservation Act, 2001* applies; and
- An area set apart as a wilderness area under the *Wilderness Areas Act*.

    - Based on a review of the Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario Make a Map: Natural Heritage Areas online mapping tool, two provincially significant wetlands (PSWs) are present in the immediate vicinity of the Phase Two Property, including the Lyon's Creek Wetland Complex and the Welland River East Wetland Complex (**Figure 2**). The PSW lands are also classified as Environmental Protection Area in the City of Niagara Fall's Official Plan and the Regional Municipality of Niagara's Core Natural Heritage Map. As such, the Phase Two Property includes land that is identified as an Area of Natural Significance and is therefore classified as an Environmentally Sensitive Area.

Based on the above site characteristics, the SCS currently applicable to the Phase Two Property, are the Table 1 Full Depth Background Site Condition Standards for residential/parkland/ institutional/industrial/commercial/community property use and medium and fine textured soils (the Table 1 SCS).

3.0 BACKGROUND INFORMATION

3.1 Physical Setting

The elevation at the Site is 177 metres above sea level (mASL). The UTM coordinates at the approximate centre of the Site are 656587 m east and 4767656 m north (NAD 83 UTM 17N). The topography across the central (developed golf course) portion of the Site is relatively flat, however, slopes steeply at the north end towards the Welland River. The Welland River is located adjacent to the north of the Site.

According to the **2010 Surficial Geology of Southern Ontario Miscellaneous Release – Data 128 REV**, published by the **Ontario Geological Survey (OGS)**, the geology near the Site is interpreted to consist of fine textured glaciolacustrine deposits consisting of silt and clay with minor sand, and described as massive to well laminated.

The **2007 Paleozoic Geology of southern Ontario Miscellaneous Release – Data 219**, published by the **Armstrong, D.K. and Dodge, J.E.P. of the OGS**, describes the bedrock in the area to consist of dolostone, shale and evaporites of the Salina Formation. Bedrock is anticipated to be encountered at depths in the range of 26 to 44 metres below ground surface (mbgs) (**Bedrock Topography of the Niagara and Niagara-on-the-Lake Area, Southern Ontario**, Ontario Geological Survey Preliminary Map P.2400, 1981).

The regional ground water flow direction, based on topographic features and knowledge gained from other sites in the area, is expected to be generally to the north towards the Welland River. Locally, however, the shallow ground water flow may be influenced by underground utility trenches, conduits, and structures, variations in soil type, and minor fluctuations in topography.

3.2 Past Investigations

Background materials relevant to the discussion provided herein are documented in more detail in the 2021 Phase One ESA. Potentially Contaminating Activities (PCAs) were identified on the Phase Two Property with respect to maintenance of on-site equipment (PCA #27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles), fuel storage associated with site operations (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks), use of pesticides throughout the golf course and pesticide storage (PCA #40 – Pesticide (including Herbicides, Fungicides and Anti Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications) and presence of an electrical transformer (PCA #55 – Transformer Manufacturing, Processing and Use). These PCAs result in areas of potential

environmental concern (APECs) on the Phase Two Property. The Phase Two ESA was completed at the Phase Two Property to address these APECs.

It is noted that, during the Phase One ESA, no PCAs were identified at properties in the Phase One Study Area.

4.0 SCOPE OF THE INVESTIGATION

4.1 Overview of Site Investigation

The investigation consisted of the following activities:

- Developing a Health & Safety Plan and a Sampling and Analysis Plan for the intrusive work at the Phase Two Property. In accordance with Schedule E of *O. Reg. 153/04 as amended*, a copy of the Sampling and Analysis Plan is provided in **Appendix A**;
- Undertaking clearance of all public underground utility services (i.e., telephone, hydro, natural gas, cable television and sewer/water). Wood requested that the owner identify any privately-owned services as well prior to commencement of the work;
- Advancing a total of 10 boreholes (BH1 to BH10) at the Phase Two Property to maximum depths ranging from 2.1 to 6.1. mbgs using a Bosch Hammer or Geoprobe 7822DT;
- Excavating four testpits to depths between 1.0 and 2.5 mbgs to allow for the collection of soil samples to assess the quality of the fill material in the southwest corner of the Phase Two Property;
- Collecting one (1) surface soil samples to assess the soil quality in the vicinity of the pole-mounted transformer at the west boundary of the Phase Two Property;
- Collecting thirty (30) surface soil samples to assess the soil quality throughout the golf course for residual impacts from the use of pesticides;
- Field screening all soil samples collected during the drilling and testpitting activities both visually and measuring Combustible Organic Vapours (COVs) and Total Organic Vapours (TOVs) utilizing a RKI Eagle 2, equipped with dual sensors; the sensors were calibrated to a known isobutylene standard (for TOV sensor) and to a known hexane standard (for COV sensor);
- Installing ground water monitoring wells in four boreholes (BH2, BH7, BH8 and BH9) and developing the wells after installation;

- Conducting ground water monitoring in the newly installed wells including measuring ground water levels and checking for light non-aqueous phase liquids (LNAPL) and dense non-aqueous phase liquids (DNAPL);
- Purging the monitoring wells using a low flow sampling technique with dedicated sampling equipment prior to collecting ground water samples;
- Completing an elevation survey of all testpits and boreholes;
- Submitting selected soil samples for laboratory analyses for contaminants of potential concern (COPCs) including:
    - metals including hydrides,
    - inorganics, including pH, electrical conductivity (EC) and sodium adsorption ratio (SAR);
    - petroleum hydrocarbons in the F1 to F4 ranges (PHCs);
    - volatile organic compounds (VOCs), and/or benzene, toluene, ethylbenzene and xylenes (a short list of VOCs collectively known as BTEX);
    - polychlorinated biphenyls (PCBs); and
    - organochlorine pesticides (OCs).
- Evaluating the results of the chemical analysis against the applicable assessment and criteria; and
- Preparing a report documenting the findings of the investigation.

4.2 Media Investigated

Soil samples collected during the Phase Two ESA were collected and submitted for laboratory analysis of the identified COPCs. As the COPCs included PHCs and VOCs, which can become mobilized and potentially be transported to the ground water, ground water monitoring wells were installed in four of the boreholes drilled for the Phase Two ESA. Ground water samples from the monitoring wells were collected and submitted for laboratory analysis of the identified COPCs.

Sediment samples were not collected during the Phase Two ESA as no water bodies are present on the Phase Two Property.

4.3 Phase One ESA Conceptual Site Model

The rationale for the development of the Phase One Conceptual Site Model (CSM) is provided in the 2021 Phase One ESA.

The Phase One CSM provides background information and physical description of the Phase One Property including the geology, hydrogeology and sub-surface structures that can influence the potential movement of any contaminants that may have been released, and any known contaminant impacts to the Phase One Property.

Based on the 2021 Phase One ESA, the APEC associated with the former PCA on the Phase One Property is as follows:

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity*	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC-1: General use of the maintenance workshop and shed to maintain equipment associated with site operations	Northwestern area of the property (area inside and surrounding maintenance workshop and shed)	#52 – storage, maintenance, fueling and repair of equipment, vehicles, and material used to maintain transportation systems	On-Site (inside maintenance workshop and shed)	PHCs/VOCs/ Metals/PCBs	Soil and Ground Water
APEC-2: Fuel storage (in ASTs) fuel equipment associated with site operations	Northwestern area of the property (area inside and surrounding maintenance workshop and shed)	#28 – gasoline and associated products storage in fixed tanks	On-Site (inside maintenance workshop and shed)	PHCs/VOCs/ Metals/PCBs	Soil and Ground Water
APEC-3: Potentially contaminated fill materials	Southwestern corner of the Phase One Property (southern area of the western parcel)	#30 – importation of fill material of unknown quality	On-Site (southwestern corner of the Phase One Property)	Metals/PHCs/ BTEX	Soil
APEC-4: Use of pesticides throughout the golf course	Majority of the eastern and central parcels of the property and the central portion of the western parcel	#40 – pesticides (including herbicides, fungicides and anti-fouling agents) manufacturing, processing, bulk storage and large-scale applications	On-Site (greens, fairways, and tee boxes of the golf course and driving range)	Organochlorine pesticides	Soil

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity*	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC-5: Pesticide storage	Inside the maintenance shed	#40 – pesticides (including herbicides, fungicides and anti-fouling agents) manufacturing, processing, bulk storage and large-scale applications	On-Site (inside the maintenance shed)	Organochlorine pesticides	Soil
APEC-6: Presence of electrical transformer	Western edge of the property underneath the electrical pole	#55 - transformer manufacturing, processing and use	On-Site (located on an electrical pole on the western edge of the property)	PCBs	Soil

*Potentially Contaminating Activity (PCA) described specifically for the Phase One Property with reference to the applicable item number in the Table of Potentially Contaminating Activities provided in Schedule D of *O. Reg. 153/04* as amended, where applicable.

PHCs – Petroleum Hydrocarbons, VOCs – Volatile Organic Compounds, BTEX – Benzene, Toluene, Ethylbenzene and Xylene, PCBs – Polychlorinated Biphenyls

4.4 Deviations from Sampling and Analysis Plan

The Sampling and Analysis Plan is included in **Appendix A**. There were no deviations from the Sampling and Analysis Plan.

4.5 Impediments

There were no physical impediments or denial of access during the investigation.

5.0 INVESTIGATION METHOD

5.1 General

This section describes the methods used during this investigation work, including all soil sampling activities. Quality Assurance/Quality Control (QA/QC) procedures are also discussed. The test pitting, surface soil sampling, borehole drilling, monitoring well installations, ground water monitoring and elevation survey activities were undertaken between September and December 2019.

The investigation activities were conducted in accordance with Wood's Standard Operating Procedures (SOPs) as of July 2011 and updated in October 2013. The Sampling and Analysis Plan (**Appendix A**) lists the relevant SOPs.

5.2 Intrusive Investigation

5.2.1 Drilling

Ten boreholes (BH1 to BH10) were drilled on August 28th, 2019 by Direct Environmental Drilling Inc. (DED) of St. Thomas, Ontario (MECP License Number 7320). The boreholes were advanced to maximum depths of 2.1 to 6.1 mbgs using a Geoprobe 7822DT (exterior locations and accessible interior locations) or a Bosch Hammer (interior locations not accessible by Geoprobe). Continuous core samples of 1.5 m lengths were obtained throughout the borehole advancement using the Geoprobe's macro core sampling system, which uses dedicated (disposable) sample liners to prevent cross contamination. Continuous core samples of 0.6 m lengths were obtained throughout the borehole advancement using the Bosch Hammer. Four boreholes – BH2, BH7, BH8 and BH9 - were completed as ground water monitoring wells to depths of 2.1, 6.1, 6.1 and 2.1 mbgs, respectively.

The locations of the boreholes/monitoring wells are indicated on **Figure 2**. The borehole logs are included in **Appendix B**.

Soil cuttings generated during the borehole investigation were stored in 205 litre (L) drums.

5.2.2 Excavation – Testpitting

Four testpits were excavated on September 17, 2019 utilizing a JCB 3CXeco rubber-tired backhoe operated by H.S. Cole Contracting and Excavating, of Fenwick, Ontario. The testpits were excavated to maximum depths between 1.5 and 2.3 mbgs. Discrete samples were taken at intervals of approximately 0.5 m.

The locations of the testpits are indicated on **Figure 2**. The testpit logs are included in **Appendix B**.

5.2.3 Surface Soil Sampling

Thirteen surface soil samples were collected manually by Wood on September 18, 2019 and December 4, 2019. The soil samples were collected over a depth range of 0.1 to 0.3 mbgs.

The locations of the surface samples are indicated on **Figure 2**.

5.3 Soil: Sampling

Soil samples collected during excavating activities were split into duplicate fractions upon recovery. The primary sample fractions were placed into laboratory supplied vials with 2 millilitre (mL) of preservative and unpreserved glass jars with Teflon-lined lids and subsequently stored in coolers on ice for future potential laboratory analysis. The duplicate sample fractions were placed in resealable plastic sample bags and stored at ambient temperature for subsequent field vapour screening. All soil samples were collected in accordance with strict environmental sampling protocols to minimize loss of volatile organics and to ensure reliable and representative results. All soil sampling equipment (including trowels, spatulas, spoons, etc.) was thoroughly decontaminated between soil sample locations to prevent potential cross-contamination.

The subsurface conditions encountered at the Phase Two Property are described in the borehole and testpit logs provided in **Appendix B**.

Visual or olfactory evidence of petroleum hydrocarbon or other chemical impacts were not observed by Wood during the test-pitting program.

5.4 Field Screening Measurements

All soil samples collected during the drilling and test-pitting were screened in the field for gross evidence of negative environmental impact including staining and odours. Soil sample headspace screening was also performed to facilitate sample selections for laboratory analysis and to provide an assessment of the vertical contaminant distributions at each location. The duplicate soil sample fractions were screened for COV and TOV concentrations using the sample headspace method. COV and TOV concentrations were measured using an RKI EAGLE 2^{TM} combustible vapour analyzer equipped with dual sensors and calibrated to known hexane and isobutylene standards and operated in methane elimination mode. The RKI EAGLE 2^{TM} can detect 0-11,000 parts per million (ppm) and 0-100% Lower Explosive Limit (LEL) with an accuracy of ±5% and the calibration standard is Hexane. The equipment is calibrated every day prior to the commencement of

fieldwork.

The TOV/COV screening measures the cumulative organic/combustible vapour present within sample headspace. TOV/COV results are semi-quantitative at best and are generally only used for relative sample comparison purposes when selecting samples from individual testpits for laboratory analysis.

Soil samples were selected for laboratory analysis based on observations in the field. The depth intervals of samples selected for analysis and the parameters they were submitted for are included in the Tables appendix at the end of this report.

The soil vapour concentrations are included in the borehole and testpit logs in **Appendix B**. There were no deviations from the field screening method from the Sampling and Analysis Plan.

5.6 Ground Water: Monitoring Well Installation

Overburden monitoring wells were installed in three of the boreholes (BH/MW2, BH/MW7, BH/MW8 and BH/MW9) to obtain hydrogeologic and ground water quality information from the hydrostratigraphic zone. The monitoring wells were installed by DED using a Geoprobe 7822DT depths ranging from 2.1 to 6.1 mbgs. The monitoring wells were installed by using 150 mm solid stem augers for exterior boreholes or placed directly into the borehole for interior boreholes. All drilling equipment was washed prior to coming to the Phase Two Property and drilling proceeded from the least to most inferred contaminated borehole to reduce the potential for cross-contamination. No ground water samples were collected during drilling.

The monitoring wells were constructed using 50 mm or 25 mm diameter, schedule 40, flush-joint threaded PVC monitoring well supplies. The monitoring wells were completed with a 1.52 or 3.05 m length of #10 mil slotted intake screen. The tops of the intake screens were then extended beyond the ground surface using solid riser pipe. A silica sand filter pack was placed between the intake screen and the wall of the borehole. The filter pack was extended approximately 0.3 m above the top of the well screen. A grout/bentonite seal was placed above the sand pack to surface. The wells were completed with monument or flushmount steel casings. The locations of the monitoring wells are shown in **Figure 2**. Details of the monitoring well constructions are included in the borehole logs in **Appendix B.**

The ground water monitoring wells were instrumented with dedicated Waterra^{TM} foot valve inertial pumps fitted with polyethylene tubing to facilitate well development.

5.7 Ground Water: Field Measurement of Water Quality Parameters

The wells were developed by removing three well volumes using the dedicated instrumentation (i.e., foot valve and tubing) on September 17 and 25, 2019 (BH/MW2, BH/MW7, BH/MW8 and BH/MW9). Wood recorded the stabilization parameters (including pH, conductivity and temperature) as outlined in Wood's SOPs. During development, an oil/water interface meter was used to measure potential accumulations of LNAPL or DNAPL, and ground water levels in the wells.

5.5 Ground Water: Sampling

Following monitoring and purging activities, Wood collected ground water samples (BH/MW2, BH/MW7, BH/MW8 and BH/MW9) on October 23, 2019 using low flow sampling techniques. The samples were collected into laboratory-provided containers using the dedicated instrumentation. Ground water samples for metals and hydrides both were field-filtered. All samples were stored in coolers on ice after collection and during transportation to the laboratory where they were delivered under continuous Chain of Custody documentation.

Representative ground water samples collected from the wells during the investigation were submitted for laboratory analysis of suspect parameters of concern. The sampling methodology including jar, bottle and preservative requirements followed the Analytical Protocol. Field duplicate samples as well as other QA/QC samples including field, trip and spike blanks were collected as required throughout the assessment work.

5.6 Sediment: Sampling

No sediment samples were collected during the Phase Two ESA.

5.7 Analytical Testing

Wood collected soil/fill samples which were submitted to Paracel Laboratories Ltd. (Paracel), an ISO 17025-certified laboratory located in Ottawa, Ontario for laboratory analysis. The sample for OC pesticide analysis were submitted to Testmark Laboratories Ltd. (Testmark), an ISO 17025-certified laboratory located in Garson, Ontario for laboratory analysis.

5.8 Residue Management Procedures

The soil generated during the testpitting investigation was placed back into the testpit from which it came. The soil cuttings generated during the drilling investigation were placed in 205 L steel

drums on-Site. Liquid wastes generated during the investigation (well development and purged water) were stored on-Site in a drum.

5.9 Elevation Surveying

An elevation survey was completed by Wood on September 26, 2019. The ground surface elevations at the testpit locations were surveyed and referenced to a local base station part of the TopNet Live RTK Network which refers to the Canadian Geodetic Vertical Datum of 2013 (CGVD2013).

5.10 Quality Assurance and Quality Control Measures

The sampling methodology including jar, bottle and preservative requirements followed Analytical Protocol. Field duplicate soil were collected as required throughout the assessment work. A minimum of one field duplicate for every ten samples in soil was submitted. The field instruments were calibrated daily.

All soil sampling equipment was thoroughly decontaminated between soil sample locations to prevent potential cross-contamination. Decontamination activities included:

- Physical removal of any adhered debris;
- Wash/scrub in "Alconox" soap solution;
- Distilled water rinse; and
- Methanol rinse/air drying.

In addition to field activities pertaining to quality assurance (decontamination of non-dedicated equipment, blind duplicate samples, instrument calibration, etc.), an analytical quality assurance program was also implemented.

The chemical analyses completed on selected soil samples were carried out at Paracel. The validity of the analytical results reported for the samples collected during this investigation has been assessed using the criteria presented in the Analytical Protocol.

The Analytical Protocol establishes Acceptance Limits for use when assessing the reliability of data reported by analytical laboratories. These include maximum hold times for the storage of samples/sample extracts between collection and analysis, specified/approved analytical methods, required field and/or laboratory quality assurance samples such as blanks and field and laboratory duplicates, specified recovery ranges for spiked samples and surrogates (compounds added to samples in known concentrations for data validation purposes), required Reporting Limits (RL,

maximum allowable detection limits) and specified precision required when analyzing laboratory duplicate samples.

The results of the analytical quality assurance program are discussed in Section 6.3.

6.0 REVIEW AND EVALUATION

6.1 Geology

The subsurface condition encountered at the Phase Two Property are described as concrete, topsoil or gravelly sand fill underlain by a silty clay/clayey silt fill followed by native silty clay/clayey silt to the maximum depth explored of 6.1 mbgs. The fill thickness ranged from 0.3 to 2.0 mbgs. Bedrock was not encountered.

Petroleum -like odours and black colouration was identified in borehole BH/MW2 (0.1 to 0.6 mbgs). Black staining was identified in borehole BH6 (0.0 to 0.6 mbgs, 0.6 to 0.75 mbgs) and BH10 (0.0 to 0.15 mbgs).

6.2 Ground Water: Elevations and Flow Direction

Monitoring wells were installed at the Phase Two Property and the construction details are summarized in the boreholes logs in **Appendix B**.

Groundwater levels were measured on October 23, 2019 at depths between 0.27 to 2.35 mbgs. The inferred groundwater flow direction was north.

6.3 Ground Water: Hydraulic Gradients

Hydraulic gradients will be evaluated as part of the final Phase Two ESA report.

6.4 Fine-Medium Soil Texture

Native soil conditions consisted mainly of silty clay/clayey silt. The analytical results were compared to the Table 1 SCSs for medium to fine textured soil.

6.5 Soil Quality

The results of the soil sample analyses and their respective Table 1 SCS are summarized in **Tables 1,2 and 3**. The laboratory certificates of analysis are included in **Appendix C**.

The soil analytical results of this investigation are summarized in the following table:

Sample Name	Sample depth (mbgs)	pH	EC	SAR	Metals	PHC/ BTEX	VOC	OC	PCB	Table 1 SCS R/P/I/I/C/C*
Boreholes										
BH1-2-C/ Dup AA	1.5-3.0	✓								-
BH1-1-D	0.15					✓	✓		✓	-
BH/MW2-1-D	0.15					✓	✓		✓	-
BH/MW2-3-D	1.4	✓								-
BH3-1-C	0.0-1.5	✓								
BH5-1-C	0.0-1.5	✓								
BH6-1-D/ Dup AE	0.15					✓	✓		✓	-
BH/MW7-2-D	1.7					✓	✓		✓	-
BH/MW9-1-D	0.15					✓	✓		✓	PHC F3 – 1100 (240) PHC F4 – 250 (120)
BH10-1-D	0.15					✓	✓		✓	PHC F3 – 7560 (240) PHC F4 – 2620 (120)
Testpits										
TP1-2	1.2	✓	✓	✓	✓					-
TP2-1 / Dup AA	0.5				✓	✓				-
TP2-5	2.5	✓								-
TP3-1	0.5					✓				-
TP4-1	0.5				✓					-
Surface Samples										
SS1 / Dup BB	0.1-0.3								✓	-
SS2	0.1-0.3							✓		-
SS3 / Dup BC	0.1-0.3							✓		-
SS4	0.1-0.3							✓		-
SS5	0.1-0.3							✓		-
SS6 / Dup BD	0.1-0.3							✓		-
SS7	0.1-0.3							✓		DDE Total – 0.062 (0.05) γ-BHC – <0.06 (0.01)
SS7A	0.1-0.3							✓		α + γ - Chlordane – 0.85 (0.05)

Sample Name	Sample depth (mbgs)	pH	EC	SAR	Metals	PHC/ BTEX	VOC	OC	PCB	Table 1 SCS R/P/I/I/C/C*
SS7B	0.1-0.3							✓		DDD Total – 0.147 (0.05) DDE Total – 0.059 (0.05) α + γ - Chlordane – 5.7 (0.05)
SS7 Sampling Area	-							✓		α + γ - Chlordane – 2.185 (0.05)
SS8	0.1-0.3							✓		
SS9	0.1-0.3							✓		
SS10	0.1-0.3							✓		
SS11	0.1-0.3							✓		
SS12	0.1-0.3							✓		
SS13	0.1-0.3							✓		α + γ - Chlordane – 0.083 (0.05)
SS13A	0.1-0.3							✓		α + γ - Chlordane – 0.19 (0.05)
SS13B	0.1-0.3							✓		γ-BHC – 0.015 (0.01) α + γ - Chlordane – 0.13 (0.05)
SS13 Sampling Area	-							✓		α + γ - Chlordane – 0.134 (0.05)
SS201	0.1-0.3							✓		α + γ - Chlordane – 0.23 (0.05)
SS202	0.1-0.3							✓		Heptachlor epoxide – 0.051 (0.05) α + γ - Chlordane – 0.45 (0.05)
SS203	0.1-0.3							✓		α + γ - Chlordane – 0.074 (0.05)
SS204	0.1-0.3							✓		

Sample Name	Sample depth (mbgs)	pH	EC	SAR	Metals	PHC/ BTEX	VOC	OC	PCB	Table 1 SCS R/P/I/I/C/C*
SS205	0.1-0.3							✓		α + γ - Chlordane – 0.053 (0.05)
SS206	0.1-0.3							✓		α + γ - Chlordane – 0.117 (0.05)
SS207	0.1-0.3							✓		
SS208	0.1-0.3							✓		
SS301 / Dup CD	0.1-0.3							✓		
SS302	0.1-0.3							✓		Hexachlorobenzene – 0.011 (0.01)
SS303	0.1-0.3							✓		

Notes:
All units are in micrograms per gram (µg/g) except pH (pH units), EC (microSiemens per centimetre – µS/cm) and SAR (unitless).
* Where an exceedance is shown, it is shown in this format: "parameter – detected concentration (Table 1 SCS)"

No chemical or biological transformations were noted in the analysis nor did the results indicate that the soil at the Phase Two Property is a contaminant mass.

6.7 Ground Water Quality

The results of the groundwater sample analyses and their respective Table 1 SCS are summarized in **Table 4**. The laboratory certificates of analysis are included in **Appendix C**. The analytical results were below the Table 1 SCS for all the analyzed parameters.

6.8 Quality Assurance Program (ANALYTICAL) and Quality Control Results

The validity of the analytical results reported for the samples collected during this investigation has been assessed using the criteria presented in the Analytical Protocol.

The Analytical Protocol establishes Acceptance Limits for use when assessing the reliability of data reported by analytical laboratories. These include maximum hold times for the storage of samples/sample extracts between collection and analysis, specified/approved analytical methods, required field and/or laboratory quality assurance samples such as blanks and field and laboratory duplicates, specified recovery ranges for spiked samples and surrogates (compounds added to samples in known concentrations for data validation purposes), required Method Detection Limits

(MDL, maximum allowable detection limits) and specified precision required when analyzing laboratory duplicate samples.

Field QA/QC Program

The field QA/QC program consisted of analyzing the following field duplicate soil and groundwater samples:

- Dup AA, a field duplicate of soil sample BH1-2-C, for pH
- Dup AA, a field duplicate of soil sample TP2-1 for metals, PHCs, BTEX;
- Dup AE, a field duplicate of soil sample BH6-1-D for PHCs, BTEX, VOCs, PCBs;
- Dup BB, a field duplicate of soil sample SS1 for PCBs;
- Dup BC, a field duplicate of soil sample SS3 for OCs;
- Dup BD, a field duplicate of soil sample SS6 for OCs;
- Dup CD, a field duplicate of soil sample SS301 for OCs; and
- Dup WA, a field duplicate of groundwater sample BH/MW7, for PHCs, BTEX, VOCs.

Duplicate samples are analyzed to assess the precision of the field sampling and laboratory analytical processes. To accurately calculate a statistically valid relative percent difference (RPD) for the duplicate sample, the concentration of the analytes found in both the original and duplicate sample must be greater than five times the MDL.

An assessment of the RPDs for the duplicate samples was completed. The RPDs were either not calculable as both values were not greater than 5 times the MDL or were below the RPD limits.

It is noted that the RPD values in the Analytical Protocol are for duplicate samples collected at the laboratory and are used for comparison to the RPDs calculated for field duplicates.

Laboratory QA/QC Program

The laboratory results for soil and groundwater samples obtained during Wood's investigation met the Acceptance Limits of the Analytical Protocol. All samples were analyzed within laboratory hold times and preservation method, storage requirements and container type were utilized as the Analytical Protocol. No issues with the QA/QC that would impact the results of the assessment were noted. The results of the QA/QC analyses are included on the laboratory Certificates of Analyses presented in **Appendix C**.

Certification of Analytical Results

Based on the review of the QA/QC results for soil, the Chain of Custody forms and the laboratory Certificates of Analysis, it is concluded that:

- All Certificates of Analysis received pursuant to Section 47(2) of *O. Reg. 153/04* complies with Section 47(3) of *O. Reg. 153/04*;
- A Certificate of Analysis has been received for each sample submitted for analysis; and
- Copies of all Certificates of Analysis are provided in **Appendix C** of this report.

No issues with the analytical results affected decision-making or prevented the overall objectives of the investigation from being met.

6.9 Conceptual Site Model

The Conceptual Site Model (CSM) will be generated once the Phase Two ESA has been completed (including the soil remediation program).

7.0 CONCLUSIONS

Wood was retained by Ricci Law Professional Corporation to conduct a Phase Two ESA of the property located at 8970 Stanley Road, in Niagara Falls, Ontario. The Phase Two Property is owned by Ricci Law Professional Corporation and is occupied by Oaklands Golf Course. The Site was developed for use as a golf course in the early 1970s and has remained in that use until present, however, the golf course is no longer in operation as of the 2019 season. It is Wood's understanding that a RSC, acknowledged by the MECP, is required as a condition of the planned development of the Phase Two Property for residential use.

Wood previously completed a Phase I ESA, the findings of which were documented in the report entitled *"Phase I Environmental Site Assessment, 8970 Stanley Avenue, Niagara Falls, Ontario"* dated February 7, 2019 (2019 Phase I ESA). Wood subsequently upgraded the 2019 Phase I ESA to a Phase One ESA, prepared in accordance with the requirements of *Ontario Regulation 153/04* as amended (*O. Reg. 153/04*). The revised report, entitled *"Phase One Environmental Site Assessment, Oaklands Golf Course, 8970 Stanley Avenue, Niagara Falls, Ontario"*, was dated September 1, 2021 (2021 Phase One ESA).

The following Potentially Contaminating Activities (PCAs) were identified on the Phase Two Property:

- Maintenance of on-site equipment (PCA #27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles)
- Fuel storage associated with site operations (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks)
- Use of pesticides throughout the golf course and pesticide storage (PCA #40 – Pesticide (including Herbicides, Fungicides and Anti Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications)
- The presence of an electrical transformer (PCA #55 – Transformer Manufacturing, Processing and Use).

These PCAs result in areas of potential environmental concern (APECs) on the Phase Two Property. The Phase Two ESA was completed at the Phase Two Property to address these APECs. The Phase Two ESA was completed at the Phase Two Property to address these APECs, as required to support the RSC.

The primary findings are as follows:

- Wood advanced ten boreholes, four of which were completed as monitoring wells,

excavated four testpits, collected 31 surface soil samples and completed an elevation survey between September and December 2019. The locations of the boreholes, monitoring wells, testpits and surface soil samples were selected to address the APECs identified during the Phase One ESA.

- The subsurface conditions encountered during the investigation are described as concrete, topsoil or gravelly sand fill underlain by a silty clay/clayey silt fill followed by native silty clay/clayey silt to the maximum depth explored of 6.1 mbgs. The fill thickness ranged from 0.3 to 2.0 mbgs. Bedrock was not encountered. Petroleum -like odours and black colouration was identified in borehole BH/MW2 (0.1 to 0.6 mbgs). Black staining was identified in borehole BH6 (0.0 to 0.6 mbgs, 0.6 to 0.75 mbgs) and BH10 (0.0 to 0.15 mbgs)

- The assessment criteria applicable to the Phase Two Property, for the purposes of an RSC filing, are the Table 1 SCS Full Depth Background Site Condition Standards for residential/parkland/ institutional/industrial/commercial/community property for medium and fine textured soils.

- 48 soil samples were submitted for analysis of one or more of metals including hydrides, EC, SAR, PCBs, OCs, PHCs, BTEX and VOCs. The results of the soil testing indicated all parameters met the Table 1 SCS with the following exceptions:

    - PHCs: BH/MW9-1-D 0.15 mbgs and BH10-1-D 0.15 mbgs; and

    - OCs: SS7 0.1-0.3 mbgs, SS7A 0.1-0.3 mbgs, SS7B 0.1-0.3 mbgs, SS13 0.1-0.3 mbgs, SS13A 0.1-0.3 mbgs, SS13B 0.1-0.3 mbgs, SS201 0.1-0.3 mbgs, SS202 0.1-0.3 mbgs, SS203 0.1-0.3 mbgs, SS205 0.1-0.3 mbgs, SS206 0.1-0.3 mbgs and SS302 0.1-0.3 mbgs.

- Five groundwater samples were submitted for analysis of PHCs, BTEX and VOCs. The results of the groundwater testing indicated all the parameters met the Table 1 SCS.

- The Phase Two Property is not in compliance with the Table 1 SCS, and an RSC cannot be filed at this time. Wood has provided the Client with a work plan for the additional investigations and remediation required to attain compliance with the Table 1 SCS such that an RSC can be filed. This Phase Two ESA would be updated upon completion of remediation.

7.1 CLOSURE

The undersigned carried out the Phase Two ESA documented herein, including developing the Sampling and Analysis Plan, supervising all field activities, reviewing the resulting data and prepared this report, including the findings and conclusions presented herein, acting either as a Qualified Person or under the supervision of a Qualified Person. Any practice of geoscience documented within this report was undertaken by or under the supervision of a Professional Engineer or Professional Geoscientist licensed in the Province of Ontario.

This report was prepared for the exclusive use of Ricci Law Professional Corporation and is intended to provide a Phase Two ESA of the property located at 8970 Stanley Road, in Niagara Falls, Ontario at the time of the site field work. Wood shall provide written confirmation to any third party identified by the Client that such party may rely on any reports, documents and materials generated by Wood during this Project. Any use which an unauthorized third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from Wood will be required.

The investigation undertaken by Wood with respect to this report and any conclusions or recommendations made in this report reflect Wood's judgment based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for specific application to this site and it is based, in part, upon visual observation of the site, as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site, which were unavailable for direct investigation, which were not investigated directly. Wood has used its professional judgment in analyzing this information and formulating these conclusions.

Wood makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

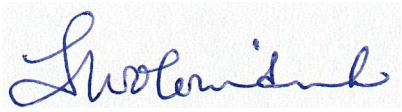
This Report is also subject to the further Standard Limitations attached in **Appendix D.**

We trust that the information presented in this report meets your current requirements. Should you have any questions or require further information, please contact the undersigned.

Yours truly,

Wood Environment & Infrastructure Solutions,
a Division of Wood Canada Limited.

Prepared by:



Tracy Wolowidnek, B.Sc.
Environmental Scientist

Reviewed by:

Patrick Shriner, P.Geo.
Associate, Environmental Geoscientist

FIGURES

CLIENT: RICCI LAW PROFESSIONAL CORPORATION	DWN BY: ZF	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT OAKLANDS GOLF COURSE 8970 STANLEY AVENUE, NIAGARA FALLS, ON	REV. NO.: A
	CHK'D BY: TW		DATE: AUGUST 2021
	DATUM: NAD 83		PROJECT NO: SCT196351
	PROJECTION: UTM ZONE 17T	TITLE: SITE LOCATION PLAN	FIGURE No.: 1
	SCALE: 1:30,000		

Wood Environment & Infrastructure Solutions
110 James Street, Suite 301
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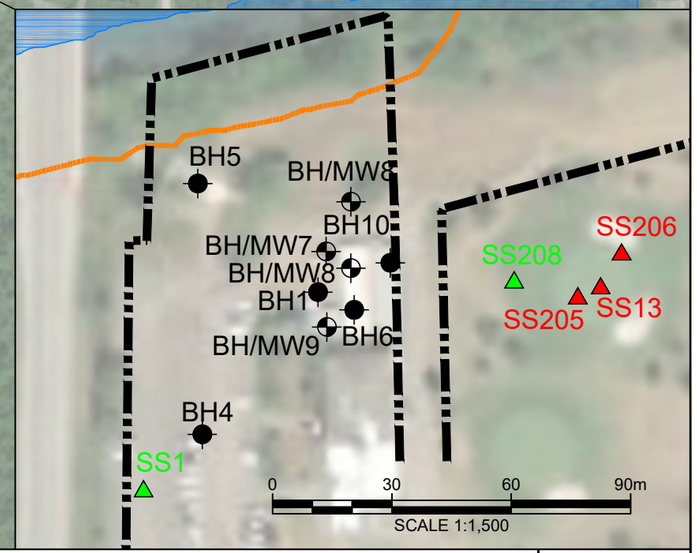
wood.

R:\2019\Projects_Other\SCT196351_8970 Stanley Ave & 9015 Stanley Ave\SCT196351_8970.dwg – Figure 1 – Aug. 19, 2021 5:52pm – zhanna.furman

MAINTENANCE SHED
WELLAND RIVER
SS208
BH5
BH/MW8
SS206
SS207
BH/MW7
SS13A
BH1
SS13B
BH4
SS13
SS205
SS1
SS2
SS3
SS4
SS301
SS302
SS303
BH3
SS202
SS203
SS201
SS7A
SS204
SS7
SS7B
MAINTENANCE BUILDING
SS5
SS9
SS12
SS6
CLUB HOUSE
STANLEY AVENUE
LYONS CREEK ROAD
SS10
SS8
AREA OF SUSPECTED FILL/
DISTURBED SOIL
SS11
TP1
TP2
TP4
TP3
LYONS CREEK
REFERENCE:
BASE MAP COURTESY ARCGIS.
0 50 100 150 200m
SCALE 1:4,000



LEGEND:

- PROPERTY BOUNDARY
- TESTPIT LOCATION
- MONITORING WELL LOCATION
- BOREHOLE LOCATION
- SURFACE SOIL SAMPLE
- LYONS CREEK WETLAND COMPLEX AND WELLAND RIVER EAST WETLAND COMPLEX
- 30m BUFFER FROM THE WETLANDS
- SAMPLES ANALYZED FOR OCs
- SAMPLE CONCENTRATION EXCEEDS TABLE 1 SCS

CLIENT: RICCI LAW PROFESSIONAL CORPORATION

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3300 Merrittville Highway, Unit 5
Thorold, Ontario L2V 4Y6

wood.

DWN BY:	ZF
CHK'D BY:	TW
DATUM:	NAD 83
PROJECTION:	UTM ZONE 17T
SCALE:	AS SHOWN

PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
OAKLANDS GOLF COURSE
8970 STANLEY AVENUE, NIAGARA FALLS, ON

TITLE: BOREHOLE, MONITORING WELL AND TESTPIT LOCATION PLAN

DATE:	AUGUST 2021
PROJECT NO:	SCT196351
REV. NO.:	A
FIGURE No.	2

R:\2019\Projects_Other\SCT196351_8970 Stanley Ave & 9015 Stanley Ave\SCT196351_8970.dwg – Figure 2 – Aug. 19, 2021 5:52pm – zhanna.furman

TABLES

Table 1: Summary of Soil Analyses for Inorganics and Metals

Client: Ricci Law Professional Corporation
Site: SCT196351
Project: 8970 Stanley Avenue, Niagara Falls, Ontario

Sample ID						BH1-2-C	Dup AA	Duplicate Average	RPD	BH/MW2-3-D	BH3-1-C	BH5-1-C	TP1-2	TP2-1	Dup AA	Duplicate Average	RPD	TP2-5	TP4-1
							Duplicate of sample BH1-2-C	(BH1-2-C and Dup AA)	(BH1-2-C and Dup AA)						Duplicate of sample TP2-1	(TP2-1 and Dup AA)	(TP2-1 and Dup AA)		
Sample Depth (m)						1.5-3.0	1.5-3.0			1.4	0.0-1.5	0.0-1.5	1.2	0.5	0.5			2.5	0.5
Date Collected						28-Aug-19	28-Aug-19			28-Aug-19	28-Aug-19	28-Aug-19	17-Sep-19	17-Sep-19	17-Sep-19			17-Sep-19	17-Sep-19
Laboratory ID						1935485-02	1935485-11			1935485-04	1935485-05	1935485-06	1938515-01	1938515-02	1938515-06			1938515-03	1938515-05
Date Analyzed - pH						5-Sep-19	5-Sep-19			5-Sep-19	5-Sep-19	5-Sep-19	24-Sep-19	N/A	N/A			24-Sep-19	N/A
Date Analyzed - SAR						N/A	N/A			N/A	N/A	N/A	24-Sep-19	N/A	N/A			N/A	N/A
Date Analyzed - Conductivity						N/A	N/A			N/A	N/A	N/A	24-Sep-19	N/A	N/A			N/A	N/A
Date Analyzed - Metals						N/A	N/A			N/A	N/A	N/A	24-Sep-19	24-Sep-19	24-Sep-19			N/A	24-Sep-19
Parameter	**Units**	**MDL**	**Table 1 SCS[a]**	**Table 2 SCS[b]**	**Table 8 SCS[c]**														
General Inorganics																			
SAR	N/A	0.01	2.4	5	5	-	-	-	-	-	-	-	1.39	-	-	-	-	-	-
Conductivity	uS/cm	5	570	700	700	-	-	-	-	-	-	-	294	-	-	-	-	-	-
pH	pH units	0.05	-	+	+	7.5	7.6	7.6	0.1 pH Units	7.4	6.7	7.5	7.4	-	-	-	-	7.4	-
Metals																			
Antimony	µg/g	1	1.3	7.5	1.3	-	-	-	-	-	-	-	<	<	<	<	NC	-	<
Arsenic	µg/g	1	18	18	18	-	-	-	-	-	-	-	3	4	4	4.0	0%	-	2
Barium	µg/g	1	220	390	220	-	-	-	-	-	-	-	59	85	92	88.5	8%	-	22
Beryllium	µg/g	0.5	2.5	5	2.5	-	-	-	-	-	-	-	<	0.7	0.6	0.7	14%	-	<
Boron	µg/g	5.0	36	120	36	-	-	-	-	-	-	-	8.4	8.8	8.3	8.6	6%	-	5.9
Cadmium	µg/g	0.5	1.2	1.2	1.2	-	-	-	-	-	-	-	<	<	<	<	NC	-	<
Chromium	µg/g	5	70	160	70	-	-	-	-	-	-	-	14	21	18	19.5	14%	-	7
Cobalt	µg/g	1	21	22	22	-	-	-	-	-	-	-	6	9	10	9.5	11%	-	4
Copper	µg/g	5	92	180	92	-	-	-	-	-	-	-	14	16	16	16.0	0%	-	11
Lead	µg/g	1	120	120	120	-	-	-	-	-	-	-	6	8	8	8.0	0%	-	4
Molybdenum	µg/g	1	2	6.9	2	-	-	-	-	-	-	-	<	<	<	<	NC	-	<
Nickel	µg/g	5	82	130	82	-	-	-	-	-	-	-	13	20	19	19.5	5%	-	8
Selenium	µg/g	1	1.5	2.4	1.5	-	-	-	-	-	-	-	<	<	<	<	NC	-	<
Silver	µg/g	0.3	0.5	25	0.5	-	-	-	-	-	-	-	<	<	<	<	NC	-	<
Thallium	µg/g	1	1	1	1	-	-	-	-	-	-	-	<	<	<	<	NC	-	<
Uranium	µg/g	1	2.5	23	2.5	-	-	-	-	-	-	-	<	<	<	<	NC	-	<
Vanadium	µg/g	10	86	86	86	-	-	-	-	-	-	-	22	31	28	29.5	10%	-	16
Zinc	µg/g	20	290	340	290	-	-	-	-	-	-	-	31	40	40	40.0	0%	-	<

Notes:

"a" - Table 1: Full Depth Background Site Condition Standards for residential/parkland/institutional/industrial/commercial/community property use; established in "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", Ontario Ministry of the Environment and Climate Change, 15 April 2011 (MOECC). SCS for medium to fine textured soils utilized.
"b" - Table 2: Full Depth Generic Site Condition Standards for residential/parkland/institutional property use in a potable ground water condition; established in "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the* Environmental Protection Act", Ontario Ministry of the Environment and Climate Change, 15 April 2011 (MOECC). SCS for medium to fine textured soils utilized.

"c" - Table 8: Generic Site Condition Standards for use within 30m of a water body for residential/parkland/institutional/industrial/commercial/community property use in a potable ground water condition; established in "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the* Environmental Protection Act", Ontario Ministry of the Environment and Climate Change, 15 April 2011 (MOECC). SCS for medium to fine textured soils utilized.
Bolded values exceed the Table 1 and/or Table 8 SCS.
Bolded values exceed both the Table 2 SCS as well as the Table 1/8 SCS.
"µg/g" - micrograms per gram, parts per million.
"MDL" - method detection limit.
"<" - sample results less than the MDL.
"-" - not applicable or parameter not analyzed.
"Duplicate Average" - average of results of sample and it's field duplicate; where parameter <MDL, MDL used to calculate average. Note: the duplicate average must exceed the SCS for there to be an exceedance.
"RPD" - relative percent difference.
"NC" - RPD not calculable as both values are not greater than 5x the MDL.
Bold - means RPD outside of the sample duplicate value as outlined in the 2011 Analytical Protocol (Metals 30%, pH 0.3 pH units, EC - 10%).
"+" means as per O. Reg. 153/04 as amended, in order to apply the generic Site Condition Standards, pH for surface soil (<1.5 mbgs) should be between 5 and 9 and pH for subsurface soil (>1.5 mbgs) should be between 5 and 11.

Table 2: Summary of Soil Analyses for PHCs, VOCs and PCBs

Client: Ricci Law Professional Corporation

Site: SCT196351

Project: 8970 Stanley Avenue, Niagara Falls, Ontario

Sample ID						BH1-1-D	BH/MW2-1-D	BH6-1-D	Dup AE Duplicate of BH6-1-D	Duplicate Average (BH6-1-D and Dup AE)	RPD (BH6-1-D and Dup AE)	BH/MW7-2-D	BH/MW9-1-D	BH10-1-D	TP2-1	Dup AA Duplicate of TP2-1	Duplicate Average (TP2-1 and Dup AA)	RPD (TP2-1 and Dup AA)	TP3-1	SS1	Dup BB Duplicate of SS1	Duplicate Average (SS1 and Dup BB)	RPD (SS1 and Dup BB)
Sample Depth (m)						0.15	0.15	0.15	0.15			1.7	0.15	0.15	0.5	0.5			0.5	0.1-0.3	0.1-0.3		
Date Collected						28-Aug-19	28-Aug-19	28-Aug-19	28-Aug-19			28-Aug-19	28-Aug-19	28-Aug-19	17-Sep-19	17-Sep-19			17-Sep-19	18-Sep-19	18-Sep-19		
Laboratory ID						1935485-01	1935485-03	1935485-07	1935485-12			1935485-08	1935485-09	1935485-10	1938515-02	1938515-06			1938515-04	1938474-01	1938474-14		
Date Analyzed - PHCs (F2-F4)						5-Sep-19	5-Sep-19	5-Sep-19	5-Sep-19			5-Sep-19	5-Sep-19	5-Sep-19	24-Sep-19	24-Sep-19			24-Sep-19	N/A	N/A		
Date Analyzed - PHCs (F1)						4-Sep-19	4-Sep-19	4-Sep-19	4-Sep-19			4-Sep-19	4-Sep-19	4-Sep-19	24-Sep-19	24-Sep-19			24-Sep-19	N/A	N/A		
Date Analyzed - VOCs						4-Sep-19	4-Sep-19	4-Sep-19	4-Sep-19			4-Sep-19	4-Sep-19	4-Sep-19	24-Sep-19	24-Sep-19			24-Sep-19	N/A	N/A		
Date Analyzed - PCBs						N/A	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A			N/A	23-Sep-19	23-Sep-19		
Parameter	**Units**	**MDL**	**Table 1 SCS[a]**	**Table 2 SCS[b]**	**Table 8 SCS[c]**																		
Petroleum Hydrocarbons (PHCs)																							
F1 PHCs (C6-C10)	µg/g	7	25	65	25	<	<	<	<	<	NC	<	<	<	<	<	<	NC	<	-	-	-	-
F2 PHCs (C10-C16)	µg/g	4	10	150	10	<	<	<	<	<	NC	<	<	<	<	<	<	NC	<	-	-	-	-
F3 PHCs (C16-C34)	µg/g	8	240	1300	240	143	63	79	<	43.5	NC	<	**1100**	**7560**	<	<	<	NC	<	-	-	-	-
F4 PHCs (C34-C50)	µg/g	6	120	5600	120	61	<	10	<	8.0	NC	<	**250**	**2620**	<	<	<	NC	<	-	-	-	-
Volatiles																							
Acetone	µg/g	0.50	0.50	28	0.50	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Benzene	µg/g	0.02	0.02	0.17	0.02	<	<	<	<	<	NC	<	<	<	<	<	<	NC	<	-	-	-	-
Bromodichloromethane	µg/g	0.05	0.05	1.9	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Bromoform	µg/g	0.05	0.05	0.26	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Bromomethane	µg/g	0.05	0.05	0.05	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	µg/g	0.05	0.05	0.12	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Chlorobenzene	µg/g	0.05	0.05	2.7	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Chloroform	µg/g	0.05	0.05	0.18	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Dibromochloromethane	µg/g	0.05	0.05	2.9	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane	µg/g	0.05	0.05	25	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	µg/g	0.05	0.05	1.7	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	µg/g	0.05	0.05	6	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	µg/g	0.05	0.05	0.097	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	µg/g	0.05	0.05	0.6	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	µg/g	0.05	0.05	0.05	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
1,1-Dichloroethylene	µg/g	0.05	0.05	0.05	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethylene	µg/g	0.05	0.05	2.5	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethylene	µg/g	0.05	0.05	0.75	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	µg/g	0.05	0.05	0.085	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropylene	µg/g	0.05	-	-	-	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropylene	µg/g	0.05	-	-	-	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
1,3-Dichloropropene, total	µg/g	0.05	0.05	0.081	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Ethylbenzene	µg/g	0.05	0.05	1.6	0.05	<	<	<	<	<	NC	<	<	<	<	<	<	NC	<	-	-	-	-
Ethylene dibromide (dibromoetha	µg/g	0.05	0.05	0.05	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Hexane	µg/g	0.05	0.05	34	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Methyl Ethyl Ketone (2-Butanone)	µg/g	0.50	0.50	44	0.50	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Methyl Isobutyl Ketone	µg/g	0.50	0.50	4.3	0.50	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether	µg/g	0.05	0.05	1.4	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Methylene Chloride	µg/g	0.05	0.05	0.96	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Styrene	µg/g	0.05	0.05	2.2	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/g	0.05	0.05	0.05	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/g	0.05	0.05	0.05	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	µg/g	0.05	0.05	2.3	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Toluene	µg/g	0.05	0.20	6	0.20	<	<	<	<	<	NC	<	<	<	<	<	<	NC	<	-	-	-	-
1,1,1-Trichloroethane	µg/g	0.05	0.05	3.4	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	µg/g	0.05	0.05	0.05	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Trichloroethylene	µg/g	0.05	0.05	0.52	0.05	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	µg/g	0.05	0.25	5.8	0.25	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
Vinyl Chloride	µg/g	0.02	0.02	0.022	0.02	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	-	-	-	-
m/p-Xylene	µg/g	0.05	-	-	-	<	<	<	<	<	NC	<	<	<	<	<	<	NC	<	-	-	-	-
o-Xylene	µg/g	0.05	-	-	-	<	<	<	<	<	NC	<	<	<	<	<	<	NC	<	-	-	-	-
Xylenes, total	µg/g	0.05	0.05	25	0.05	<	<	<	<	<	NC	<	<	<	<	<	<	NC	<	-	-	-	-
PCBs																							
PCBs, total	µg/g	0.05	0.3	0.35	0.3	<	<	<	<	<	NC	<	<	<	-	-	-	-	-	<	<	<	NC

Notes:

"a" - Table 1: Full Depth Background Site Condition Standards for residential/parkland/institutional/industrial/commercial/community property use; established in "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", Ontario Ministry of the Environment and Climate Change, 15 April 2011 (MOECC). SCS for medium to fine textured soils utilized.

"b" - Table 2: Full Depth Generic Site Condition Standards for residential/parkland/institutional property use in a potable ground water condition; established in "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the* Environmental Protection Act", Ontario Ministry of the Environment and Climate Change, 15 April 2011 (MOECC). SCS for medium to fine textured soils utilized.

"c" - Table 8: Generic Site Condition Standards for use within 30m of a water body for residential/parkland/institutional/industrial/commercial/community property use in a potable ground water condition; established in "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the* Environmental Protection Act", Ontario Ministry of

Bolded values exceed the Table 1 and/or Table 8 SCS.

Bolded values exceed both the Table 2 SCS as well as the Table 1/8 SCS.

"µg/g" - micrograms per gram, parts per million.

"MDL" - method detection limit.

"NV" - no value derived

"<" - sample results less than the MDL.

"-" - not applicable or parameter not analyzed.

"Duplicate Average" - average of results of sample and it's field duplicate; where parameter <MDL, MDL used to calculate average. Note: the duplicate average must exceed the SCS for there to be an exceedance.

"RPD" - relative percent difference.

"NC" - RPD not calculable as both values are not greater than 5x the MDL.

Bold - means RPD outside of the sample duplicate value as outlined in the 2011 Analytical Protocol (VOCs - 50%, PHCs - 30%, PCBs - 40%).

Table 3: Summary of Soil Analyses for OCs

Client: Ricci Law Professional Corporation
Site: SCT196351
Project: 8970 Stanley Avenue, Niagara Falls, Ontario

Sample ID						SS2	SS3	DUP BC	Duplicate Average	RPD	SS4	SS5	SS6	DUP BD	Duplicate Average	RPD	SS7	SS7A	SS7B	SS7 Sampling Area Average	SS8	SS9	SS10	SS11
								Duplicate of SS3	(SS3 and DUP BC)	(SS3 and DUP BC)	on green	on green		Duplicate of SS6	(SS6 and DUP BD)	(SS6 and DUP BD)	on green	on green	on green					
Sample Depth (m)						0.1-0.3	0.1-0.3	0.1-0.3			0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3			0.1-0.3	0.1-0.3	0.1-0.3		0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3
Date Collected						18-Sep-19	18-Sep-19	18-Sep-19			18-Sep-19	18-Sep-19	18-Sep-19	18-Sep-19			18-Sep-19	4-Dec-19	4-Dec-19		18-Sep-19	18-Sep-19	18-Sep-19	18-Sep-19
Laboratory ID						1478428	1478429	1478440			1478430	1478431	1478432	1478441			1478433	1502634	1502635		1478434	1478435	1478436	1478437
Date Analyzed - Ocs						25-Sep-19	25-Sep-19	25-Sep-19			25-Sep-19	25-Sep-19	25-Sep-19	25-Sep-19			25-Sep-19	13-Dec-19	13-Dec-19		25-Sep-19	25-Sep-19	25-Sep-19	25-Sep-19
Parameter	**Units**	**MDL**	**Table 1 SCS[a]**	**Table 2 SCS[b]**	**Table 8 SCS[c]**																			
Organochlorine Pesticides (OCs)																								
2,4'-DDD	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	<	0.047	0.020	<	<	<	<
4,4'-DDD	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	0.012	0.100	0.039	<	<	<	<
DDD (Total)	µg/g	0.01 or lower	0.05	3.3	0.05	<	<	<	<	NC	<	<	<	<	<	NC	<	0.012	**0.147**	0.055	<	<	<	<
2,4'-DDE	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	0.051	0.008	0.059	0.039	<	<	<	<
4,4'-DDE	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	0.008	<	<	<	<	NC	0.011	<	<	0.008	<	<	<	<
DDE (Total)	µg/g	0.01 or lower	0.05	0.33	0.05	<	<	<	<	NC	0.008	<	<	<	<	NC	**0.062**	0.008	**0.059**	0.043	<	<	<	<
2,4'-DDT	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
4,4'-DDT	µg/g	0.01 or lower	-	-	-	0.076	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	0.029	0.012	<
DDT (Total)	µg/g	0.01 or lower	1.40	1.4	1.4	0.076	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	0.029	0.012	0.03
Aldrin	µg/g	0.01 or lower	0.05	0.05	0.05	<	<	<	<	NC	<	<	<	<	<	NC	0.01	<	<	0.008	<	<	<	<
Dieldrin	µg/g	0.01 or lower	0.05	0.05	0.05	<	<	<	<	NC	<	<	<	<	<	NC	<	<	0.047	0.020	<	<	<	<
Endosulfan I	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
Endosulfan II	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
Endosulfan I + II	µg/g	0.01 or lower	0.04	0.04	0.04	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
Endosulfan sulfate	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
Endrin	µg/g	0.01 or lower	0.04	0.04	0.04	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
Endrin aldehyde	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
Heptachlor	µg/g	0.01 or lower	0.05	0.15	0.05	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
Heptachlor epoxide	µg/g	0.01 or lower	0.05	0.05	0.05	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
Hexachlorobenzene	µg/g	0.01 or lower	0.01	0.52	0.02	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
Hexachlorobutadiene	µg/g	0.01 or lower	0.01	0.014	0.01	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
Hexachloroethane	µg/g	0.01 or lower	0.01	0.071	0.01	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
Methoxychlor	µg/g	0.01 or lower	0.05	0.13	0.05	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
Mirex	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
Oxychlordane	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	<	0.023	0.012	<	<	<	<
α-BHC	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
ß-BHC	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	<	<	<	<	<	<	<
γ- BHC (Lindane)	µg/g	0.01 or lower	0.01	0.063	0.01	<	<	<	<	NC	<	<	<	<	<	NC	<0.06	<	<		<	<	<	<
δ-BHC	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	<	0.061	0.025	<	<	<	<
α - Chlordane	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	0.63	4.2	1.612	<	<	<	<
γ - Chlordane	µg/g	0.01 or lower	-	-	-	<	<	<	<	NC	<	<	<	<	<	NC	<	0.22	1.5	0.575	<	<	<	<
α + γ -Chlordane	µg/g	0.01 or lower	0.05	0.05	0.05	<	<	<	<	NC	<	<	<	<	<	NC	<	**0.85**	**5.7**	**2.185**	<	<	<	<

Notes:
"a" - Table 1: Full Depth
"b" - Table 2: Full Depth
"c" - Table 8: Generic Site
Condition Standards for use
Bolded values exceed the Table 1 and/or Table 8 SCS.
Bolded values exceed both the Table 2 SCS as well as the Table 1/8 SCS.
"µg/g" - micrograms per gram, parts per million.
indicates MDL > Table 1/8 SCS.
"MDL" - method detection limit.
"<" - sample results less than the MDL.
"-" - not applicable or parameter not analyzed.
"Duplicate Average" - average of results of sample and it's field duplicate; where parameter <MDL, MDL used to calculate average. Note: the duplicate average must exceed the SCS for there to be an exceedance.
"RPD" - relative percent difference.
"NC" - RPD not calculable as both values are not greater than 5x the MDL.
Bold - means RPD outside of the sample duplicate value as outlined in the 2011 Analytical Protocol (Ocs - 40%).

Table 3: Summary of Soil Analyses for OCs

Client: Ricci Law Professional Corporation
Site: SCT196351
Project: 8970 Stanley Avenue, Niagara Falls, Ontario

								on green	on green	on green		on green	Delineation @ SS7 on green	off green	off green	on green	Delineation at SS13 on green	off green	off green						on green	
Sample ID						**SS12**	**SS13**	**SS13A**	**SS13B**	**SS13 Sampling Area Average**	**SS201**	**SS202**	**SS203**	**SS204**	**SS205**	**SS206**	**SS207**	**SS208**	**SS301**	**DUPCD** Field duplicate of SS301	**Duplicate Average** (SS301 and DUP CD)	**RPD** (SS301 and DUP CD)	**SS302**	**SS303**
Sample Depth (m)						0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3		0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3			0.1-0.3	0.1-0.3
Date Collected						18-Sep-19	18-Sep-19	4-Dec-19	4-Dec-19		4-Dec-19	4-Dec-19	4-Dec-19	4-Dec-19	4-Dec-19	4-Dec-19	4-Dec-19	4-Dec-19	4-Dec-19	4-Dec-19			4-Dec-19	4-Dec-19
Laboratory ID						1478438	1478439	1502636	1502637		1505329	1505330	1505331	1505332	1505333	1505334	1505335	1505336	1502638	1502641			1502639	1502640
Date Analyzed - Ocs						25-Sep-19	25-Sep-19	13-Dec-19	13-Dec-19		24-Dec-19	24-Dec-19	24-Dec-19	24-Dec-19	24-Dec-19	24-Dec-19	24-Dec-19	24-Dec-19	13-Dec-19	13-Dec-19			13-Dec-19	13-Dec-19
Parameter	**Units**	**MDL**	**Table 1 SCS[a]**	**Table 2 SCS[b]**	**Table 8 SCS[c]**																			
Organochlorine Pesticides (OCs)																								
2,4'-DDD	µg/g	0.01 or lower	-	-	-	<	<	0.007	<	0.008	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
4,4'-DDD	µg/g	0.01 or lower	-	-	-	<	<	<	0.018	0.011	0.018	0.029	<	<	<	<	<	<	<	<	<	NC	<	<
DDD (Total)	µg/g	0.01 or lower	0.05	3.3	0.05	<	<	0.007	0.018	0.011	0.018	0.029	<	<	<	<	<	<	<	<	<	NC	<	<
2,4'-DDE	µg/g	0.01 or lower	-	-	-	<	<	<	<	<	<	0.01	<	<	<	<	<	<	<	<	<	NC	<	<
4,4'-DDE	µg/g	0.01 or lower	-	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
DDE (Total)	µg/g	0.01 or lower	0.05	0.33	0.05	<	0.026	<	<	0.013	<	0.01	<	<	<	<	<	<	<	<	<	NC	<	<
2,4'-DDT	µg/g	0.01 or lower	-	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
4,4'-DDT	µg/g	0.01 or lower	-	-	-	<	0.014	<	<	0.009	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
DDT (Total)	µg/g	0.01 or lower	1.40	1.4	1.4	0.072	0.014	<	<	0.009	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
Aldrin	µg/g	0.01 or lower	0.05	0.05	0.05	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
Dieldrin	µg/g	0.01 or lower	0.05	0.05	0.05	<	<	<	<	<	<	0.01	<	<	<	<	<	<	<	<	<	NC	<	<
Endosulfan I	µg/g	0.01 or lower	-	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
Endosulfan II	µg/g	0.01 or lower	-	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
Endosulfan I + II	µg/g	0.01 or lower	0.04	0.04	0.04	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
Endosulfan sulfate	µg/g	0.01 or lower	-	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
Endrin	µg/g	0.01 or lower	0.04	0.04	0.04	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
Endrin aldehyde	µg/g	0.01 or lower	-	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<	0.034	0.012	0.023	NC	<	<
Heptachlor	µg/g	0.01 or lower	0.05	0.15	0.05	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
Heptachlor epoxide	µg/g	0.01 or lower	0.05	0.05	0.05	<	<	0.047	0.035	0.030	<	**0.051**	<	<	0.024	0.029	<	<	<	<	<	NC	<	<
Hexachlorobenzene	µg/g	0.01 or lower	0.01	0.52	0.02	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	**0.011**	<
Hexachlorobutadiene	µg/g	0.01 or lower	0.01	0.014	0.01	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
Hexachloroethane	µg/g	0.01 or lower	0.01	0.071	0.01	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
Methoxychlor	µg/g	0.01 or lower	0.05	0.13	0.05	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
Mirex	µg/g	0.01 or lower	-	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
Oxychlordane	µg/g	0.01 or lower	-	-	-	<	<	0.021	0.025	0.018	0.012	0.012	<	<	0.014	0.013	<	<	<	<	<	NC	<	<
α-BHC	µg/g	0.01 or lower	-	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
ß-BHC	µg/g	0.01 or lower	-	-	-	<	<	0.017	0.031	0.019	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
γ- BHC (Lindane)	µg/g	0.01 or lower	0.01	0.063	0.01	<	<	<	**0.015**	0.010	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
δ-BHC	µg/g	0.01 or lower	-	-	-	<	<	0.12	<	0.045	0.099	0.23	0.052	<	0.041	0.045	0.04	0.025	<	<	<	NC	0.11	<
α - Chlordane	µg/g	0.01 or lower	-	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	NC	<	<
γ - Chlordane	µg/g	0.01 or lower	-	-	-	<	0.083	0.19	0.13	0.134	0.23	0.45	0.074	<	0.053	0.117	<	<	<	<	<	NC	<	<
α + γ -Chlordane	µg/g	0.01 or lower	0.05	0.05	0.05	<	**0.083**	**0.19**	**0.13**	**0.134**	**0.23**	**0.45**	**0.074**	<	**0.053**	**0.117**	<	<	<	<	<	NC	<	<

Notes:
"a" - Table 1: Full Depth
"b" - Table 2: Full Depth
"c" - Table 8: Generic Site
Condition Standards for use
Bolded values exceed the Table 1 and/or Table 8 SCS.
Bolded values exceed both the Table 2 SCS as well as the Table 1/8 SCS.
"µg/g" - micrograms per gram, parts per million.
indicates MDL > Table 1/8 SCS.
"MDL" - method detection limit.
"<" - sample results less than the MDL.
"-" - not applicable or parameter not analyzed.
"Duplicate Average" - average of results of sample and it's field duplicate; where parameter <MDL, MDL used to calculate average. Note:
"RPD" - relative percent difference.
"NC" - RPD not calculable as both values are not greater than 5x the MDL.
Bold - means RPD outside of the sample duplicate value as outlined in the 2011 Analytical Protocol (Ocs - 40%).

Table 4: Summary of Ground Water Analyses for PHCs and VOCs

Client: Ricci Law Professional Corporation

Site: SCT196351

Project: 8970 Stanley Avenue, Niagara Falls, Ontario

Sample ID						BH/MW2	BH/MW7	Dup WA Field duplicate of BH/MW7	RPD (BH/MW7 and Dup WA)	BH/MW8	BH/MW9	Field Blank	Trip Blank	Trip Spike
Date Collected						23-Oct-19	23-Oct-19	23-Oct-19		23-Oct-19	23-Oct-19	23-Oct-19	22-Oct-19	22-Oct-19
Laboratory ID						1943527-01	1943527-02	1943527-05		1943527-03	1943527-04	1943527-06	1943527-07	1943527-08
Date Analyzed - PHCs F1, VOCs						29-Oct-19	29-Oct-19	29-Oct-19		29-Oct-19	29-Oct-19	29-Oct-19	29-Oct-19	29-Oct-19
Date Analyzed - PHCs F2-F4						30-Oct-19	30-Oct-19	30-Oct-19		30-Oct-19	30-Oct-19	30-Oct-19	30-Oct-19	30-Oct-19
Parameter	**Units**	**MDL**	**Table 1 SCS[a]**	**Table 2 SCS[b]**	**Table 8 SCS[c]**									
Petroleum Hydrocarbons (PHCs)														
F1 PHCs (C6-C10)	µg/L	25	420	750	420	<	<	<	NC	<	<	<	<	1720
F2 PHCs (C10-C16)	µg/L	100	150	150	150	<	<	<	NC	<	<	-	-	-
F3 PHCs (C16-C34)	µg/L	100	500	500	500	<	<	<	NC	<	<	-	-	-
F4 PHCs (C34-C50)	µg/L	100	500	500	500	<	<	<	NC	<	<	-	-	-
Volatile Organic Compounds (VOCs)														
Acetone	µg/L	5.0	2700	2700	2,700	<	<	<	NC	<	<	-	-	-
Benzene	µg/L	0.5	0.5	5	5	<	<	<	NC	<	<	<	<	35.9
Bromodichloromethane	µg/L	0.5	2	16	16	<	<	<	NC	<	<	-	-	-
Bromoform	µg/L	0.5	5	25	25	<	<	<	NC	<	<	-	-	-
Bromomethane	µg/L	0.5	0.89	0.89	0.89	<	<	<	NC	<	<	-	-	-
Carbon Tetrachloride	µg/L	0.2	0.2	5	0.79	<	<	<	NC	<	<	-	-	-
Chlorobenzene	µg/L	0.5	0.5	30	30	<	<	<	NC	<	<	-	-	-
Chloroform	µg/L	0.5	2	22	2.4	<	<	<	NC	<	<	-	-	-
Dibromochloromethane	µg/L	0.5	2	25	25	<	<	<	NC	<	<	-	-	-
Dichlorodifluoromethane	µg/L	1.0	590	590	590	<	<	<	NC	<	<	-	-	-
1,2-Dichlorobenzene	µg/L	0.5	0.5	3	3	<	<	<	NC	<	<	-	-	-
1,3-Dichlorobenzene	µg/L	0.5	0.5	59	59	<	<	<	NC	<	<	-	-	-
1,4-Dichlorobenzene	µg/L	0.5	0.5	1	1	<	<	<	NC	<	<	-	-	-
1,1-Dichloroethane	µg/L	0.5	0.5	5	5	<	<	<	NC	<	<	-	-	-
1,2-Dichloroethane	µg/L	0.5	0.5	5	1.6	<	<	<	NC	<	<	-	-	-
1,1-Dichloroethylene	µg/L	0.5	0.5	14	1.6	<	<	<	NC	<	<	-	-	-
cis-1,2-Dichloroethylene	µg/L	0.5	1.6	17	1.6	<	<	<	NC	<	<	-	-	-
trans-1,2-Dichloroethylene	µg/L	0.5	1.6	17	1.6	<	<	<	NC	<	<	-	-	-
1,2-Dichloropropane	µg/L	0.5	0.5	5	5	<	<	<	NC	<	<	-	-	-
cis-1,3-Dichloropropylene	µg/L	0.5	-	-	-	<	<	<	NC	<	<	-	-	-
trans-1,3-Dichloropropylene	µg/L	0.5	-	-	-	<	<	<	NC	<	<	-	-	-
1,3-Dichloropropene, total	µg/L	0.5	0.5	0.5	0.5	<	<	<	NC	<	<	-	-	-
Ethylbenzene	µg/L	0.5	0.5	2.4	2	<	<	<	NC	<	<	<	<	34.6
Ethylene dibromide (dibromoethane, 1,2-)	µg/L	0.2	0.2	0.2	0.2	<	<	<	NC	<	<	-	-	-
Hexane	µg/L	1.0	5	520	51	<	<	<	NC	<	<	-	-	-
Methyl Ethyl Ketone (2-Butanone)	µg/L	5.0	400	1800	1,800	<	<	<	NC	<	<	-	-	-
Methyl Isobutyl Ketone	µg/L	5.0	640	640	640	<	<	<	NC	<	<	-	-	-
Methyl tert-butyl ether	µg/L	2.0	15	15	15	<	<	<	NC	<	<	-	-	-
Methylene Chloride	µg/L	5.0	5	50	50	<	<	<	NC	<	<	-	-	-
Styrene	µg/L	0.5	0.5	5.4	5	<	<	<	NC	<	<	-	-	-
1,1,1,2-Tetrachloroethane	µg/L	0.5	1.1	1.1	1.1	<	<	<	NC	<	<	-	-	-
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.5	1	1	<	<	<	NC	<	<	-	-	-
Tetrachloroethylene	µg/L	0.5	0.5	17	1.6	<	<	<	NC	<	<	-	-	-
Toluene	µg/L	0.5	0.8	24	22	<	<	<	NC	<	<	<	<	38.0
1,1,1-Trichloroethane	µg/L	0.5	0.5	200	200	<	<	<	NC	<	<	-	-	-
1,1,2-Trichloroethane	µg/L	0.5	0.5	5	4.7	<	<	<	NC	<	<	-	-	-
Trichloroethylene	µg/L	0.5	0.5	5	1.6	<	<	<	NC	<	<	-	-	-
Trichlorofluoromethane	µg/L	1.0	150	150	150	<	<	<	NC	<	<	-	-	-
Vinyl Chloride	µg/L	0.5	0.5	1.7	0.5	<	<	<	NC	<	<	-	-	-
m/p-Xylene	µg/L	0.5	-	-	-	<	<	<	NC	<	<	<	<	77.2
o-Xylene	µg/L	0.5	-	-	-	<	<	<	NC	<	<	<	<	36.0
Xylenes, total	µg/L	0.5	72	300	300	<	<	<	NC	<	<	<	<	113

Notes:

"a" - Table 1: Full Depth Background Site Condition Standards for residential/parkland/institutional/industrial/commercial/community property use; established in "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", Ontario Ministry of the Environment and Climate Change, 15 April 2011 (MOECC). SCS for medium to fine textured soils utilized.

"b" - Table 2: Full Depth Generic Site Condition Standards for residential/parkland/institutional property use in a potable ground water condition; established in "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the* Environmental Protection Act", Ontario Ministry of the Environment and Climate Change, 15 April 2011 (MOECC). SCS for medium to fine textured soils utilized.

"c" - Table 8: Generic Site Condition Standards for use within 30m of a water body for residential/parkland/institutional/industrial/commercial/community property use in a potable ground water condition; established in "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the* Environmental Protection Act", Ontario Ministry of the Environment and Climate Change, 15 April 2011 (MOECC). SCS for medium to fine textured soils utilized.

Bolded values exceed the Table 1 and/or Table 8 SCS.

Bolded values exceed both the Table 2 SCS as well as the Table 1/8 SCS.

"µg/L" - micrograms per Litre, parts per billion.

"MDL" - method detection limit.

"<" - sample results less than the MDL.

"-" - not applicable or parameter not analyzed.

"RPD" - relative percent difference.

"NC" - RPD not calculable as both values are not greater than 5x the MDL.

Bold - means RPD outside of the sample duplicate value as outlined in the 2011 Analytical Protocol (VOCs 30%, PHCs 30%).

APPENDIX A

SAMPLING AND ANALYSIS PLAN

Memo

To	**Field Staff**	File no	**SCT196351**
From	**Patrick Shriner**	cc	**Kelly Patterson**
Tel	**905-687-6616**		
Fax	**905-687-6620**		
Date	**September 2019**		

Subject **Phase Two ESA Sampling and Quality Assurance Plan**
8970 Stanely Avenue, Niagara Falls, Ontario

Scope of Sampling Program

The proposed number of testpits and boreholes, along with the rationale for the location of each was determined by Wood. The soil/fill samples are to be analyzed for one or more of the following potential contaminants of concern (COCs): metals (including hydrides), EC, SAR, PHCs, BTEX, OCs and PCBs. The sample depths and parameters to be analyzed will be determined based on observations during the soil sampling programs and reviewed with the QP_{ESA} prior to submission. Field observations may indicate a need for additional numbers or types of samples, e.g., vertical and horizontal delineation. If such field observations are made, contact Patrick Shriner (905-687-6616) and report the observations. Water samples are to be taken from all monitoring wells installed on the Site. Ground Water Samples are to be analyzed for the following COCs: PHCs and VOCs.

Any deviations from the planned scope of work and the rationale for the deviation(s) are to be approved by Patrick Shriner and are to be recorded in the field notes.

Sampling Rationale and Procedures

Sampling locations have been assessed on the basis of areas of potential environmental concern (APECs) identified during the Phase One ESA.

The following Wood Standard Operating Procedures (SOPs) are to be followed during the Project and are incorporated herein by reference:

- SOP No. 1 - Equipment Calibration and Maintenece, Rev. No. 0, October 8, 2013;

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www.amecfw.com

- SOP No. 2 - Equipment Decontamination, Rev. No. 0, October 8, 2013;
- SOP No. 3 – Sample Location Inspection and Monitoring, Rev. No. 0, October 8, 2013;
- SOP No. 4 – Measurement of Field Paramters, Rev. No. 0, October 8, 2013;
- SOP No. 8 - Subsurface Soil Sampling, Rev. No. 0, October 8, 2013;
- SOP No. 10 - Field Vapour Headspace Screening, Rev. No. 0, October 8, 2013;
- SOP No. 12 - Excavation of Exploratory Test Pits, Rev. No. 0, October 8, 2013;
- SOP No. 13 – Borehole Drilling and Soil Sampling, Rev. No. 0, October 8, 2013;
- SOP No. 14 – Monitoring Well Design and Construction, Rev. No. 0, October 8, 2013;
- SOP No. 16 – Ground Water and Liquid Level Monitoring, Rev. No. 0, October 8, 2013;
- SOP No. 17 – Ground Water Purging and Sampling, Rev. No. 0, October 8, 2013;
- SOP No. 18 – Ground Water Low Flow Sampling, Rev. No. 0, October 8, 2013;
- SOP No. 19 - Handling of Volatile Samples, Rev. No. 0, October 8, 2013;
- SOP No. 20 - Chain of Custody Completion, Rev. No. 0, October 8, 2013.; and
- SOP No. 21 – Aquifer Response Testing Bail / Slug Testing, Rev. No. 0, November 6, 2013;

Specifications regarding sampling procedures, well installations, field note-taking, instrument calibration, field measurements, surveying, collection of blind duplicate samples, etc., are provided in the SOPs. The remainder of this Section provides a brief summary of sampling procedures that are to be followed, which does not supersede the requirements of the SOPs with the exception of changes in sample handling/collection practices required under the *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, March 2004, amended as of 01 July 2011, in order to document site-specific information (e.g., contact persons).

Soil/fill samples are to be collected as per *O. Reg. 153/04*. Soil samples are to be collected at standard sampling locations throughout the full vertical extent of each testpit and borehole.

Soil samples shall be submitted for analysis of parameters outlined above, as well as on the basis of the presence of fill material, visual or olfactory evidence of contamination, field screening results [PHCs and VOCs/BTEX], proximity to the apparent water table (LNAPLs) or the vicinity of the interface with a lower confining layer (DNAPLs). In the absence of any other indicators of impact, soil samples to be analyzed shall be collected from fill materials with the exception that samples for VOCs/BTEX may be collected from the vicinity of the water table or a lower confining

layer and samples for PHC F1 – F4 may be collected from the vicinity of the water table. Water samples shall be submitted for analysis of parameters outlined above. Any deviation from the sampling plan is to be approved by Patrick Shriner.

Samples are to be submitted for analysis with the Chain of Custody clearly marked "*O. Reg. 153/04*" and with Table 1 and RSC selected as the applicable criteria. *Soil samples to be analyzed for VOCs must be analyzed as per the revised Analytical Protocol which indicates field preservation in methanol.*

Quality Assurance Program

The SOPs cited previously specify decontamination procedures, protocols for the collection of duplicate samples, the use of blank samples and instrument calibration checks, etc. In addition, specific details regarding the quality assurance programs for soil sampling are provided in SOP No. 12, Excavation of Exploratory Test Pits, and specific dertails regarding the quality assurance programs for ground water sampling are provided in SOP No. 18, Ground Water Low Flow Sampling.

In the case of this Project, no non-dedicated sampling equipment, other than excavation equipment, is to be used.

Patrick Shriner, P.Geo.
Associate Geoscientist
patrick.shriner@woodplc.com

APPENDIX B

BOREHOLE AND TESTPIT LOGS

Phase Two ESA
Site Location: 8970 Stanley Ave, Niagara Falls, Ontario
Job Number: SCT196351
Date: September 17, 2019

TESTPIT LOG: 1				**UTM: 4767200, 656155**	
Sample Number	**Depth (mbgs)**	**Comments (odour, staining, etc.)**	**COV/TOV (ppm)**	**Stratigraphy**	
				Depth (mbgs)	**Material Description**
-	-	No odours or staining	-	0.0-0.15	Topsoil
TP1-2 (metals, pH, EC, SAR)	1.2	No odours or staining	0/55	0.15-1.2	Brown, Silty Clay/Clayey Silt FILL, traces of gravel, fissured, APL
-	-	No odours or staining	0/40	1.2-1.8	Brown, Silty Clay/Clayey Silt POSSIBLY FILL, some sand, traces of gravel, APL
-	-	No odours or staining	0/35	1.8-2.3	Reddish brown, Silty Clay/Clayey Silt NATIVE, traces of gravel, APL/WTPL
Final Depth: 2.3 mbgs		Upon Completion: Testpit remained open and dry.			

Equipment: JCB Backhoe 3CXeco

Originated by: CM/BH
Compiled By: BH
Checked By: KP

Notes: "mbgs" means metres below ground surface. "OCs" means organochlorine pesticides. "DTPL" means Drier Than Plastic Limit. "APL" means At Plastic Limit. "WTPL" means Wetter Than Plastic Limit

Phase Two ESA
Site Location: 8970 Stanley Ave, Niagara Falls, Ontario
Job Number: SCT196351
Date: September 17, 2019

TESTPIT LOG: 2				**UTM: 4767195, 656176**	
Sample Number	**Depth (mbgs)**	**Comments (odour, staining, etc.)**	**COV/TOV (ppm)**	**Stratigraphy**	
				Depth (mbgs)	**Material Description**
TP2-1 (metals, PHCs (F1-F4), BTEX) + Dup AA (metals, PHCs (F1-F4), BTEX)	0.5	No odours or staining	0/40	0.0-0.5	Brown, Silty Clay/Clayey Silt FILL, traces of sand, APL
-	-	No odours or staining	0/15	0.5-1.0	Brown, Silty Sand FILL, moist
-	-	No odours or staining	0/10	1.0-1.5	Brown, Silty Clay/Clayey Silt FILL, some sand, APL
-	-	No odours or staining	0/5	1.5-2.0	Brown, Silty Sand FILL, Moist
TP2-5 (pH)	2.5	No odours or staining	0/10	2.0-2.5	Reddish brown, Silty Clay/Clayey Silt NATIVE, traces of gravel, APL
Final Depth: 2.5 mbgs		Upon Completion: Testpit remained open and dry.			

Equipment: JCB Backhoe 3CXeco

Originated by: CM/BH
Compiled By: BH
Checked By: KP

Notes: "mbgs" means metres below ground surface. "OCs" means organochlorine pesticides. "DTPL" means Drier Than Plastic Limit. "APL" means At Plastic Limit. "WTPL" means Wetter Than Plastic Limit

Phase Two ESA
Site Location: 8970 Stanley Ave, Niagara Falls, Ontario
Job Number: SCT196351
Date: September 17, 2019

TESTPIT LOG: 3				**UTM: 4767153, 656183**	
Sample Number	**Depth (mbgs)**	**Comments (odour, staining, etc.)**	**COV/TOV (ppm)**	**Stratigraphy**	
				Depth (mbgs)	**Material Description**
TP3-1 (BTEX, PHCs (F1-F4))	0.5	No odours or staining	0/10	0.0-0.5	Brown, Sandy Clay FILL, APL
-	-	No odours or staining	-	0.5-0.6	Grey Clay FILL, APL
-	-	No odours or staining	0/5	0.6-1.0	Brown, Sand FILL, moist
-	-	No odours or staining	0/10	1.0-1.5	Reddish brown, Silty Clay/Clayey Silt NATIVE, traces of gravel, APL
Final Depth: 1.5 mbgs		Upon Completion: Testpit remained open and dry.			

Equipment: JCB Backhoe 3CXeco

Originated by: CM/BH
Compiled By: BH
Checked By: KP

Notes: "mbgs" means metres below ground surface. "OCs" means organochlorine pesticides. "DTPL" means Drier Than Plastic Limit. "APL" means At Plastic Limit. "WTPL" means Wetter Than Plastic Limit

Phase Two ESA
Site Location: 8970 Stanley Ave, Niagara Falls, Ontario
Job Number: SCT196351
Date: September 17, 2019

TESTPIT LOG: 4				**UTM: 4767149, 656164**	
Sample Number	**Depth (mbgs)**	**Comments (odour, staining, etc.)**	**COV/TOV (ppm)**	**Stratigraphy**	
				Depth (mbgs)	**Material Description**
TP4-1 (Metals)	0.5	No odours or staining	0/15	0.0-0.5	Brown, Silty Sand/Sandy Silt FILL, some clay, moist
-	-	No odours or staining	2/20	0.5-1.0	Brown, Sandy Silt FILL, traces of clay, moist
-	-	No odours or staining	0/5	1.0-1.5	Reddish brown, Silty Clay/Clayey Silt NATIVE, traces of gravel, APL
Final Depth: 1.5 mbgs		Upon Completion: Testpit remained open and dry			

Equipment: JCB Backhoe 3CXeco

Originated by: CM/BH
Compiled By: BH
Checked By: KP

Notes: "mbgs" means metres below ground surface. "OCs" means organochlorine pesticides. "DTPL" means Drier Than Plastic Limit. "APL" means At Plastic Limit. "WTPL" means Wetter Than Plastic Limit

RECORD OF BOREHOLE No. BH/MW2

Project Number:	SCT196351	Drilling Method:	50 mm Direct Push		
Project Client:	Ricci Law Professional Corporation	Drilling Machine:	Bosch Hammer		
Project Name:		Date Started:	Aug 28, 19	Date Completed:	Aug 28, 19
Project Location:	8970 Stanley Avenue, Niagara Falls	Logged by:	CM	Compiled by:	CM
Drilling Location:	As shown on Borehole Location Plan	Reviewed by:		Revision No.:	0, 9/5/19

wood.

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	SOIL SCREENING		
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	PenetrationTesting ○ SPT ● DCPT 20 40 60 80	✳ Combustible Organic Vapour (ppm) ✥ Combustible Organic Vapour (%LEL) △ Total Organic Vapour (ppm) 100 200 300 400	INSTRUMENTATION INSTALLATION	COMMENTS
	CONCRETE										
	Black Clayey **FILL** 0.1 some Gravel moist to Wet Petroleum Odour	DT	1	59					✳ 3 △ 25.0		Sample BH/MW2-1-D (0.15 mbgs) submitted for laboratory analysis of PHCs, and VOCs.
	Brown 0.6 **SILTY CLAY/CLAYEY SILT** with traces of Gravel Fissured APL Black Staining from 0.6 - 0.75 mbgs	DT	2	100		1			✳ 1 △ 20.0		
		DT	3	100					✳ 1 △ 10.0		Sample BH/MW2-3-D (1.4 mbgs) submitted for laboratory analysis of pH.
		DT	4	100		2			✳ 2 △ 30.0		
	BOREHOLE TERMINATED. 2.1										Upon Completion: Borehole remained open and dry. Monitoring Well Installation: 2.5 cm diameter schedule 40 pipe with 1.5 m length #10 mil slotted screen, flushmount casing. No evidence of free flowing product.

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▽ No freestanding groundwater measured in open borehole on completion of drilling.

Scale: 1 : 17

RECORD OF BOREHOLE No. BH/MW7

Project Number:	SCT196351	Drilling Method:	150 mm Solid Stem Augers		
Project Client:	Ricci Law Professional Corporation	Drilling Machine:	Geoprobe 7822DT		
Project Name:		Date Started:	Aug 28, 19	Date Completed:	Aug 28, 19
Project Location:	8970 Stanley Avenue, Niagara Falls	Logged by:	CM	Compiled by:	CM
Drilling Location:	As shown on Borehole Location Plan	Reviewed by:		Revision No.:	0, 9/5/19

wood.

LITHOLOGY PROFILE			SOIL SAMPLING						FIELD TESTING	SOIL SCREENING		
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:		Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	Penetration Testing ○ SPT ● DCPT 20 40 60 80	✳ Combustible Organic Vapour (ppm) ✥ Combustible Organic Vapour (%LEL) △ Total Organic Vapour (ppm) 100 200 300 400	INSTRUMENTATION INSTALLATION	COMMENTS
	Brown and Grey Gravelly Sand **FILL** moist											
	Brown **SILTY CLAY/CLAYEY SILT** with traces of Gravel Fissured APL to WTPL	0.4	DT	1	43		1			0 0.0		
			DT	2	100		2			0 0.0		Sample BH/MW7-2-D (1.7 mbgs) submitted for laboratory analysis of PHCs, and VOCs.
			DT	3	100		3 4			0 0.0		
			DT	4	100		5			0 0.0		
	BOREHOLE TERMINATED.	6.1					6					Upon Completion: Borehole remained open and dry. Monitoring Well Installation: 5 cm diameter schedule 40 pipe with 3.0 m length #10 mil slotted screen, stickup casing. No evidence of free flowing product.

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▽ No freestanding groundwater measured in open borehole on completion of drilling.

Scale: 1 : 39

RECORD OF BOREHOLE No. BH/MW8

Project Number:	SCT196351	Drilling Method:	150 mm Solid Stem Augers		
Project Client:	Ricci Law Professional Corporation	Drilling Machine:	Geoprobe 7822DT		
Project Name:		Date Started:	Aug 28, 19	Date Completed:	Aug 28, 19
Project Location:	8970 Stanley Avenue, Niagara Falls	Logged by:	CM	Compiled by:	CM
Drilling Location:	As shown on Borehole Location Plan	Reviewed by:		Revision No.:	0, 9/5/19

wood.

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	SOIL SCREENING		
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	PenetrationTesting ○ SPT ● DCPT 20 40 60 80	✳ Combustible Organic Vapour (ppm) ✥ Combustible Organic Vapour (%LEL) △ Total Organic Vapour (ppm) 100 200 300 400	INSTRUMENTATION INSTALLATION	COMMENTS
	Brown Gravelly Sand **FILL**										
	Brown 0.3 **SILTY CLAY/CLAYEY SILT** with traces of Gravel Fissured Black Staining from 0.25 to 0.5 mbgs APL to WTPL	DT	1	49		1			0 0.0		
		DT	2	100		2			0 0.0		
		DT	3	49		3			0 0.0		
		DT	4	100		4			0 0.0		
						5					
						6					
	BORHEOLE TERMINATED. 6.1										Upon Completion: Borehole remained open and dry. Monitoring Well Installation: 5 cm diameter schedule 40 pipe with 3.0 m length #10 mil slotted screen, stickup casing. No evidence of free flowing product.

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▽ No freestanding groundwater measured in open borehole on completion of drilling.

Scale: 1 : 39

RECORD OF BOREHOLE No. BH/MW9

Project Number:	SCT196351	Drilling Method:	50 mm Direct Push		
Project Client:	Ricci Law Professional Corporation	Drilling Machine:	Bosch Hammer		
Project Name:		Date Started:	Aug 28, 19	Date Completed:	Aug 28, 19
Project Location:	8970 Stanley Avenue, Niagara Falls	Logged by:	CM	Compiled by:	CM
Drilling Location:	As shown on Borehole Location Plan	Reviewed by:		Revision No.:	0, 9/5/19

wood.

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	SOIL SCREENING		
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	PenetrationTesting ○ SPT ● DCPT 20 40 60 80	✳ Combustible Organic Vapour (ppm) ✥ Combustible Organic Vapour (%LEL) △ Total Organic Vapour (ppm) 100 200 300 400	INSTRUMENTATION INSTALLATION	COMMENTS
	Brown Clayey **FILL** Some Gravel moist	DT	1	30							Sample BH/MW9-1-D (0.15 mbgs) submitted for laboratory analysis of PHCs, and VOCs.
	Brown 0.6 **SILTY CLAY/CLAYEY SILT** with traces of Gravel Fissured APL to WTPL	DT	2	100		1			0 0.0		
		DT	3	100					0 0.0		
		DT	4	100		2			0 0.0		
	BORHEOLE TERMIANTED. 2.1										Upon Completion: Borehole remained open and dry. Monitoring Well Installation: 2.5 cm diameter schedule 40 pipe with 1.5 m length #10 mil slotted screen, flushmount casing. No evidence of free flowing product.

Wood Environment & Infrastructure Solutions

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▽ No freestanding groundwater measured in open borehole on completion of drilling.

Scale: 1 : 17

RECORD OF BOREHOLE No. BH1

Project Number:	SCT196351	Drilling Method:	75 mm Direct Push		
Project Client:	Ricci Law Professional Corporation	Drilling Machine:	Geoprobe 7822DT		
Project Name:		Date Started:	Aug 28, 19	Date Completed:	Aug 28, 19
Project Location:	8970 Stanley Avenue, Niagara Falls	Logged by:	CM	Compiled by:	CM
Drilling Location:	As shown on Borehole Location Plan	Reviewed by:		Revision No.:	0, 9/5/19

wood.

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	SOIL SCREENING		
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	Penetration Testing ○ SPT ● DCPT 20 40 60 80	✳ Combustible Organic Vapour (ppm) ✥ Combustible Organic Vapour (%LEL) △ Total Organic Vapour (ppm) 100 200 300 400	INSTRUMENTATION INSTALLATION	COMMENTS
	0.05 m Wood Chips over Grey Gravelly Sand **FILL** moist										Sample BH1-1-D (0.15 mbgs) submitted for laboratory analysis of PHCs, and VOCs.
	Brown 0.4 **SILTY CLAY/CLAYEY SILT** with traces of Gravel Fissured APL	DT	1	49		1			0 10.0		
		DT	2	100		2			0 5.0		Samples BH1-2-C and Dup AA (1.5 - 3.0 mbgs) submitted for laboratory analysis of pH.
	BOREHOLE TERMIANTED. 3.1					3					Upon Completion: Borehole remained open and dry.

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▽ No freestanding groundwater measured in open borehole on completion of drilling.

Scale: 1 : 28

RECORD OF BOREHOLE No. BH10

Project Number:	SCT196351	Drilling Method:	50 mm Direct Push		
Project Client:	Ricci Law Professional Corporation	Drilling Machine:	Bosch Hammer		
Project Name:		Date Started:	Aug 28, 19	Date Completed:	Aug 28, 19
Project Location:	8970 Stanley Avenue, Niagara Falls	Logged by:	CM	Compiled by:	CM
Drilling Location:	As shown on Borehole Location Plan	Reviewed by:		Revision No.:	0, 9/5/19

wood.

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	SOIL SCREENING		
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	PenetrationTesting ○ SPT ● DCPT 20 40 60 80	✳ Combustible Organic Vapour (ppm) ✥ Combustible Organic Vapour (%LEL) △ Total Organic Vapour (ppm) 100 200 300 400	INSTRUMENTATION INSTALLATION	COMMENTS
	Brown and Grey Gravelly Sand **FILL** Black Staining from 0.0 to 0.15 mbgs moist	DT	1	38							Sample BH10-1-D (0.15 mbgs) submitted for laboratory analysis of PHCs, and VOCs.
	Brown 0.6 **SILTY CLAY/CLAYEY SILT** with traces of Gravel Fissured APL	DT	2	100		1			0 0.0		
		DT	3	100					0 0.0		
		DT	4	100		2			0 0.0		
	BOREHOLE TERMINATED. 2.1										Upon Completion: Borehole remained open and dry.

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▽ No freestanding groundwater measured in open borehole on completion of drilling.

Scale: 1 : 17

RECORD OF BOREHOLE No. BH3

Project Number:	SCT196351	Drilling Method:	75 mm Direct Push		
Project Client:	Ricci Law Professional Corporation	Drilling Machine:	Geoprobe 7822DT		
Project Name:		Date Started:	Aug 28, 19	Date Completed:	Aug 28, 19
Project Location:	8970 Stanley Avenue, Niagara Falls	Logged by:	CM	Compiled by:	CM
Drilling Location:	As shown on Borehole Location Plan	Reviewed by:		Revision No.:	0, 9/5/19

wood.

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	SOIL SCREENING		
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	Penetration Testing ○ SPT ● DCPT 20 40 60 80	✳ Combustible Organic Vapour (ppm) ✥ Combustible Organic Vapour (%LEL) △ Total Organic Vapour (ppm) 100 200 300 400	INSTRUMENTATION INSTALLATION	COMMENTS
	Black and Grey Gravelly Sand **FILL** moist										
	Brown 0.3 **SILTY CLAY/CLAYEY SILT** with traces of Gravel Fissured APL to WTPL	DT	1	45		1			0 0.0		Sample BH3-1-C (0.0-1.5 mbgs) submitted for laboratory analysis of pH.
		DT	2	100		2			0 0.0		
	BOREHOLE TERMINATED. 3.1					3					Upon Completion: Borehole remained open and dry.

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▽ No freestanding groundwater measured in open borehole on completion of drilling.

Scale: 1 : 28

RECORD OF BOREHOLE No. BH4

Project Number:	SCT196351	Drilling Method:	75 mm Direct Push		
Project Client:	Ricci Law Professional Corporation	Drilling Machine:	Geoprobe 7822DT		
Project Name:		Date Started:	Aug 28, 19	Date Completed:	Aug 28, 19
Project Location:	8970 Stanley Avenue, Niagara Falls	Logged by:	CM	Compiled by:	CM
Drilling Location:	As shown on Borehole Location Plan	Reviewed by:		Revision No.:	0, 9/5/19

wood.

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	SOIL SCREENING		
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	PenetrationTesting ○ SPT ● DCPT 20 40 60 80	✳ Combustible Organic Vapour (ppm) ✥ Combustible Organic Vapour (%LEL) △ Total Organic Vapour (ppm) 100 200 300 400	INSTRUMENTATION INSTALLATION	COMMENTS
	Grey Gravelly Sand **FILL** moist										
	Brown 0.3 **SILTY CLAY/CLAYEY SILT** with traces of Gravel Fissured APL	DT	1	50		1			0 0.0		
		DT	2	100		2			0 0.0		
						3					
	BOREHOLE TERMINATED. 3.1										Upon Completion: Borehole remained open and dry.

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▽ No freestanding groundwater measured in open borehole on completion of drilling.

RECORD OF BOREHOLE No. BH5

Project Number:	SCT196351	Drilling Method:	75 mm Direct Push		
Project Client:	Ricci Law Professional Corporation	Drilling Machine:	Geoprobe 7822DT		
Project Name:		Date Started:	Aug 28, 19	Date Completed:	Aug 28, 19
Project Location:	8970 Stanley Avenue, Niagara Falls	Logged by:	CM	Compiled by:	CM
Drilling Location:	As shown on Borehole Location Plan	Reviewed by:		Revision No.:	0, 9/5/19

wood.

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	SOIL SCREENING		
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	PenetrationTesting ○ SPT ● DCPT 20 40 60 80	✳ Combustible Organic Vapour (ppm) ✥ Combustible Organic Vapour (%LEL) △ Total Organic Vapour (ppm) 100 200 300 400	INSTRUMENTATION INSTALLATION	COMMENTS
	Grey Gravelly Sand **FILL** moist										
	Brown 0.5 **SILTY CLAY/CLAYEY SILT** with traces of Gravel Fissured APL	DT	1	75		1			1 5.0		Sample BH5-1-C (0.0-1.5 mbgs) submitted for laboratory analysis of pH.
		DT	2	100		2			0 0.0		
	BOREHOLE TERMIANTED. 3.1					3					Upon Completion: Borehole remained open and dry.

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▽ No freestanding groundwater measured in open borehole on completion of drilling.

RECORD OF BOREHOLE No. BH6

Project Number:	SCT196351	Drilling Method:	50 mm Direct Push		
Project Client:	Ricci Law Professional Corporation	Drilling Machine:	Bosch Hammer		
Project Name:		Date Started:	Aug 28, 19	Date Completed:	Aug 28, 19
Project Location:	8970 Stanley Avenue, Niagara Falls	Logged by:	CM	Compiled by:	CM
Drilling Location:	As shown on Borehole Location Plan	Reviewed by:		Revision No.:	0, 9/5/19

wood.

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	SOIL SCREENING		
Lithology Plot	DESCRIPTION Local Ground Surface Elevation:	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value	DEPTH (m)	ELEVATION (m)	PenetrationTesting ○ SPT ● DCPT 20 40 60 80	✳ Combustible Organic Vapour (ppm) ✥ Combustible Organic Vapour (%LEL) △ Total Organic Vapour (ppm) 100 200 300 400	INSTRUMENTATION INSTALLATION	COMMENTS
	Black Silty Clay **FILL** Some Gravel Slight Odour moist	DT	1	59					1 10.0		Samples BH6-1-D and Dup AE (0.15 mbgs) submitted for laboratory analysis of PHCs, and VOCs.
	Brown 0.6 **SILTY CLAY/CLAYEY SILT** with traces of Gravel Black Staining from 0.6 to 0.75 mbgs APL	DT	2	100		1			0 0.0		
		DT	3	100					0 0.0		
		DT	4	100		2			0 0.0		
	BOREHOLE TERMIANTED. 2.1										Upon Completion: Borehole remained open and dry.

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▽ No freestanding groundwater measured in open borehole on completion of drilling.

Scale: 1 : 17

APPENDIX C

LABORATORY CERTIFICATES OF ANALYSIS

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Certificate of Analysis

Wood Environment & Infrastructure (Thorold)

3300 Merrittville Hwy, Unit 5
Thorold, ON L2V 4Y6
Attn: Patrick D. Shriner

Client PO:
Project: SCT196351
Custody: 48398/399/400/401/402/403

Report Date: 5-Sep-2019
Order Date: 29-Aug-2019

Order #: 1935485

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1935485-01	BH1-1-D
1935485-02	BH1-2-C
1935485-03	BH/MW2-1-D
1935485-04	BH/MW2-3-D
1935485-05	BH3-1-C
1935485-06	BH5-1-C
1935485-07	BH6-1-D
1935485-08	BH/MW7-2-D
1935485-09	BH/MW9-1-D
1935485-10	BH10-1-D
1935485-11	Dup AA
1935485-12	Dup AE

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PHC F1	CWS Tier 1 - P&T GC-FID	4-Sep-19	4-Sep-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	30-Aug-19	5-Sep-19
REG 153: pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	4-Sep-19	5-Sep-19
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	4-Sep-19	4-Sep-19
Solids, %	Gravimetric, calculation	3-Sep-19	3-Sep-19

Certificate of Analysis

Client: Wood Environment & Infrastructure (Thorold)

Client PO:

Report Date: 05-Sep-2019

Order Date: 29-Aug-2019

Project Description: SCT196351

	Client ID:	BH1-1-D	BH1-2-C	BH/MW2-1-D	BH/MW2-3-D
	Sample Date:	28-Aug-19 10:55	28-Aug-19 11:00	28-Aug-19 11:05	28-Aug-19 11:25
	Sample ID:	1935485-01	1935485-02	1935485-03	1935485-04
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	92.1	-	81.4	-
General Inorganics					
pH	0.05 pH Units	-	7.50	-	7.38
Volatiles					
Acetone	0.50 ug/g dry	<0.50	-	<0.50	-
Benzene	0.02 ug/g dry	<0.02	-	<0.02	-
Bromodichloromethane	0.05 ug/g dry	<0.05	-	<0.05	-
Bromoform	0.05 ug/g dry	<0.05	-	<0.05	-
Bromomethane	0.05 ug/g dry	<0.05	-	<0.05	-
Carbon Tetrachloride	0.05 ug/g dry	<0.05	-	<0.05	-
Chlorobenzene	0.05 ug/g dry	<0.05	-	<0.05	-
Chloroform	0.05 ug/g dry	<0.05	-	<0.05	-
Dibromochloromethane	0.05 ug/g dry	<0.05	-	<0.05	-
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	-	<0.05	-
1,2-Dichlorobenzene	0.05 ug/g dry	<0.05	-	<0.05	-
1,3-Dichlorobenzene	0.05 ug/g dry	<0.05	-	<0.05	-
1,4-Dichlorobenzene	0.05 ug/g dry	<0.05	-	<0.05	-
1,1-Dichloroethane	0.05 ug/g dry	<0.05	-	<0.05	-
1,2-Dichloroethane	0.05 ug/g dry	<0.05	-	<0.05	-
1,1-Dichloroethylene	0.05 ug/g dry	<0.05	-	<0.05	-
cis-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	-	<0.05	-
trans-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	-	<0.05	-
1,2-Dichloropropane	0.05 ug/g dry	<0.05	-	<0.05	-
cis-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	-	<0.05	-
trans-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	-	<0.05	-
1,3-Dichloropropene, total	0.05 ug/g dry	<0.05	-	<0.05	-
Ethylbenzene	0.05 ug/g dry	<0.05	-	<0.05	-
Ethylene dibromide (dibromoethan	0.05 ug/g dry	<0.05	-	<0.05	-
Hexane	0.05 ug/g dry	<0.05	-	<0.05	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	<0.50	-	<0.50	-
Methyl Isobutyl Ketone	0.50 ug/g dry	<0.50	-	<0.50	-
Methyl tert-butyl ether	0.05 ug/g dry	<0.05	-	<0.05	-
Methylene Chloride	0.05 ug/g dry	<0.05	-	<0.05	-
Styrene	0.05 ug/g dry	<0.05	-	<0.05	-
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	<0.05	-	<0.05	-

Certificate of Analysis

Client: Wood Environment & Infrastructure (Thorold)

Client PO:

Report Date: 05-Sep-2019

Order Date: 29-Aug-2019

Project Description: SCT196351

	Client ID:	BH1-1-D	BH1-2-C	BH/MW2-1-D	BH/MW2-3-D
	Sample Date:	28-Aug-19 10:55	28-Aug-19 11:00	28-Aug-19 11:05	28-Aug-19 11:25
	Sample ID:	1935485-01	1935485-02	1935485-03	1935485-04
	MDL/Units	Soil	Soil	Soil	Soil
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	<0.05	-	<0.05	-
Tetrachloroethylene	0.05 ug/g dry	<0.05	-	<0.05	-
Toluene	0.05 ug/g dry	<0.05	-	<0.05	-
1,1,1-Trichloroethane	0.05 ug/g dry	<0.05	-	<0.05	-
1,1,2-Trichloroethane	0.05 ug/g dry	<0.05	-	<0.05	-
Trichloroethylene	0.05 ug/g dry	<0.05	-	<0.05	-
Trichlorofluoromethane	0.05 ug/g dry	<0.05	-	<0.05	-
Vinyl chloride	0.02 ug/g dry	<0.02	-	<0.02	-
m,p-Xylenes	0.05 ug/g dry	<0.05	-	<0.05	-
o-Xylene	0.05 ug/g dry	<0.05	-	<0.05	-
Xylenes, total	0.05 ug/g dry	<0.05	-	<0.05	-
4-Bromofluorobenzene	Surrogate	103%	-	99.1%	-
Dibromofluoromethane	Surrogate	73.8%	-	80.3%	-
Toluene-d8	Surrogate	89.2%	-	85.3%	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	-	<7	-
F2 PHCs (C10-C16)	4 ug/g dry	<4	-	<4	-
F3 PHCs (C16-C34)	8 ug/g dry	143	-	63	-
F4 PHCs (C34-C50)	6 ug/g dry	61	-	<6	-

Certificate of Analysis

Client: Wood Environment & Infrastructure (Thorold)

Client PO:

Report Date: 05-Sep-2019

Order Date: 29-Aug-2019

Project Description: SCT196351

	Client ID:	BH3-1-C	BH5-1-C	BH6-1-D	BH/MW7-2-D
	Sample Date:	28-Aug-19 11:10	28-Aug-19 12:45	28-Aug-19 11:55	28-Aug-19 12:05
	Sample ID:	1935485-05	1935485-06	1935485-07	1935485-08
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	-	-	82.9	81.4
General Inorganics					
pH	0.05 pH Units	6.66	7.45	-	-
Volatiles					
Acetone	0.50 ug/g dry	-	-	<0.50	<0.50
Benzene	0.02 ug/g dry	-	-	<0.02	<0.02
Bromodichloromethane	0.05 ug/g dry	-	-	<0.05	<0.05
Bromoform	0.05 ug/g dry	-	-	<0.05	<0.05
Bromomethane	0.05 ug/g dry	-	-	<0.05	<0.05
Carbon Tetrachloride	0.05 ug/g dry	-	-	<0.05	<0.05
Chlorobenzene	0.05 ug/g dry	-	-	<0.05	<0.05
Chloroform	0.05 ug/g dry	-	-	<0.05	<0.05
Dibromochloromethane	0.05 ug/g dry	-	-	<0.05	<0.05
Dichlorodifluoromethane	0.05 ug/g dry	-	-	<0.05	<0.05
1,2-Dichlorobenzene	0.05 ug/g dry	-	-	<0.05	<0.05
1,3-Dichlorobenzene	0.05 ug/g dry	-	-	<0.05	<0.05
1,4-Dichlorobenzene	0.05 ug/g dry	-	-	<0.05	<0.05
1,1-Dichloroethane	0.05 ug/g dry	-	-	<0.05	<0.05
1,2-Dichloroethane	0.05 ug/g dry	-	-	<0.05	<0.05
1,1-Dichloroethylene	0.05 ug/g dry	-	-	<0.05	<0.05
cis-1,2-Dichloroethylene	0.05 ug/g dry	-	-	<0.05	<0.05
trans-1,2-Dichloroethylene	0.05 ug/g dry	-	-	<0.05	<0.05
1,2-Dichloropropane	0.05 ug/g dry	-	-	<0.05	<0.05
cis-1,3-Dichloropropylene	0.05 ug/g dry	-	-	<0.05	<0.05
trans-1,3-Dichloropropylene	0.05 ug/g dry	-	-	<0.05	<0.05
1,3-Dichloropropene, total	0.05 ug/g dry	-	-	<0.05	<0.05
Ethylbenzene	0.05 ug/g dry	-	-	<0.05	<0.05
Ethylene dibromide (dibromoethar	0.05 ug/g dry	-	-	<0.05	<0.05
Hexane	0.05 ug/g dry	-	-	<0.05	<0.05
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	-	-	<0.50	<0.50
Methyl Isobutyl Ketone	0.50 ug/g dry	-	-	<0.50	<0.50
Methyl tert-butyl ether	0.05 ug/g dry	-	-	<0.05	<0.05
Methylene Chloride	0.05 ug/g dry	-	-	<0.05	<0.05
Styrene	0.05 ug/g dry	-	-	<0.05	<0.05
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	-	-	<0.05	<0.05

Certificate of Analysis

Client: Wood Environment & Infrastructure (Thorold)

Client PO:

Report Date: 05-Sep-2019

Order Date: 29-Aug-2019

Project Description: SCT196351

	Client ID:	BH3-1-C	BH5-1-C	BH6-1-D	BH/MW7-2-D
	Sample Date:	28-Aug-19 11:10	28-Aug-19 12:45	28-Aug-19 11:55	28-Aug-19 12:05
	Sample ID:	1935485-05	1935485-06	1935485-07	1935485-08
	MDL/Units	Soil	Soil	Soil	Soil
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	-	-	<0.05	<0.05
Tetrachloroethylene	0.05 ug/g dry	-	-	<0.05	<0.05
Toluene	0.05 ug/g dry	-	-	<0.05	<0.05
1,1,1-Trichloroethane	0.05 ug/g dry	-	-	<0.05	<0.05
1,1,2-Trichloroethane	0.05 ug/g dry	-	-	<0.05	<0.05
Trichloroethylene	0.05 ug/g dry	-	-	<0.05	<0.05
Trichlorofluoromethane	0.05 ug/g dry	-	-	<0.05	<0.05
Vinyl chloride	0.02 ug/g dry	-	-	<0.02	<0.02
m,p-Xylenes	0.05 ug/g dry	-	-	<0.05	<0.05
o-Xylene	0.05 ug/g dry	-	-	<0.05	<0.05
Xylenes, total	0.05 ug/g dry	-	-	<0.05	<0.05
4-Bromofluorobenzene	Surrogate	-	-	105%	105%
Dibromofluoromethane	Surrogate	-	-	80.4%	78.6%
Toluene-d8	Surrogate	-	-	86.5%	88.9%
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	-	-	<7	<7
F2 PHCs (C10-C16)	4 ug/g dry	-	-	<4	<4
F3 PHCs (C16-C34)	8 ug/g dry	-	-	79	<8
F4 PHCs (C34-C50)	6 ug/g dry	-	-	10	<6

Certificate of Analysis

Client: Wood Environment & Infrastructure (Thorold)

Client PO:

Report Date: 05-Sep-2019

Order Date: 29-Aug-2019

Project Description: SCT196351

	Client ID:	BH/MW9-1-D	BH10-1-D	Dup AA	Dup AE
	Sample Date:	28-Aug-19 12:30	28-Aug-19 12:50	28-Aug-19 00:00	28-Aug-19 00:00
	Sample ID:	1935485-09	1935485-10	1935485-11	1935485-12
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	85.8	95.9	-	80.2
General Inorganics					
pH	0.05 pH Units	-	-	7.64	-
Volatiles					
Acetone	0.50 ug/g dry	<0.50	<0.50	-	<0.50
Benzene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Bromodichloromethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Bromoform	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Bromomethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Carbon Tetrachloride	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Chlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Chloroform	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Dibromochloromethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,2-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,3-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,4-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,1-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,2-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,1-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
cis-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
trans-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,2-Dichloropropane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
cis-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
trans-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,3-Dichloropropene, total	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Ethylbenzene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Ethylene dibromide (dibromoethar	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Hexane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	<0.50	<0.50	-	<0.50
Methyl Isobutyl Ketone	0.50 ug/g dry	<0.50	<0.50	-	<0.50
Methyl tert-butyl ether	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Methylene Chloride	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Styrene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05

Certificate of Analysis

Client: Wood Environment & Infrastructure (Thorold)

Client PO:

Report Date: 05-Sep-2019

Order Date: 29-Aug-2019

Project Description: SCT196351

	Client ID:	BH/MW9-1-D	BH10-1-D	Dup AA	Dup AE
	Sample Date:	28-Aug-19 12:30	28-Aug-19 12:50	28-Aug-19 00:00	28-Aug-19 00:00
	Sample ID:	1935485-09	1935485-10	1935485-11	1935485-12
	MDL/Units	Soil	Soil	Soil	Soil
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Tetrachloroethylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Toluene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,1,1-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,1,2-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Trichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Trichlorofluoromethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Vinyl chloride	0.02 ug/g dry	<0.02	<0.02	-	<0.02
m,p-Xylenes	0.05 ug/g dry	<0.05	<0.05	-	<0.05
o-Xylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Xylenes, total	0.05 ug/g dry	<0.05	<0.05	-	<0.05
4-Bromofluorobenzene	Surrogate	99.3%	100%	-	104%
Dibromofluoromethane	Surrogate	76.1%	69.3%	-	77.2%
Toluene-d8	Surrogate	79.4%	89.4%	-	88.4%
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	-	<7
F2 PHCs (C10-C16)	4 ug/g dry	<4	<4	-	<4
F3 PHCs (C16-C34)	8 ug/g dry	1100	7560	-	<8
F4 PHCs (C34-C50)	6 ug/g dry	250	2620	-	<6

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: 4-Bromofluorobenzene	*3.25*		*ug/g*		*101*	*50-140*			
Surrogate: Dibromofluoromethane	*3.00*		*ug/g*		*93.8*	*50-140*			
Surrogate: Toluene-d8	*2.84*		*ug/g*		*88.8*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.57	0.05	pH Units	7.56			0.1	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND				40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND				30	
F3 PHCs (C16-C34)	ND	8	ug/g dry	ND				30	
F4 PHCs (C34-C50)	ND	6	ug/g dry	ND				30	
Physical Characteristics									
% Solids	85.2	0.1	% by Wt.	85.0			0.2	25	
Volatiles									
Acetone	ND	0.50	ug/g dry	ND				50	
Benzene	ND	0.02	ug/g dry	ND				50	
Bromodichloromethane	ND	0.05	ug/g dry	ND				50	
Bromoform	ND	0.05	ug/g dry	ND				50	
Bromomethane	ND	0.05	ug/g dry	ND				50	
Carbon Tetrachloride	ND	0.05	ug/g dry	ND				50	
Chlorobenzene	ND	0.05	ug/g dry	ND				50	
Chloroform	ND	0.05	ug/g dry	ND				50	
Dibromochloromethane	ND	0.05	ug/g dry	ND				50	
Dichlorodifluoromethane	ND	0.05	ug/g dry	ND				50	
1,2-Dichlorobenzene	ND	0.05	ug/g dry	ND				50	
1,3-Dichlorobenzene	ND	0.05	ug/g dry	ND				50	
1,4-Dichlorobenzene	ND	0.05	ug/g dry	ND				50	
1,1-Dichloroethane	ND	0.05	ug/g dry	ND				50	
1,2-Dichloroethane	ND	0.05	ug/g dry	ND				50	
1,1-Dichloroethylene	ND	0.05	ug/g dry	ND				50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND				50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND				50	
1,2-Dichloropropane	ND	0.05	ug/g dry	ND				50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND				50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND				50	
Ethylbenzene	ND	0.05	ug/g dry	ND				50	
Ethylene dibromide (dibromoethane	ND	0.05	ug/g dry	ND				50	
Hexane	ND	0.05	ug/g dry	ND				50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g dry	ND				50	
Methyl Isobutyl Ketone	ND	0.50	ug/g dry	ND				50	
Methyl tert-butyl ether	ND	0.05	ug/g dry	ND				50	
Methylene Chloride	ND	0.05	ug/g dry	ND				50	
Styrene	ND	0.05	ug/g dry	ND				50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g dry	ND				50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g dry	ND				50	
Tetrachloroethylene	ND	0.05	ug/g dry	ND				50	
Toluene	ND	0.05	ug/g dry	ND				50	
1,1,1-Trichloroethane	ND	0.05	ug/g dry	ND				50	
1,1,2-Trichloroethane	ND	0.05	ug/g dry	ND				50	
Trichloroethylene	ND	0.05	ug/g dry	ND				50	
Trichlorofluoromethane	ND	0.05	ug/g dry	ND				50	
Vinyl chloride	ND	0.02	ug/g dry	ND				50	
m,p-Xylenes	ND	0.05	ug/g dry	ND				50	
o-Xylene	ND	0.05	ug/g dry	ND				50	
Surrogate: 4-Bromofluorobenzene	*3.22*		*ug/g dry*		*93.2*	*50-140*			
Surrogate: Dibromofluoromethane	*3.30*		*ug/g dry*		*95.5*	*50-140*			
Surrogate: Toluene-d8	*3.15*		*ug/g dry*		*91.1*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	204	7	ug/g		102	80-120			
F2 PHCs (C10-C16)	78	4	ug/g	ND	78.5	60-140			
F3 PHCs (C16-C34)	264	8	ug/g	ND	79.4	60-140			
F4 PHCs (C34-C50)	37	6	ug/g	ND	91.9	60-140			
Volatiles									
Acetone	11.4	0.50	ug/g		114	50-140			
Benzene	4.35	0.02	ug/g		109	60-130			
Bromodichloromethane	4.79	0.05	ug/g		120	60-130			
Bromoform	5.03	0.05	ug/g		126	60-130			
Bromomethane	4.90	0.05	ug/g		123	50-140			
Carbon Tetrachloride	4.84	0.05	ug/g		121	60-130			
Chlorobenzene	4.54	0.05	ug/g		113	60-130			
Chloroform	4.77	0.05	ug/g		119	60-130			
Dibromochloromethane	4.94	0.05	ug/g		123	60-130			
Dichlorodifluoromethane	5.11	0.05	ug/g		128	50-140			
1,2-Dichlorobenzene	4.07	0.05	ug/g		102	60-130			
1,3-Dichlorobenzene	4.11	0.05	ug/g		103	60-130			
1,4-Dichlorobenzene	4.09	0.05	ug/g		102	60-130			
1,1-Dichloroethane	4.59	0.05	ug/g		115	60-130			
1,2-Dichloroethane	4.87	0.05	ug/g		122	60-130			
1,1-Dichloroethylene	4.95	0.05	ug/g		124	60-130			
cis-1,2-Dichloroethylene	4.26	0.05	ug/g		106	60-130			
trans-1,2-Dichloroethylene	4.49	0.05	ug/g		112	60-130			
1,2-Dichloropropane	4.08	0.05	ug/g		102	60-130			
cis-1,3-Dichloropropylene	4.14	0.05	ug/g		103	60-130			
trans-1,3-Dichloropropylene	3.87	0.05	ug/g		96.6	60-130			
Ethylbenzene	4.56	0.05	ug/g		114	60-130			
Ethylene dibromide (dibromoethane	4.51	0.05	ug/g		113	60-130			
Hexane	4.00	0.05	ug/g		100	60-130			
Methyl Ethyl Ketone (2-Butanone)	9.37	0.50	ug/g		93.7	50-140			
Methyl Isobutyl Ketone	10.2	0.50	ug/g		102	50-140			
Methyl tert-butyl ether	11.1	0.05	ug/g		111	50-140			
Methylene Chloride	3.47	0.05	ug/g		86.8	60-130			
Styrene	4.48	0.05	ug/g		112	60-130			
1,1,1,2-Tetrachloroethane	4.83	0.05	ug/g		121	60-130			
1,1,2,2-Tetrachloroethane	4.53	0.05	ug/g		113	60-130			
Tetrachloroethylene	4.63	0.05	ug/g		116	60-130			
Toluene	4.48	0.05	ug/g		112	60-130			
1,1,1-Trichloroethane	4.74	0.05	ug/g		119	60-130			
1,1,2-Trichloroethane	4.35	0.05	ug/g		109	60-130			
Trichloroethylene	4.37	0.05	ug/g		109	60-130			
Trichlorofluoromethane	4.78	0.05	ug/g		119	50-140			
Vinyl chloride	4.30	0.02	ug/g		107	50-140			
m,p-Xylenes	9.20	0.05	ug/g		115	60-130			
o-Xylene	4.73	0.05	ug/g		118	60-130			
Surrogate: 4-Bromofluorobenzene	*2.55*		*ug/g*		*79.7*	*50-140*			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

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Paracel ID: 1935485

Chain of Custody (Lab Use Only) № 48398

Page 1 of 6

Client Name: Wood E&I Solutions	Project Reference: SCT196351	**Turnaround Time:**
Contact Name: Tracy Wolowiec	Quote #: 19-010	☐ 1 Day ☐ 3 Day
Address: 3300 Merritville Hwy, Unit 5, Thorold ON L2V 4Y6	PO #:	☐ 2 Day ☒ Regular
Telephone: 905-687-6616	Email Address: tracy.wolowiec@woodplc.com	Date Required:

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 1935485

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	Required Analyses: BTEX	VOC	PHC (F1-F4)	pH
1	BH1-1-D	S		2	Aug 28/19	10:55		X	X	
2	BH1-1-C	S		1		10:55				
3	BH1-2-C	S		1		11:00				X
4	BH/MW2-1-D	S		2		11:05		X	X	
5	BH/MW2-2-D	S		2		11:20				
6	BH/MW2-3-D	S		2		11:25				X
7	BH/MW2-4-C	S		1		11:30				
8	BH3-1-D	S		2		11:10				
9	BH3-1-C	S		1		11:10				X
10	BH3-2-D	S		2		11:15				

Comments: governed by the T/C of SNAC7-003
hold all remaining samples for future analysis

Method of Delivery: P/U

Relinquished By (Sign):	Received by Driver/Depot: D. Dalton (Niagara)	Received at Lab:	Verified By: BHomeniec
Relinquished By (Print): Cameron McCann	Date/Time: Aug 29/19 1:50	Date/Time: 29-Aug-19 11:35	Date/Time: 29 Aug 19
Date/Time: Aug 29/19 - 9am	Temperature: 20°C	Temperature: 7.2 °C	pH Verified [ ] By: NA

Chain of Custody (Blank) - Rev 0.4 Feb 2016

on Hold held at Niagara depot

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Paracel ID: 1935485

Chain of Custody (Lab Use Only) № 48399

Page 2 of 6

Client Name: Wood E&I Solutions	Project Reference: SCT96351		
Contact Name: Tracy Wolowidnek	Quote # 19-010		
Address: 3300 Merrittville Hwy, Unit 5 Thorold, ON L2V 4Y6	PO #		
Telephone: 905-687-6616	Email Address: tracy.wolowidnek@woodplc.com		

Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular

Date Required:

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 1935485

Required Analyses

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Date	Time	BTEX	VOC	PHC(F1-F4)	pH
1	BH3-2-C	S		1	Aug 28/19	11:15				
2	BH4-1-D	S		2	↓	11:40				
3	BH4-1-C	S		1		11:40				
4	BH4-2-D	S		2		11:45				
5	BH4-2-C	S		1		11:45				
6	BH5-1-D	S		2		12:45				
7	BH5-1-C	S		1		12:45				X
8	BH5-2-D	S		2		12:50				
9	BH5-2-C	S		1		12:50				
10	BH6-1-D	S		2	↓	11:55		X	X	

Comments: please see Page #1

Method of Delivery: P/U

Relinquished By (Sign): [signature]	Received by Driver/Depot: B. Baten (Wingar)	Received at Lab: [signature]	Verified By: B.Homeniec
Relinquished By (Print): Cameron McCann	Date/Time: Aug 29/19 1:50pm	Date/Time: 8-30-19 11:[illegible]	Date/Time: 29 Aug 19
Date/Time: Aug 29/19 - 9am	Temperature: 17 °C	Temperature: 7.2 °C	pH Verified [ ] By: NB

Chain of Custody (Blank) - Rev 0.4 Feb 2016

Paracel ID: 1935485

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Chain of Custody (Lab Use Only)

№ 48400

Page 3 of 6

Client Name: Wood E&I Solutions	Project Reference: SCT196351		**Turnaround Time:**
Contact Name: Tracy Wolowidnek	Quote # 19-012		☐ 1 Day ☐ 3 Day
Address: 3300 Merrittville Hwy, Unit 5 Thorold, ON L2V 4Y6	PO #		☐ 2 Day ☒ Regular
Telephone: 905-687-6616	Email Address: tracy.wolowidnek@woodplc.com		Date Required:

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ____ ☐ Other: ____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 1935485

#	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Date	Time	BTEX	VOC	PHC (F1-F4)
1	BH6-2-D	S		2	Aug 28/19	12:20			
2	BH6-2-C	S		1	↓	12:20			
3	BH6-3-D	S		2		12:25			
4	BH6-4-C	S		1		12:30			
5	BH/MW7-1-D	S		2		12:00			
6	BH/MW7-1-C	S		1		12:00			
7	BH/MW7-2-D	S		2		12:05		X	X
8	BH/MW7-3-C	S		1		12:15			
9	BH/MW7-4-C	S		1		12:20			
10	BH/MW8-1-D	S		2	↓	13:00			

Comments: please see Page #1

Method of Delivery: P/U.

Relinquished By (Sign): [signature]	Received by Driver/Depot: D. Bati (Nguyen)	Received at Lab: [signature]	Verified By: BHomenivel
Relinquished By (Print): Cameron McCann	Date/Time: Aug 29/19 F:50	Date/Time: 3/3-19 11:45	Date/Time: 29 Aug 19
Date/Time: Aug 29/19 - 9am	Temperature: 17 °C	Temperature: 7.2 °C	pH Verified [ ] By: NA

Chain of Custody (Blank) - Rev 0.4 Feb 2016

missing BH6-2-C - emailed Client.

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Paracel ID: 1935485

Chain of Custody (Lab Use Only)

Nº 48401

Page 4 of 6

Client Name:	Wood E&I Solutions
Contact Name:	Tracy Wolowidnek
Address:	3300 Merrittville Hwy, Unit 5 Thorold, ON L2V 4Y6
Telephone:	905-687-6616
Project Reference:	SCT196351
Quote #	19-010
PO #	
Email Address:	tracy.wolowidnek@woodplc.com

Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular

Date Required:

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 1935485

Required Analyses

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	BTEX	VOC	PHC (F1-F4)
1	BH/MW8-1-C	S		1	Aug 28/19	13:00			
2	BH/MW8-2-D	S		2		13:05			
3	BH/MW8-2-C	S		1		13:05			
4	BH/MW8-3-C	S		1		13:10			
5	BH/MW8-4-C	S		1		13:15			
6	BH/MW9-1-D	S		2		12:30		X	X
7	BH/MW9-2-D	S		2		12:35			
8	BH/MW9-3-C	S		1		12:40			
9	BH/MW9-4-C	S		1		12:45			
10	BH10-1-D	S		2		12:50		X	X

Comments: please see Page #1

Method of Delivery: P/U.

Relinquished By (Sign): [signature]	Received by Driver/Depot: B. Baxter (Nguyen)	Received at Lab: [signature]	Verified By: BHcmeniel
Relinquished By (Print): Cameron McCann	Date/Time: Aug 29/19 1:50pm	Date/Time: 8-30-19	Date/Time: 29 Aug 19
Date/Time: Aug 29/19 – 9am	Temperature: 19.2 °C	Temperature: 7.2 °C	pH Verified [ ] By: NA

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Paracel ID: 1935485

Chain of Custody (Lab Use Only) № 48402

Page 5 of 6

Client Name: Wood E&I Solutions	Project Reference: SCT196351
Contact Name: Tracy Wolowidnek	Quote # 19-010
Address: 3300 Merrittville Hwy, Unit 5 Thorold, ON L2V 4Y6	PO #
Telephone: 905-687-6616	Email Address: tracy.wolowidnek@woodplc.com

Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular Date Required: ______

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ______ ☐ Other: ______

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 1935485

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Date	Time	BTEX	VOC	PHC (F1-F4)	PH
1	BH10-2-D	S		2	Aug 28/19	12:55				
2	BH10-2-C	S		1	↓	12:55				
3	BH10-3-C	S		1		13:25				
4	BH10-4-C	S		1		13:25				
5	Dup AA	S		1						X
6	Dup AB	S		2						
7	Dup AC	S		1						
8	Dup AD	S		2						
9	Dup AE	S		2				X	X	
10	Dup AF	S		1	↓					

Comments: please see Page #1

Method of Delivery: P/U

Relinquished By (Sign): [signature]	Received by Driver/Depot: B. Butler (Wiznyow)	Received at Lab: [signature]	Verified By: BHomenuk
Relinquished By (Print): Cameron McCann	Date/Time: Aug 30/19 1:50pm	Date/Time: 8-30/19 11:49	Date/Time: 29 Aug 19
Date/Time: Aug 29/19 - 9am	Temperature: 4.0 °C	Temperature: 7.2 °C	pH Verified [ ] By: NA

Chain of Custody (Blank) - Rev 0.4 Feb 2016

missing BH10-3-C & BH10-4-C - emailed Client

PARACEL LABORATORIES LTD. | TRUSTED. RESPONSIVE. RELIABLE.

Paracel ID: 1935485

Chain of Custody (Lab Use Only) № 48403

Page 6 of 6

Client Name: Wood E&I Solutions	Project Reference: SCT196357	**Turnaround Time:**	
Contact Name: [redacted] Tracy Wolowidnek	Quote # 19-010	☐ 1 Day	☐ 3 Day
Address: 3300 Merrittville Hwy, Unit 5 Thorold ON L2V 4Y6	PO #	☐ 2 Day	☒ Regular
Telephone: 905-687-6616	Email Address: tracy.wolowidnek@woodplc.com	Date Required:	

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ____ ☐ Other: ____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 1935485

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	Required Analyses										
1	Dup AG	S		2	Aug 28/19												
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Comments: please see Page #1

Method of Delivery: P/U

Relinquished By (Sign): C. McC	Received By Driver/Depot: B. Dan (Wagner)	Received at Lab: [signature]	Verified By: BHomeniel
Relinquished By (Print): Cameron McCann	Date/Time: Aug 29/19 1:50pm	Date/Time: 29/19 11:48	Date/Time: 29 Aug 19
Date/Time: Aug 29/19 - 9am	Temperature: 16 °C	Temperature: 7.2 °C	pH Verified [ ] By: NA

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Certificate of Analysis

Wood Environment & Infrastructure (Thorold)

3300 Merrittville Hwy, Unit 5
Thorold, ON L2V 4Y6
Attn: Kelly Patterson

Client PO:
Project: SCT196351 - 8970 Stanley Ave.
Custody: 48447/484

Report Date: 25-Sep-2019
Order Date: 19-Sep-2019

Order #: 1938474

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1938474-01	SS1
1938474-14	Dup BB

Approved By:

Dale Robertson, BSc
Laboratory Director

Certificate of Analysis
Client: Wood Environment & Infrastructure (Thorold)
Client PO:

Report Date: 25-Sep-2019
Order Date: 19-Sep-2019
Project Description: SCT196351 - 8970 Stanley Ave.

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PCBs, total	SW846 8082A - GC-ECD	23-Sep-19	23-Sep-19
Solids, %	Gravimetric, calculation	23-Sep-19	23-Sep-19

Certificate of Analysis

Report Date: 25-Sep-2019

Client: Wood Environment & Infrastructure (Thorold)

Order Date: 19-Sep-2019

Client PO:

Project Description: SCT196351 - 8970 Stanley Ave.

	Client ID:	SS1	Dup BB	-	-
	Sample Date:	18-Sep-19 14:05	18-Sep-19 00:00	-	-
	Sample ID:	1938474-01	1938474-14	-	-
	MDL/Units	Soil	Soil	-	-
Physical Characteristics					
% Solids	0.1 % by Wt.	84.3	82.5	-	-
PCBs					
PCBs, total	0.05 ug/g dry	<0.05	<0.05	-	-
Decachlorobiphenyl	Surrogate	101%	107%	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	ND	0.05	ug/g						
Surrogate: Decachlorobiphenyl	*0.103*		*ug/g*		*103*	*60-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	ND	0.05	ug/g dry	ND			0.0	40	
Surrogate: Decachlorobiphenyl	*0.110*		*ug/g dry*		*92.4*	*60-140*			
Physical Characteristics									
% Solids	79.4	0.1	% by Wt.	82.5			3.8	25	

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	0.529	0.05	ug/g	ND	111	60-140			
Surrogate: Decachlorobiphenyl	*0.127*		*ug/g*		*107*	*60-140*			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

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Paracel ID: 1938474

Chain of Custody (Lab Use Only)
№ 48447

Page 1 of 2

Client Name: Wood E&I Solutions	Project Reference: SCT96351 - 8970 Stanley Ave
Contact Name: Kelly Patterson	Quote # 19-010
Address: 3300 Merritville Hwy, Unit 5, Thorold ON L2V4Y6	PO #
Telephone: 905-687-6616	Email Address: kelly.patterson@woodplc.com

Turnaround Time:
☐ 1 Day ☐ 3 Day
☐ 2 Day ☒ Regular
Date Required: _____

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 1938474

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	Required Analyses: OC Pesticides	PCBs
1	SS1	S		1	Sept 18/19	14:05	X	X
2	SS2	S		1		14:20	X	
3	SS3	S		1		14:35	X	
4	SS4	S		1		14:40	X	
5	SS5	S		1		14:50	X	
6	SS6	S		1		15:00	X	
7	SS7	S		1		15:10	X	
8	SS8	S		1		15:20	X	
9	SS9	S		1		15:30	X	
10	SS10	S		1		15:40	X	

Comments:
- governed by the TIC of SWA07-003
- hold remaining sample for potential future analysis

Method of Delivery: Pup

Relinquished By (Sign): C. McCann	Received by Driver/Depot: B Hamenick	Received at Lab: Bam
Relinquished By (Print): Cameron McCann	Date/Time: 19 Sept 19 BD	Date/Time: 09/20/19 12:03
Date/Time: Sept 19/19 - 9am	Temperature: 9 °C	Temperature: 9.3 °C
	Verified By: B Hamenick	
	Date/Time: 19Sept19	
	pH Verified [ ] By: NA	

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Paracel ID: 1938474

Chain of Custody (Lab Use Only)

№ 48448

Page 2 of 2

Client Name: Wood E&I Solutions	Project Reference: SCT196351- 8970 Stanley Ave
Contact Name: Kelly Patterson	Quote # 19-010
Address: 3300 Merrittville Hwy, Unit 5 Thorold ON L2V4Y6	PO #
Telephone: 905-687-6616	Email Address: kelly.patterson@woodplc.com

Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular

Date Required:

Criteria: ☒ O. Reg. 153/04 (As Amended) Table ___ ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ______ ☐ Other: ______

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 1938474

Required Analyses

#	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	OC Pesticides	PCBs									
1	SS11	S		1	Sept 18/19	15:58	X										
2	SS12	S		1	↓	16:00	X										
3	SS13	S		1	↓	16:10	X										
4	Dup BB	S		1	↓			X									
5	Dup BC	S		1	↓		X										
6	Dup BD	S		1			X										
7																	
8																	
9																	
10																	

Comments: please see Page #1

Method of Delivery: PCD

Relinquished By (Sign): [signature]	Received by Driver/Depot: Niagara BHmenhill	Received at Lab: Dam	Verified By: BHomenlea
Relinquished By (Print): Cameron McCann	Date/Time: 19 Sep 19 1300	Date/Time: 09/20/19 12:03	Date/Time: 19 Sept 19
Date/Time: Sept 19/19 - 9am	Temperature: 9 °C	Temperature: 9.3 °C	pH Verified [ ] By: NA

Chain of Custody (Blank) - Rev 0.4 Feb 2016

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Subcontracted Analysis

Wood Environment & Infrastructure (Thorold)
3300 Merrittville Hwy, Unit 5
Thorold, ON L2V 4Y6
Attn: Kelly Patterson

Tel: (905) 687-6616
Fax: (905)-687-6620

Paracel Report No. **1938474**
Client Project(s): **SCT196351 - 8970 Stanley Ave.**
Client PO:
Reference: **#19-010 Wood Thorold Standing Offer 2019**
CoC Number: **48447/484**

Order Date: 19-Sep-19
Report Date: 25-Sep-19

Sample(s) from this project were subcontracted for the listed parameters. A copy of the subcontractor's report is attached

Paracel ID	Client ID	Analysis
1938474-02	SS2	Pesticides - Organochlorine in soil
1938474-03	SS3	Pesticides - Organochlorine in soil
1938474-04	SS4	Pesticides - Organochlorine in soil
1938474-05	SS5	Pesticides - Organochlorine in soil
1938474-06	SS6	Pesticides - Organochlorine in soil
1938474-07	SS7	Pesticides - Organochlorine in soil
1938474-08	SS8	Pesticides - Organochlorine in soil
1938474-09	SS9	Pesticides - Organochlorine in soil
1938474-10	SS10	Pesticides - Organochlorine in soil
1938474-11	SS11	Pesticides - Organochlorine in soil
1938474-12	SS12	Pesticides - Organochlorine in soil
1938474-13	SS13	Pesticides - Organochlorine in soil
1938474-15	Dup BC	Pesticides - Organochlorine in soil
1938474-16	Dup BD	Pesticides - Organochlorine in soil

TESTMARK Laboratories Ltd.
Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Client:	Dale Robertson	Work Order Number:	383362
Company:	Paracel Laboratories Ltd.- Ottawa	PO #:	
Address:	300-2319 St. Laurent Blvd.	Regulation:	O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/Commer/Comm
	Ottawa, ON, K1G 4J8	Project #:	1938474
Phone/Fax:	(613) 731-9577 / (613) 731-9064	DWS #:	
Email:	drobertson@paracellabs.com	Sampled By:	
Date Order Received:	9/20/2019	Analysis Started:	9/24/2019
Arrival Temperature:	13 °C	Analysis Completed:	9/25/2019

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
SS2	1478428	Soil	None		9/18/2019	2:20 PM
SS3	1478429	Soil	None		9/18/2019	2:35 PM
SS4	1478430	Soil	None		9/18/2019	2:40 PM
SS5	1478431	Soil	None		9/18/2019	2:50 PM
SS6	1478432	Soil	None		9/18/2019	3:00 PM
SS7	1478433	Soil	None	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/18/2019	3:10 PM
SS8	1478434	Soil	None		9/18/2019	3:20 PM
SS9	1478435	Soil	None		9/18/2019	3:30 PM
SS10	1478436	Soil	None		9/18/2019	3:40 PM
SS11	1478437	Soil	None		9/18/2019	3:50 PM
SS12	1478438	Soil	None		9/18/2019	4:00 PM
SS13	1478439	Soil	None	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/18/2019	4:10 PM
DUP BC	1478440	Soil	None		9/18/2019	12:00 AM
DUP BD	1478441	Soil	None		9/18/2019	12:00 AM

METHODS AND INSTRUMENTATION

7 Margaret Street, Garson, ON, P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124 Web: www.testmark.ca

CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd.- Ottawa

Work Order Number: 383362

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Moisture (A99)	Garson	Determination of Percent Moisture	In House
OCPs Soil (A19)	Garson	Determination of Organochlorine Pesticides in Soil by GC/ECD	Modified from SW846-8081B

This report has been approved by:

Brad Halvorson, B.Sc.
Laboratory Director

7 Margaret Street, Garson, ON, P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124 Web: www.testmark.ca

CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd.- Ottawa

Work Order Number: 383362

WORK ORDER RESULTS

Sample Description	SS2		SS3		SS4		SS5			
Sample Date	9/18/2019 2:20 PM		9/18/2019 2:35 PM		9/18/2019 2:40 PM		9/18/2019 2:50 PM			
Lab ID	1478428		1478429		1478430		1478431			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
% Moisture	22.1	0.1	17.9	0.1	13.0	0.1	17.1	0.1	%	~

Sample Description	SS6		SS7		SS8		SS9			
Sample Date	9/18/2019 3:00 PM		9/18/2019 3:10 PM		9/18/2019 3:20 PM		9/18/2019 3:30 PM			
Lab ID	1478432		1478433		1478434		1478435			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
% Moisture	20.4	0.1	15.4	0.1	16.6	0.1	24.6	0.1	%	~

Sample Description	SS10		SS11		SS12		SS13			
Sample Date	9/18/2019 3:40 PM		9/18/2019 3:50 PM		9/18/2019 4:00 PM		9/18/2019 4:10 PM			
Lab ID	1478436		1478437		1478438		1478439			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
% Moisture	24.6	0.1	31.4	0.1	24.7	0.1	8.1	0.1	%	~

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Phone: (705) 693-1121 Fax: (705) 693-1124 Web: www.testmark.ca

CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd.- Ottawa

Work Order Number: 383362

Sample Description	DUP BC		DUP BD			
Sample Date	9/18/2019 12:00 AM		9/18/2019 12:00 AM			
Lab ID	1478440		1478441			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
% Moisture	17.1	0.1	20.7	0.1	%	~

Sample Description	SS2		SS3		SS4		SS5			
Sample Date	9/18/2019 2:20 PM		9/18/2019 2:35 PM		9/18/2019 2:40 PM		9/18/2019 2:50 PM			
Lab ID	1478428		1478429		1478430		1478431			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
2,4'-DDD	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
2,4'-DDE	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
2,4'-DDT	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
4,4'-DDD	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
4,4'-DDE	<0.009	0.009	<0.009	0.009	0.008	0.007	<0.008	0.008	µg/g	~
4,4'-DDT	0.076	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
Aldrin	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	0.05
DDD (Total) (Calc.)	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	0.05
DDE (Total) (Calc.)	<0.009	0.009	<0.009	0.009	0.008	0.007	<0.008	0.008	µg/g	0.05
DDT (Total) (Calc.)	0.076	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	1.4
Decachlorobiphenyl (Surr.)	59.2	N/A	60.4	N/A	60.9	N/A	62.4	N/A	% Rec	~
Dieldrin	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	0.05
Endosulfan I	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
Endosulfan I + II (Calc.)	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	0.04

7 Margaret Street, Garson, ON, P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124 Web: www.testmark.ca

CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd.- Ottawa

Work Order Number: 383362

Sample Description	SS2		SS3		SS4		SS5			
Sample Date	9/18/2019 2:20 PM		9/18/2019 2:35 PM		9/18/2019 2:40 PM		9/18/2019 2:50 PM			
Lab ID	1478428		1478429		1478430		1478431			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
Endosulfan II	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
Endosulfan sulfate	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
Endrin	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	0.04
Endrin aldehyde	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
Heptachlor	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	0.05
Heptachlor epoxide	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	0.05
Hexachlorobenzene	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	0.01
Hexachlorobutadiene	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	0.01
Hexachloroethane	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	0.01
Methoxychlor	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	0.05
Mirex	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
Oxychlordane	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
ß-BHC	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
α - Chlordane	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
α + γ -Chlordane (Calc.)	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	0.05
α-BHC	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
γ - Chlordane	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~
γ-BHC (Lindane)	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	0.01
δ-BHC	<0.009	0.009	<0.009	0.009	<0.007	0.007	<0.008	0.008	µg/g	~

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Work Order Number: 383362

Sample Description	SS6		SS7		SS8		SS9			
Sample Date	9/18/2019 3:00 PM		9/18/2019 3:10 PM		9/18/2019 3:20 PM		9/18/2019 3:30 PM			
Lab ID	1478432		1478433		1478434		1478435			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
2,4'-DDD	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
2,4'-DDE	<0.007	0.007	0.051	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
2,4'-DDT	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
4,4'-DDD	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
4,4'-DDE	<0.007	0.007	0.011	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
4,4'-DDT	<0.007	0.007	<0.006	0.006	<0.01	0.01	0.029	0.009	µg/g	~
Aldrin	<0.007	0.007	0.010	0.006	<0.01	0.01	<0.009	0.009	µg/g	0.05
DDD (Total) (Calc.)	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	0.05
DDE (Total) (Calc.)	<0.007	0.007	0.062	0.006	<0.01	0.01	<0.009	0.009	µg/g	0.05
DDT (Total) (Calc.)	<0.007	0.007	<0.006	0.006	<0.01	0.01	0.029	0.009	µg/g	1.4
Decachlorobiphenyl (Surr.)	60	N/A	59.1	N/A	60.8	N/A	56.3	N/A	% Rec	~
Dieldrin	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	0.05
Endosulfan I	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
Endosulfan I + II (Calc.)	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	0.04
Endosulfan II	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
Endosulfan sulfate	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
Endrin	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	0.04
Endrin aldehyde	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
Heptachlor	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	0.05
Heptachlor epoxide	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	0.05
Hexachlorobenzene	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	0.01
Hexachlorobutadiene	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	0.01

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Work Order Number: 383362

Sample Description	SS6		SS7		SS8		SS9			
Sample Date	9/18/2019 3:00 PM		9/18/2019 3:10 PM		9/18/2019 3:20 PM		9/18/2019 3:30 PM			
Lab ID	1478432		1478433		1478434		1478435			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
Hexachloroethane	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	0.01
Methoxychlor	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	0.05
Mirex	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
Oxychlordane	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
ß-BHC	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
α - Chlordane	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
α + γ -Chlordane (Calc.)	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	0.05
α-BHC	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
γ - Chlordane	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~
γ-BHC (Lindane)	<0.007	0.007	<0.06	0.06	<0.01	0.01	<0.009	0.009	µg/g	0.01
δ-BHC	<0.007	0.007	<0.006	0.006	<0.01	0.01	<0.009	0.009	µg/g	~

Sample Description	SS10		SS11		SS12		SS13			
Sample Date	9/18/2019 3:40 PM		9/18/2019 3:50 PM		9/18/2019 4:00 PM		9/18/2019 4:10 PM			
Lab ID	1478436		1478437		1478438		1478439			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
2,4'-DDD	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~
2,4'-DDE	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~
2,4'-DDT	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~
4,4'-DDD	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~
4,4'-DDE	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~

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Work Order Number: 383362

Sample Description	SS10		SS11		SS12		SS13			
Sample Date	9/18/2019 3:40 PM		9/18/2019 3:50 PM		9/18/2019 4:00 PM		9/18/2019 4:10 PM			
Lab ID	1478436		1478437		1478438		1478439			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
4,4'-DDT	0.012	0.008	<0.01	0.01	<0.007	0.007	0.014	0.009	µg/g	~
Aldrin	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	0.05
DDD (Total) (Calc.)	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	0.05
DDE (Total) (Calc.)	<0.008	0.008	<0.01	0.01	<0.007	0.007	0.026	0.009	µg/g	0.05
DDT (Total) (Calc.)	0.012	0.008	0.03	0.01	0.072	0.007	0.014	0.009	µg/g	1.4
Decachlorobiphenyl (Surr.)	54.6	N/A	52.5	N/A	55.5	N/A	63.5	N/A	% Rec	~
Dieldrin	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	0.05
Endosulfan I	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~
Endosulfan I + II (Calc.)	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	0.04
Endosulfan II	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~
Endosulfan sulfate	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~
Endrin	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	0.04
Endrin aldehyde	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~
Heptachlor	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	0.05
Heptachlor epoxide	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	0.05
Hexachlorobenzene	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	0.01
Hexachlorobutadiene	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	0.01
Hexachloroethane	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	0.01
Methoxychlor	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	0.05
Mirex	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~
Oxychlordane	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~
ß-BHC	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~

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Sample Description	SS10		SS11		SS12		SS13			
Sample Date	9/18/2019 3:40 PM		9/18/2019 3:50 PM		9/18/2019 4:00 PM		9/18/2019 4:10 PM			
Lab ID	1478436		1478437		1478438		1478439			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
α - Chlordane	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~
α + γ -Chlordane (Calc.)	<0.008	0.008	<0.01	0.01	<0.007	0.007	0.083	0.009	µg/g	0.05
α-BHC	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~
γ - Chlordane	<0.008	0.008	<0.01	0.01	<0.007	0.007	0.083	0.009	µg/g	~
γ-BHC (Lindane)	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	0.01
δ-BHC	<0.008	0.008	<0.01	0.01	<0.007	0.007	<0.009	0.009	µg/g	~

Sample Description	DUP BC		DUP BD			
Sample Date	9/18/2019 12:00 AM		9/18/2019 12:00 AM			
Lab ID	1478440		1478441			
OC Pesticides	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
2,4'-DDD	<0.008	0.008	<0.008	0.008	µg/g	~
2,4'-DDE	<0.008	0.008	<0.008	0.008	µg/g	~
2,4'-DDT	<0.008	0.008	<0.008	0.008	µg/g	~
4,4'-DDD	<0.008	0.008	<0.008	0.008	µg/g	~
4,4'-DDE	<0.008	0.008	<0.008	0.008	µg/g	~
4,4'-DDT	<0.008	0.008	<0.008	0.008	µg/g	~
Aldrin	<0.008	0.008	<0.008	0.008	µg/g	0.05
DDD (Total) (Calc.)	<0.008	0.008	<0.008	0.008	µg/g	0.05
DDE (Total) (Calc.)	<0.008	0.008	<0.008	0.008	µg/g	0.05
DDT (Total) (Calc.)	<0.008	0.008	<0.008	0.008	µg/g	1.4

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Work Order Number: 383362

Sample Description	DUP BC		DUP BD			
Sample Date	9/18/2019 12:00 AM		9/18/2019 12:00 AM			
Lab ID	1478440		1478441			
OC Pesticides	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
Decachlorobiphenyl (Surr.)	76.8	N/A	73	N/A	% Rec	~
Dieldrin	<0.008	0.008	<0.008	0.008	µg/g	0.05
Endosulfan I	<0.008	0.008	<0.008	0.008	µg/g	~
Endosulfan I + II (Calc.)	<0.008	0.008	<0.008	0.008	µg/g	0.04
Endosulfan II	<0.008	0.008	<0.008	0.008	µg/g	~
Endosulfan sulfate	<0.008	0.008	<0.008	0.008	µg/g	~
Endrin	<0.008	0.008	<0.008	0.008	µg/g	0.04
Endrin aldehyde	<0.008	0.008	<0.008	0.008	µg/g	~
Heptachlor	<0.008	0.008	<0.008	0.008	µg/g	0.05
Heptachlor epoxide	<0.008	0.008	<0.008	0.008	µg/g	0.05
Hexachlorobenzene	<0.008	0.008	<0.008	0.008	µg/g	0.01
Hexachlorobutadiene	<0.008	0.008	<0.008	0.008	µg/g	0.01
Hexachloroethane	<0.008	0.008	<0.008	0.008	µg/g	0.01
Methoxychlor	<0.008	0.008	<0.008	0.008	µg/g	0.05
Mirex	<0.008	0.008	<0.008	0.008	µg/g	~
Oxychlordane	<0.008	0.008	<0.008	0.008	µg/g	~
ß-BHC	<0.008	0.008	<0.008	0.008	µg/g	~
α - Chlordane	<0.008	0.008	<0.008	0.008	µg/g	~
α + γ -Chlordane (Calc.)	<0.008	0.008	<0.008	0.008	µg/g	0.05
α-BHC	<0.008	0.008	<0.008	0.008	µg/g	~
γ - Chlordane	<0.008	0.008	<0.008	0.008	µg/g	~
γ-BHC (Lindane)	<0.008	0.008	<0.008	0.008	µg/g	0.01

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Paracel Laboratories Ltd.- Ottawa

Work Order Number: 383362

Sample Description	DUP BC		DUP BD			
Sample Date	9/18/2019 12:00 AM		9/18/2019 12:00 AM			
Lab ID	1478440		1478441			
OC Pesticides	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Res/Park/Inst/Ind/ Commer/Comm
δ-BHC	<0.008	0.008	<0.008	0.008	µg/g	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Benzo(b)fluoranthene: Results for benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result.

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Certificate of Analysis

Wood Environment & Infrastructure (Thorold)

3300 Merrittville Hwy, Unit 5
Thorold, ON L2V 4Y6
Attn: Kelly Patterson

Client PO:
Project: SCT196351/2000
Custody: 48442/443

Report Date: 24-Sep-2019
Order Date: 18-Sep-2019

Order #: 1938515

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1938515-01	TP1-2
1938515-02	TP2-1
1938515-03	TP2-5
1938515-04	TP3-1
1938515-05	TP4-1
1938515-06	Dup AA

Approved By:

Dale Robertson, BSc
Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	23-Sep-19	24-Sep-19
Conductivity	MOE E3138 - probe @25 °C, water ext	24-Sep-19	24-Sep-19
Metals, ICP-MS	EPA 6020 - Digestion - ICP-MS	24-Sep-19	24-Sep-19
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	23-Sep-19	24-Sep-19
PHC F1	CWS Tier 1 - P&T GC-FID	23-Sep-19	24-Sep-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	23-Sep-19	24-Sep-19
SAR	Calculated	24-Sep-19	24-Sep-19
Solids, %	Gravimetric, calculation	23-Sep-19	23-Sep-19

Certificate of Analysis

Client: Wood Environment & Infrastructure (Thorold)

Client PO:

Report Date: 24-Sep-2019

Order Date: 18-Sep-2019

Project Description: SCT196351/2000

	Client ID:	TP1-2	TP2-1	TP2-5	TP3-1
	Sample Date:	17-Sep-19 08:45	17-Sep-19 09:15	17-Sep-19 09:35	17-Sep-19 10:00
	Sample ID:	1938515-01	1938515-02	1938515-03	1938515-04
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	87.7	88.5	88.8	86.2
General Inorganics					
SAR	0.01 N/A	1.39	-	-	-
Conductivity	5 uS/cm	294	-	-	-
pH	0.05 pH Units	7.41	-	7.41	-
Metals					
Antimony	1 ug/g dry	<1	<1	-	-
Arsenic	1 ug/g dry	3	4	-	-
Barium	1 ug/g dry	59	85	-	-
Beryllium	0.5 ug/g dry	<0.5	0.7	-	-
Boron	5.0 ug/g dry	8.4	8.8	-	-
Cadmium	0.5 ug/g dry	<0.5	<0.5	-	-
Chromium	5 ug/g dry	14	21	-	-
Cobalt	1 ug/g dry	6	9	-	-
Copper	5 ug/g dry	14	16	-	-
Lead	1 ug/g dry	6	8	-	-
Molybdenum	1 ug/g dry	<1	<1	-	-
Nickel	5 ug/g dry	13	20	-	-
Selenium	1 ug/g dry	<1	<1	-	-
Silver	0.3 ug/g dry	<0.3	<0.3	-	-
Thallium	1 ug/g dry	<1	<1	-	-
Uranium	1 ug/g dry	<1	<1	-	-
Vanadium	10 ug/g dry	22	31	-	-
Zinc	20 ug/g dry	31	40	-	-
Volatiles					
Benzene	0.02 ug/g dry	-	<0.02	-	<0.02
Ethylbenzene	0.05 ug/g dry	-	<0.05	-	<0.05
Toluene	0.05 ug/g dry	-	<0.05	-	<0.05
m,p-Xylenes	0.05 ug/g dry	-	<0.05	-	<0.05
o-Xylene	0.05 ug/g dry	-	<0.05	-	<0.05
Xylenes, total	0.05 ug/g dry	-	<0.05	-	<0.05
Toluene-d8	Surrogate	-	107%	-	109%
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	-	<7	-	<7
F2 PHCs (C10-C16)	4 ug/g dry	-	<4	-	<4

Certificate of Analysis

Client: Wood Environment & Infrastructure (Thorold)

Client PO:

Report Date: 24-Sep-2019

Order Date: 18-Sep-2019

Project Description: SCT196351/2000

	Client ID:	TP1-2	TP2-1	TP2-5	TP3-1
	Sample Date:	17-Sep-19 08:45	17-Sep-19 09:15	17-Sep-19 09:35	17-Sep-19 10:00
	Sample ID:	1938515-01	1938515-02	1938515-03	1938515-04
	MDL/Units	Soil	Soil	Soil	Soil
F3 PHCs (C16-C34)	8 ug/g dry	-	<8	-	<8
F4 PHCs (C34-C50)	6 ug/g dry	-	<6	-	<6

Certificate of Analysis
Client: Wood Environment & Infrastructure (Thorold)
Client PO:

Report Date: 24-Sep-2019
Order Date: 18-Sep-2019
Project Description: SCT196351/2000

	Client ID:	TP4-1	Dup AA	-	-
	Sample Date:	17-Sep-19 10:25	17-Sep-19 00:00	-	-
	Sample ID:	1938515-05	1938515-06	-	-
	MDL/Units	Soil	Soil	-	-
Physical Characteristics					
% Solids	0.1 % by Wt.	90.0	92.0	-	-
Metals					
Antimony	1 ug/g dry	<1	<1	-	-
Arsenic	1 ug/g dry	2	4	-	-
Barium	1 ug/g dry	22	92	-	-
Beryllium	0.5 ug/g dry	<0.5	0.6	-	-
Boron	5.0 ug/g dry	5.9	8.3	-	-
Cadmium	0.5 ug/g dry	<0.5	<0.5	-	-
Chromium	5 ug/g dry	7	18	-	-
Cobalt	1 ug/g dry	4	10	-	-
Copper	5 ug/g dry	11	16	-	-
Lead	1 ug/g dry	4	8	-	-
Molybdenum	1 ug/g dry	<1	<1	-	-
Nickel	5 ug/g dry	8	19	-	-
Selenium	1 ug/g dry	<1	<1	-	-
Silver	0.3 ug/g dry	<0.3	<0.3	-	-
Thallium	1 ug/g dry	<1	<1	-	-
Uranium	1 ug/g dry	<1	<1	-	-
Vanadium	10 ug/g dry	16	28	-	-
Zinc	20 ug/g dry	<20	40	-	-
Volatiles					
Benzene	0.02 ug/g dry	-	<0.02	-	-
Ethylbenzene	0.05 ug/g dry	-	<0.05	-	-
Toluene	0.05 ug/g dry	-	<0.05	-	-
m,p-Xylenes	0.05 ug/g dry	-	<0.05	-	-
o-Xylene	0.05 ug/g dry	-	<0.05	-	-
Xylenes, total	0.05 ug/g dry	-	<0.05	-	-
Toluene-d8	Surrogate	-	105%	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	-	<7	-	-
F2 PHCs (C10-C16)	4 ug/g dry	-	<4	-	-
F3 PHCs (C16-C34)	8 ug/g dry	-	<8	-	-
F4 PHCs (C34-C50)	6 ug/g dry	-	<6	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Conductivity	ND	5	uS/cm						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Metals									
Antimony	ND	1	ug/g						
Arsenic	ND	1	ug/g						
Barium	ND	1	ug/g						
Beryllium	ND	0.5	ug/g						
Boron	ND	5.0	ug/g						
Cadmium	ND	0.5	ug/g						
Chromium	ND	5	ug/g						
Cobalt	ND	1	ug/g						
Copper	ND	5	ug/g						
Lead	ND	1	ug/g						
Molybdenum	ND	1	ug/g						
Nickel	ND	5	ug/g						
Selenium	ND	1	ug/g						
Silver	ND	0.3	ug/g						
Thallium	ND	1	ug/g						
Uranium	ND	1	ug/g						
Vanadium	ND	10	ug/g						
Zinc	ND	20	ug/g						
Volatiles									
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	*2.58*		*ug/g*		*80.5*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	1.53	0.01	N/A	1.39			9.6	200	
Conductivity	293	5	uS/cm	294			0.3	5	
pH	7.40	0.05	pH Units	7.39			0.1	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND				40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND				30	
F3 PHCs (C16-C34)	ND	8	ug/g dry	ND				30	
F4 PHCs (C34-C50)	ND	6	ug/g dry	ND				30	
Metals									
Antimony	ND	1	ug/g dry	ND			0.0	30	
Arsenic	2.2	1	ug/g dry	2.1			6.5	30	
Barium	30.4	1	ug/g dry	28.4			6.9	30	
Beryllium	ND	0.5	ug/g dry	ND			0.0	30	
Boron	6.7	5.0	ug/g dry	6.2			9.0	30	
Cadmium	ND	0.5	ug/g dry	ND			0.0	30	
Chromium	8.2	5	ug/g dry	7.7			6.3	30	
Cobalt	2.9	1	ug/g dry	2.8			4.2	30	
Copper	12.6	5	ug/g dry	15.5			20.5	30	
Lead	7.5	1	ug/g dry	8.1			7.5	30	
Molybdenum	ND	1	ug/g dry	ND			0.0	30	
Nickel	6.2	5	ug/g dry	6.0			4.1	30	
Selenium	ND	1	ug/g dry	ND			0.0	30	
Silver	ND	0.3	ug/g dry	ND			0.0	30	
Thallium	ND	1	ug/g dry	ND			0.0	30	
Uranium	ND	1	ug/g dry	ND			0.0	30	
Vanadium	14.2	10	ug/g dry	13.3			7.0	30	
Zinc	30.3	20	ug/g dry	25.9			15.6	30	
Physical Characteristics									
% Solids	79.4	0.1	% by Wt.	82.5			3.8	25	
Volatiles									
Benzene	ND	0.02	ug/g dry	ND				50	
Ethylbenzene	ND	0.05	ug/g dry	ND				50	
Toluene	ND	0.05	ug/g dry	ND				50	
m,p-Xylenes	ND	0.05	ug/g dry	ND				50	
o-Xylene	ND	0.05	ug/g dry	ND				50	
Surrogate: Toluene-d8	*3.80*		*ug/g dry*		*106*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	191	7	ug/g		95.5	80-120			
F2 PHCs (C10-C16)	90	4	ug/g	ND	101	60-140			
F3 PHCs (C16-C34)	241	8	ug/g	ND	110	60-140			
F4 PHCs (C34-C50)	126	6	ug/g	ND	91.1	60-140			
Metals									
Antimony	42.3		ug/L	ND	84.5	70-130			
Arsenic	48.2		ug/L	ND	94.8	70-130			
Barium	56.9		ug/L	11.4	91.2	70-130			
Beryllium	46.0		ug/L	ND	91.7	70-130			
Boron	44.5		ug/L	ND	84.0	70-130			
Cadmium	46.9		ug/L	ND	93.7	70-130			
Chromium	52.2		ug/L	ND	98.3	70-130			
Cobalt	46.3		ug/L	1.1	90.3	70-130			
Copper	49.9		ug/L	6.2	87.4	70-130			
Lead	47.8		ug/L	3.2	89.1	70-130			
Molybdenum	45.1		ug/L	ND	90.0	70-130			
Nickel	49.3		ug/L	ND	93.8	70-130			
Selenium	47.5		ug/L	ND	94.9	70-130			
Silver	39.7		ug/L	ND	79.4	70-130			
Thallium	42.5		ug/L	ND	84.9	70-130			
Uranium	47.1		ug/L	ND	94.0	70-130			
Vanadium	54.0		ug/L	ND	97.3	70-130			
Zinc	57.4		ug/L	ND	94.1	70-130			
Volatiles									
Benzene	3.48	0.02	ug/g		87.1	60-130			
Ethylbenzene	4.48	0.05	ug/g		112	60-130			
Toluene	4.67	0.05	ug/g		117	60-130			
m,p-Xylenes	8.74	0.05	ug/g		109	60-130			
o-Xylene	4.37	0.05	ug/g		109	60-130			
Surrogate: Toluene-d8	*2.51*		*ug/g*		*78.4*	*50-140*			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

Paracel ID: 1938515

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Chain of Custody (Lab Use Only)

№ 48442

Page 1 of 2

Client Name: Wood E&I Solutions

Contact Name: Kelly Patterson

Address: 3300 Merrittville Hwy, Unit 5 Thorold, ON L2V 4Y6

Telephone: 905-687-6616

Project Reference: SCT196351/2000 - 8970 Stanley

Quote # 19-010

PO #

Email Address: kelly.patterson@woodplc.com

Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular

Date Required:

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 ☒ RSC Filing ☐ O. Reg 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 1938515

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	ICP/MS Metals	EC	SAR	BTEX	PHC (F1-F4)	pH					
1	TP1-1	S		2	Sept 17/19	8:40											
2	TP1-2	S		2		8:45	X	X	X	X	X	X					
3	TP1-3	S		1		8:50											
4	TP1-4	S		2		8:55											
5	TP2-1	S		2		9:15	X										
6	TP2-2	S		1		9:20											
7	TP2-3	S		1		9:25											
8	TP2-4	S		1		9:30											
9	TP2-5	S		2		9:35						X					
10	TP3-1	S		2	↓	9:50											

Comments: governed by the T/C of SNA07-003 Report #1: COCs 48442 and 48443
hold all remaining samples for future analysis

Method of Delivery: P/U

Relinquished By (Sign): C.M.

Relinquished By (Print): Cameron McCann

Date/Time: Sept 18/19 - 12pm

Received by Driver/Depot: B. Barton (Niagara)

Date/Time: Sept 18/19 12:55pm

Temperature: 13.2 °C

Received at Lab: D. [illegible]

Date/Time: 19 Sept 19 1:40

Temperature: 16.4 °C

Verified By: [signature]

Date/Time: 9-19-19 [illegible]

pH Verified [ ] By:

PARACEL LABORATORIES LTD

Paracel ID: 1938515

Head Office
300-2319 St. Laurent Blvd.
Ottawa, Ontario K1G 4J8
t: 1-800-749-1947
e: paracel@paracellabs.com

Chain of Custody
(Lab Use Only)
№ 48443

Page 2 of 2

Client Name: Wood E & I Solutions	Project Reference: SCT96351/2000	**Turnaround Time:**
Contact Name: Kelly Patterson	Quote #: 19-010	☐ 1 Day ☐ 3 Day
Address: 3300 Merritville Hwy, Unit 5, Unit 5, Thorold ON L2V 4Y6	PO #:	☐ 2 Day ☒ Regular
Telephone: 905-687-6616	Email Address: kelly.patterson@woodplc.com	Date Required:

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analyses

	Paracel Order Number: 1938515 / Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	ICP/MS Metals	BTEX	PHC (F1-F4)								
1	TP3-2	S		1	Sept 17/19	9/10:00		X	X								
2	TP3-3	S		2		10:10											
3	TP4-1	S		2		10:25	X										
4	TP4-2	S		1		10:30											
5	TP4-3	S		2		10:40											
6	Dup AA	S		2			X										
7	Dup AB	S		1				X	X								
8	Dup AC	S		2													
9																	
10																	

Comments: please see Page #1

Report #1: COCs 48442 + 48443

Method of Delivery: P/U

Relinquished By (Sign):	Received by Driver/Depot: B. Barton (Niagara)	Received at Lab: D. Gauvin
Relinquished By (Print): Cameron McCann	Date/Time: Sept 18/19 12:55pm	Date/Time: 19 Sept 19 1400
Date/Time: Sept 18/19 - 12pm	Temperature: 12°C	Temperature: 16.4 °C
		Verified By: Date/Time: 9-19-19 1650
		pH Verified [ ] By:

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Certificate of Analysis

Wood Environment & Infrastructure (Thorold)

3300 Merrittville Hwy, Unit 5
Thorold, ON L2V 4Y6
Attn: Kelly Patterson

Client PO:
Project: SCT196351
Custody: 124485

Report Date: 30-Oct-2019
Order Date: 24-Oct-2019

Order #: 1943527

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1943527-01	BH/MW2
1943527-02	BH/MW7
1943527-03	BH/MW8
1943527-04	BH/MW9
1943527-05	Dup WA
1943527-06	Field Blank
1943527-07	Trip Blank
1943527-08	Trip Spike

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: Wood Environment & Infrastructure (Thorold)
Client PO:

Report Date: 30-Oct-2019
Order Date: 24-Oct-2019
Project Description: SCT196351

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 624 - P&T GC-MS	29-Oct-19	29-Oct-19
PHC F1	CWS Tier 1 - P&T GC-FID	29-Oct-19	29-Oct-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	29-Oct-19	30-Oct-19
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	29-Oct-19	29-Oct-19

Certificate of Analysis

Client: Wood Environment & Infrastructure (Thorold)

Client PO:

Report Date: 30-Oct-2019

Order Date: 24-Oct-2019

Project Description: SCT196351

	Client ID:	BH/MW2	BH/MW7	BH/MW8	BH/MW9
	Sample Date:	23-Oct-19 18:11	23-Oct-19 15:10	23-Oct-19 16:07	23-Oct-19 17:10
	Sample ID:	1943527-01	1943527-02	1943527-03	1943527-04
	MDL/Units	Water	Water	Water	Water
Volatiles					
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide (dibromoethan	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5

Certificate of Analysis

Client: Wood Environment & Infrastructure (Thorold)

Client PO:

Report Date: 30-Oct-2019

Order Date: 24-Oct-2019

Project Description: SCT196351

	Client ID:	BH/MW2	BH/MW7	BH/MW8	BH/MW9
	Sample Date:	23-Oct-19 18:11	23-Oct-19 15:10	23-Oct-19 16:07	23-Oct-19 17:10
	Sample ID:	1943527-01	1943527-02	1943527-03	1943527-04
	MDL/Units	Water	Water	Water	Water
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
4-Bromofluorobenzene	Surrogate	116%	116%	115%	114%
Dibromofluoromethane	Surrogate	72.7%	74.2%	75.5%	74.9%
Toluene-d8	Surrogate	101%	99.8%	99.6%	104%
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	<25
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	<100
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	<100
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	<100

Certificate of Analysis

Client: Wood Environment & Infrastructure (Thorold)

Client PO:

Report Date: 30-Oct-2019

Order Date: 24-Oct-2019

Project Description: SCT196351

	Client ID:	Dup WA	Field Blank	Trip Blank	Trip Spike
	Sample Date:	23-Oct-19 00:00	23-Oct-19 00:00	22-Oct-19 00:00	22-Oct-19 00:00
	Sample ID:	1943527-05	1943527-06	1943527-07	1943527-08
	MDL/Units	Water	Water	Water	Water
Volatiles					
Acetone	5.0 ug/L	<5.0	-	-	-
Benzene	0.5 ug/L	<0.5	-	-	-
Bromodichloromethane	0.5 ug/L	<0.5	-	-	-
Bromoform	0.5 ug/L	<0.5	-	-	-
Bromomethane	0.5 ug/L	<0.5	-	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	-	-	-
Chloroform	0.5 ug/L	<0.5	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-
Ethylene dibromide (dibromoethar	0.2 ug/L	<0.2	-	-	-
Hexane	1.0 ug/L	<1.0	-	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	-	-	-
Styrene	0.5 ug/L	<0.5	-	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	-	-
Toluene	0.5 ug/L	<0.5	-	-	-

Certificate of Analysis

Report Date: 30-Oct-2019

Client: Wood Environment & Infrastructure (Thorold)

Order Date: 24-Oct-2019

Client PO:

Project Description: SCT196351

	Client ID:	Dup WA	Field Blank	Trip Blank	Trip Spike
	Sample Date:	23-Oct-19 00:00	23-Oct-19 00:00	22-Oct-19 00:00	22-Oct-19 00:00
	Sample ID:	1943527-05	1943527-06	1943527-07	1943527-08
	MDL/Units	Water	Water	Water	Water
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	-	-
4-Bromofluorobenzene	Surrogate	116%	-	-	-
Dibromofluoromethane	Surrogate	74.8%	-	-	-
Toluene-d8	Surrogate	99.0%	-	-	-
Benzene	0.5 ug/L	-	<0.5	<0.5	35.9 [2]
Ethylbenzene	0.5 ug/L	-	<0.5	<0.5	34.6 [2]
Toluene	0.5 ug/L	-	<0.5	<0.5	38.0 [2]
m,p-Xylenes	0.5 ug/L	-	<0.5	<0.5	77.2 [2]
o-Xylene	0.5 ug/L	-	<0.5	<0.5	36.0 [2]
Xylenes, total	0.5 ug/L	-	<0.5	<0.5	113 [2]
Toluene-d8	Surrogate	-	99.6%	103%	91.4%
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	1720 [1]
F2 PHCs (C10-C16)	100 ug/L	<100	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	*93.2*		*ug/L*		*116*	*50-140*			
Surrogate: Dibromofluoromethane	*60.4*		*ug/L*		*75.5*	*50-140*			
Surrogate: Toluene-d8	*79.8*		*ug/L*		*99.8*	*50-140*			
Benzene	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: Toluene-d8	*79.8*		*ug/L*		*99.8*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND				30	
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	ND	0.5	ug/L	ND				30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	*93.1*		*ug/L*		*116*	*50-140*			
Surrogate: Dibromofluoromethane	*61.8*		*ug/L*		*77.2*	*50-140*			
Surrogate: Toluene-d8	*81.4*		*ug/L*		*102*	*50-140*			
Benzene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: Toluene-d8	*81.4*		*ug/L*		*102*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1930	25	ug/L		96.4	68-117			
F2 PHCs (C10-C16)	1380	100	ug/L		86.0	60-140			
F3 PHCs (C16-C34)	3420	100	ug/L		87.2	60-140			
F4 PHCs (C34-C50)	2570	100	ug/L		103	60-140			
Volatiles									
Acetone	55.4	5.0	ug/L		55.4	50-140			
Benzene	39.8	0.5	ug/L		99.5	60-130			
Bromodichloromethane	29.8	0.5	ug/L		74.6	60-130			
Bromoform	31.9	0.5	ug/L		79.8	60-130			
Bromomethane	37.6	0.5	ug/L		94.0	50-140			
Carbon Tetrachloride	28.7	0.2	ug/L		71.6	60-130			
Chlorobenzene	37.4	0.5	ug/L		93.6	60-130			
Chloroform	31.6	0.5	ug/L		78.9	60-130			
Dibromochloromethane	31.8	0.5	ug/L		79.6	60-130			
Dichlorodifluoromethane	31.7	1.0	ug/L		79.2	50-140			
1,2-Dichlorobenzene	37.4	0.5	ug/L		93.5	60-130			
1,3-Dichlorobenzene	36.8	0.5	ug/L		91.9	60-130			
1,4-Dichlorobenzene	38.5	0.5	ug/L		96.2	60-130			
1,1-Dichloroethane	34.4	0.5	ug/L		86.0	60-130			
1,2-Dichloroethane	27.4	0.5	ug/L		68.5	60-130			
1,1-Dichloroethylene	38.5	0.5	ug/L		96.3	60-130			
cis-1,2-Dichloroethylene	37.2	0.5	ug/L		92.9	60-130			
trans-1,2-Dichloroethylene	39.0	0.5	ug/L		97.4	60-130			
1,2-Dichloropropane	37.9	0.5	ug/L		94.8	60-130			
cis-1,3-Dichloropropylene	33.9	0.5	ug/L		84.7	60-130			
trans-1,3-Dichloropropylene	33.4	0.5	ug/L		83.4	60-130			
Ethylbenzene	37.9	0.5	ug/L		94.8	60-130			
Ethylene dibromide (dibromoethane	35.2	0.2	ug/L		88.0	60-130			
Hexane	44.5	1.0	ug/L		111	60-130			
Methyl Ethyl Ketone (2-Butanone)	82.8	5.0	ug/L		82.8	50-140			
Methyl Isobutyl Ketone	82.6	5.0	ug/L		82.6	50-140			
Methyl tert-butyl ether	73.0	2.0	ug/L		73.0	50-140			
Methylene Chloride	35.8	5.0	ug/L		89.6	60-130			
Styrene	35.4	0.5	ug/L		88.4	60-130			
1,1,1,2-Tetrachloroethane	33.0	0.5	ug/L		82.6	60-130			
1,1,2,2-Tetrachloroethane	46.5	0.5	ug/L		116	60-130			
Tetrachloroethylene	36.6	0.5	ug/L		91.5	60-130			
Toluene	38.6	0.5	ug/L		96.4	60-130			
1,1,1-Trichloroethane	28.7	0.5	ug/L		71.7	60-130			
1,1,2-Trichloroethane	36.4	0.5	ug/L		90.9	60-130			
Trichloroethylene	29.8	0.5	ug/L		74.6	60-130			
Trichlorofluoromethane	27.9	1.0	ug/L		69.8	60-130			
Vinyl chloride	27.4	0.5	ug/L		68.5	50-140			
m,p-Xylenes	85.1	0.5	ug/L		106	60-130			
o-Xylene	35.5	0.5	ug/L		88.8	60-130			
Surrogate: 4-Bromofluorobenzene	*83.6*		*ug/L*		*105*	*50-140*			
Benzene	39.8	0.5	ug/L		99.5	60-130			
Ethylbenzene	37.9	0.5	ug/L		94.8	60-130			
Toluene	38.6	0.5	ug/L		96.4	60-130			
m,p-Xylenes	85.1	0.5	ug/L		106	60-130			
o-Xylene	35.5	0.5	ug/L		88.8	60-130			

Qualifier Notes:

Sample Qualifiers :

1 : PHC F1 Trip Spike Prepared at a concentration of 2000 ug/L.

2 : VOC Trip Spike was fortified using a Standard Reference Material with varying analyte concentrations. Unless otherwise noted, all analytes fell within prescribed control limits. Please see attached document for expected analyte concentrations.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

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Paracel ID: 1943527

Chain Of Custody
(Lab Use Only)
№ 124485

Client Name: Wood	Project Ref: SCT198351	Page 1 of 1
Contact Name: Kelly Patterson	Quote #: 19-010	**Turnaround Time**
Address: 3300 Merritville Hwy, Unit 5 Thorold, ON, L2V 4Y6	PO #:	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Telephone: 905-687-6616	E-mail: Kellypatterson@woodplc.com	Date Required:

Regulation 153/04	Other Regulation
☒ Table 1 ☒ Res/Park ☐ Med/Fine	☐ REG 558 ☐ PWQO
☐ Table 2 ☐ Ind/Comm ☐ Coarse	☐ CCME ☐ MISA
☐ Table 3 ☐ Agri/Other	☐ SU - Sani ☐ SU - Storm
☐ Table	Mun:
For RSC: ☐ Yes ☐ No	☐ Other:

Matrix Type: **S** (Soil/Sed.) **GW** (Ground Water) **SW** (Surface Water) **SS** (Storm/Sanitary Sewer) **P** (Paint) **A** (Air) **O** (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	PHC F1 + BTEX					
1	BH/MW2	GW		3	Oct. 23/19	18:11	X	X											
2	BH/MW7	GW		3		15:10	X	X											
3	BH/MW8			3		16:07	X	X											
4	BH/MW9			3		12:10	X	X											
5	Dup WA			3			X	X											
6	Field Blank			2	Oct 23/19									X					
7	Trip Blank			1	Oct 22/19									X					
8	Trip Spike			1	"									X					
9																			
10																			

Comments: Governed by the T/C of SWA07-603.
Hold all samples for future analysis

Method of Delivery: P/U.

Relinquished By (Sign): Braedan Hural	Received by Driver/Depot: B. Benton (Waterloo)	Received at Lab: Sham	Verified By: BHomeniuk
Relinquished By (Print): Braedan Hural	Date/Time: Oct 24/19 2:00pm	Date/Time: 10/25/19 11:40	Date/Time: 24Oct 19
Date/Time: Oct. 24/19 8:00 am	Temperature: 8.4°C.	Temperature: 8.0 °C	pH Verified: ☐ By: NA.

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Subcontracted Analysis

Wood Environment & Infrastructure (Thorold)
3300 Merrittville Hwy, Unit 5
Thorold, ON L2V 4Y6
Attn: Kelly Patterson

Tel: (905) 687-6616
Fax: (905)-687-6620

Paracel Report No	**1949431**
Client Project(s):	**SCT196351-8970 Stanley Ave.**
Client PO:	
Reference:	**#19-010 Wood Thorold Standing Offer 2019**
CoC Number:	**51207, 51208**

Order Date:	05-Dec-19
Report Date:	2-Jan-20

Sample(s) from this project were subcontracted for the listed parameters. A copy of the subcontractor's report is attached

Paracel ID	Client ID	Analysis
1949431-01	SS7A	Pesticides - Organochlorine in soil
1949431-02	SS7B	Pesticides - Organochlorine in soil
1949431-03	SS13A	Pesticides - Organochlorine in soil
1949431-04	SS13B	Pesticides - Organochlorine in soil
1949431-05	SS301	Pesticides - Organochlorine in soil
1949431-06	SS302	Pesticides - Organochlorine in soil
1949431-07	SS303	Pesticides - Organochlorine in soil
1949431-08	DupCD	Pesticides - Organochlorine in soil
1949431-09	SS201	Pesticides - Organochlorine in soil
1949431-10	SS202	Pesticides - Organochlorine in soil
1949431-11	SS203	Pesticides - Organochlorine in soil
1949431-12	SS204	Pesticides - Organochlorine in soil
1949431-13	SS205	Pesticides - Organochlorine in soil
1949431-14	SS206	Pesticides - Organochlorine in soil
1949431-15	SS207	Pesticides - Organochlorine in soil
1949431-16	SS208	Pesticides - Organochlorine in soil

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CERTIFICATE OF ANALYSIS

Client:	Dale Robertson	Work Order Number:	389799
Company:	Paracel Laboratories Ltd. - Hamilton	PO #:	
Address:	351 Nash Rd. N Unit 9b Hamilton, ON, L8H7P4	Regulation: Project #:	O.Reg 153 Table 1 Soil Stringent Criteria 1949431
Phone:	(905) 631-2077	DWS #:	
Email:	drobertson@paracellabs.com	Sampled By:	
Date Order Received:	12/6/2019	Analysis Started:	12/10/2019
Arrival Temperature:	3 °C	Analysis Completed:	12/13/2019

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
SS7A	1502634	Soil	None	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2019	9:35 AM
SS7B	1502635	Soil	None	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2019	9:45 AM
SS13A	1502636	Soil	None	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2019	10:55 AM
SS13B	1502637	Soil	None	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2019	11:05 AM
SS301	1502638	Soil	None		12/4/2019	12:20 PM
SS302	1502639	Soil	None	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2019	12:35 PM
SS303	1502640	Soil	None		12/4/2019	12:55 PM
DUPCD	1502641	Soil	None		12/4/2019	12:55 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Moisture (A99)	Garson	Determination of Percent Moisture	In-House
OCPs Soil (A19)	Garson	Determination of Organochlorine Pesticides in Soil by GC/ECD	Modified from SW846-8081B

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd. - Hamilton

Work Order Number: 389799

This report has been approved by:

Brad Halvorson, B.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd. - Hamilton

Work Order Number: 389799

WORK ORDER RESULTS

Sample Description	SS7A		SS7B		SS13A		SS13B			
Sample Date	12/4/2019 9:35 AM		12/4/2019 9:45 AM		12/4/2019 10:55 AM		12/4/2019 11:05 AM			
Lab ID	1502634		1502635		1502636		1502637			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
% Moisture	34.9	0.1	40.0	0.1	17.0	0.1	15.6	0.1	%	~

Sample Description	SS301		SS302		SS303		DUPCD			
Sample Date	12/4/2019 12:20 PM		12/4/2019 12:35 PM		12/4/2019 12:55 PM		12/4/2019 12:55 PM			
Lab ID	1502638		1502639		1502640		1502641			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
% Moisture	53.8	0.1	11.9	0.1	30.7	0.1	34.8	0.1	%	~

Sample Description	SS7A		SS7B		SS13A		SS13B			
Sample Date	12/4/2019 9:35 AM		12/4/2019 9:45 AM		12/4/2019 10:55 AM		12/4/2019 11:05 AM			
Lab ID	1502634		1502635		1502636		1502637			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
2,4'-DDD	<0.007	0.007	0.047	0.006	0.007	0.006	<0.007	0.007	µg/g	~
2,4'-DDE	0.008	0.007	0.059	0.006	<0.006	0.006	<0.007	0.007	µg/g	~
2,4'-DDT	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	~
4,4'-DDD	0.012	0.007	0.10	0.06	<0.006	0.006	0.018	0.007	µg/g	~
4,4'-DDE	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	~
4,4'-DDT	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	~
Aldrin	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	0.05

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Paracel Laboratories Ltd. - Hamilton

Work Order Number: 389799

Sample Description	SS7A		SS7B		SS13A		SS13B			
Sample Date	12/4/2019 9:35 AM		12/4/2019 9:45 AM		12/4/2019 10:55 AM		12/4/2019 11:05 AM			
Lab ID	1502634		1502635		1502636		1502637			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
DDD (Total) (Calc.)	0.012	0.007	0.147	0.006	0.007	0.006	0.018	0.007	µg/g	0.05
DDE (Total) (Calc.)	0.008	0.007	0.059	0.006	<0.006	0.006	<0.007	0.007	µg/g	0.05
DDT (Total) (Calc.)	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	0.078
Decachlorobiphenyl (Surr.)	120	N/A	95.6	N/A	101	N/A	110	N/A	% Rec	~
Dieldrin	<0.007	0.007	0.047	0.006	<0.006	0.006	<0.007	0.007	µg/g	0.05
Endosulfan I	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	~
Endosulfan I + II (Calc.)	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	0.04
Endosulfan II	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	~
Endosulfan sulfate	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	~
Endrin	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	0.04
Endrin aldehyde	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	~
Heptachlor	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	0.05
Heptachlor epoxide	<0.007	0.007	<0.006	0.006	0.047	0.006	0.035	0.007	µg/g	0.05
Hexachlorobenzene	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	0.01
Hexachlorobutadiene	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	0.01
Hexachloroethane	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	0.01
Methoxychlor	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	0.05
Mirex	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	~
Oxychlordane	<0.007	0.007	0.023	0.006	0.021	0.006	0.025	0.007	µg/g	~
ß-BHC	<0.007	0.007	<0.006	0.006	0.017	0.006	0.031	0.007	µg/g	~
α - Chlordane	0.63	0.07	4.2	0.6	<0.006	0.006	<0.007	0.007	µg/g	~
α + γ -Chlordane (Calc.)	0.850	0.007	5.700	0.006	0.190	0.006	0.130	0.007	µg/g	0.05
α-BHC	<0.007	0.007	<0.006	0.006	<0.006	0.006	<0.007	0.007	µg/g	~

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Paracel Laboratories Ltd. - Hamilton

Work Order Number: 389799

Sample Description	SS7A		SS7B		SS13A		SS13B			
Sample Date	12/4/2019 9:35 AM		12/4/2019 9:45 AM		12/4/2019 10:55 AM		12/4/2019 11:05 AM			
Lab ID	1502634		1502635		1502636		1502637			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
γ - Chlordane	0.22	0.07	1.5	0.6	0.19	0.06	0.13	0.07	µg/g	~
γ-BHC (Lindane)	<0.007	0.007	<0.006	0.006	<0.006	0.006	0.015	0.007	µg/g	0.01
δ-BHC	<0.007	0.007	0.061	0.006	0.12	0.06	<0.007	0.007	µg/g	~

Sample Description	SS301		SS302		SS303		DUPCD			
Sample Date	12/4/2019 12:20 PM		12/4/2019 12:35 PM		12/4/2019 12:55 PM		12/4/2019 12:55 PM			
Lab ID	1502638		1502639		1502640		1502641			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
2,4'-DDD	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
2,4'-DDE	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
2,4'-DDT	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
4,4'-DDD	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
4,4'-DDE	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
4,4'-DDT	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
Aldrin	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.05
DDD (Total) (Calc.)	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.05
DDE (Total) (Calc.)	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.05
DDT (Total) (Calc.)	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.078
Decachlorobiphenyl (Surr.)	83.2	N/A	115	N/A	125	N/A	101	N/A	% Rec	~
Dieldrin	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.05
Endosulfan I	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
Endosulfan I + II (Calc.)	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.04

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Paracel Laboratories Ltd. - Hamilton

Work Order Number: 389799

Sample Description	SS301		SS302		SS303		DUPCD			
Sample Date	12/4/2019 12:20 PM		12/4/2019 12:35 PM		12/4/2019 12:55 PM		12/4/2019 12:55 PM			
Lab ID	1502638		1502639		1502640		1502641			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
Endosulfan II	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
Endosulfan sulfate	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
Endrin	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.04
Endrin aldehyde	0.034	0.005	<0.007	0.007	<0.007	0.007	0.012	0.005	µg/g	~
Heptachlor	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.05
Heptachlor epoxide	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.05
Hexachlorobenzene	<0.005	0.005	0.011	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.01
Hexachlorobutadiene	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.01
Hexachloroethane	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.01
Methoxychlor	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.05
Mirex	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
Oxychlordane	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
ß-BHC	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
α - Chlordane	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
α + γ -Chlordane (Calc.)	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.05
α-BHC	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
γ - Chlordane	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	~
γ-BHC (Lindane)	<0.005	0.005	<0.007	0.007	<0.007	0.007	<0.005	0.005	µg/g	0.01
δ-BHC	<0.005	0.005	0.11	0.07	<0.007	0.007	<0.005	0.005	µg/g	~

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd. - Hamilton

Work Order Number: 389799

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Benzo(b)fluoranthene: Results for benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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CERTIFICATE OF ANALYSIS

Client:	Dale Robertson	Work Order Number:	390569
Company:	Paracel Laboratories Ltd. - Hamilton	PO #:	
Address:	351 Nash Rd. N Unit 9b Hamilton, ON, L8H7P4	Regulation: Project #:	O.Reg 153 Table 1 Soil Stringent Criteria 1949431
Phone:	(905) 631-2077	DWS #:	
Email:	drobertson@paracellabs.com	Sampled By:	
Date Order Received:	12/18/2019	Analysis Started:	12/24/2019
Arrival Temperature:	6 °C	Analysis Completed:	12/24/2019

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
SS201	1505329	Soil	None	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2019	
SS202	1505330	Soil	None	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2019	
SS203	1505331	Soil	None	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2019	
SS204	1505332	Soil	None		12/4/2019	
SS205	1505333	Soil	None	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2019	
SS206	1505334	Soil	None	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2019	
SS207	1505335	Soil	None		12/4/2019	
SS208	1505336	Soil	None		12/4/2019	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Moisture (A99)	Garson	Determination of Percent Moisture	In-House
OCPs Soil (A19)	Garson	Determination of Organochlorine Pesticides in Soil by GC/ECD	Modified from SW846-8081B

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd. - Hamilton

Work Order Number: 390569

This report has been approved by:

Brad Halvorson, B.Sc.
Laboratory Director

7 Margaret Street, Garson, ON, P3L 1E1
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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd. - Hamilton

Work Order Number: 390569

WORK ORDER RESULTS

Sample Description	SS201		SS202		SS203		SS204			
Sample Date	12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM			
Lab ID	1505329		1505330		1505331		1505332			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
% Moisture	24.4	0.1	22.8	0.1	30.3	0.1	43.7	0.1	%	~

Sample Description	SS205		SS206		SS207		SS208			
Sample Date	12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM			
Lab ID	1505333		1505334		1505335		1505336			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
% Moisture	15.1	0.1	14.4	0.1	52.3	0.1	47.4	0.1	%	~

Sample Description	SS201		SS202		SS203		SS204			
Sample Date	12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM			
Lab ID	1505329		1505330		1505331		1505332			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
2,4'-DDD	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
2,4'-DDE	<0.008	0.008	0.010	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
2,4'-DDT	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
4,4'-DDD	0.018	0.008	0.029	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
4,4'-DDE	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
4,4'-DDT	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
Aldrin	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.05

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Paracel Laboratories Ltd. - Hamilton

Work Order Number: 390569

Sample Description	SS201		SS202		SS203		SS204			
Sample Date	12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM			
Lab ID	1505329		1505330		1505331		1505332			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
DDD (Total) (Calc.)	0.018	0.008	0.029	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.05
DDE (Total) (Calc.)	<0.008	0.008	0.010	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.05
DDT (Total) (Calc.)	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.078
Decachlorobiphenyl (Surr.)	103	N/A	97	N/A	83	N/A	86	N/A	% Rec	~
Dieldrin	<0.008	0.008	0.010	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.05
Endosulfan I	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
Endosulfan I + II (Calc.)	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.04
Endosulfan II	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
Endosulfan sulfate	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
Endrin	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.04
Endrin aldehyde	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
Heptachlor	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.05
Heptachlor epoxide	<0.008	0.008	0.051	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.05
Hexachlorobenzene	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.01
Hexachlorobutadiene	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.01
Hexachloroethane	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.01
Methoxychlor	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.05
Mirex	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
Oxychlordane	0.012	0.008	0.012	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
ß-BHC	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
α - Chlordane	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	~
α + γ -Chlordane (Calc.)	0.230	0.008	0.450	0.008	0.074	0.009	<0.008	0.008	µg/g	0.05
α-BHC	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	~

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd. - Hamilton

Work Order Number: 390569

Sample Description	SS201		SS202		SS203		SS204			
Sample Date	12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM			
Lab ID	1505329		1505330		1505331		1505332			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
γ - Chlordane	0.23	0.08	0.45	0.08	0.074	0.009	<0.008	0.008	µg/g	~
γ-BHC (Lindane)	<0.008	0.008	<0.008	0.008	<0.009	0.009	<0.008	0.008	µg/g	0.01
δ-BHC	0.099	0.008	0.23	0.08	0.052	0.009	<0.008	0.008	µg/g	~

Sample Description	SS205		SS206		SS207		SS208			
Sample Date	12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM			
Lab ID	1505333		1505334		1505335		1505336			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
2,4'-DDD	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
2,4'-DDE	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
2,4'-DDT	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
4,4'-DDD	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
4,4'-DDE	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
4,4'-DDT	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
Aldrin	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.05
DDD (Total) (Calc.)	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.05
DDE (Total) (Calc.)	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.05
DDT (Total) (Calc.)	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.078
Decachlorobiphenyl (Surr.)	97	N/A	101	N/A	84	N/A	93.7	N/A	% Rec	~
Dieldrin	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.05
Endosulfan I	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
Endosulfan I + II (Calc.)	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.04

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd. - Hamilton

Work Order Number: 390569

Sample Description	SS205		SS206		SS207		SS208			
Sample Date	12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM		12/4/2019 12:00 AM			
Lab ID	1505333		1505334		1505335		1505336			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
Endosulfan II	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
Endosulfan sulfate	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
Endrin	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.04
Endrin aldehyde	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
Heptachlor	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.05
Heptachlor epoxide	0.024	0.008	0.029	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.05
Hexachlorobenzene	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.01
Hexachlorobutadiene	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.01
Hexachloroethane	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.01
Methoxychlor	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.05
Mirex	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
Oxychlordane	0.014	0.008	0.013	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
ß-BHC	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
α - Chlordane	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
α + γ -Chlordane (Calc.)	0.053	0.008	0.117	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.05
α-BHC	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
γ - Chlordane	0.053	0.008	0.117	0.008	<0.007	0.007	<0.007	0.007	µg/g	~
γ-BHC (Lindane)	<0.008	0.008	<0.008	0.008	<0.007	0.007	<0.007	0.007	µg/g	0.01
δ-BHC	0.041	0.008	0.045	0.008	0.040	0.007	0.025	0.007	µg/g	~

CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd. - Hamilton

Work Order Number: 390569

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Benzo(b)fluoranthene: Results for benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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APPENDIX D

LIMITATIONS

LIMITATIONS

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:

   (a) The Standard Terms and Conditions which form a part of Wood's proposal and authorization to proceed, dated July 11, 2019, signed by the Client on July 17, 2019;

   (b) The Scope of Services;

   (c) Time and Budgetary limitations as described in our Contract; and,

   (d) The Limitations stated herein.

2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.

3. The conclusions presented in this report were based, in part, on visual observations of the site and attendant structures. Our conclusions cannot and are not extended to include those portions of the site or structures which were not reasonably available, in Wood's opinion, for direct observation.

4. The environmental conditions at the site were assessed, within the limitations set out above, having due regard for applicable environmental regulations as of the date of the inspection. A review of compliance by past owners or occupants of the site with any applicable local, provincial or federal by-laws, orders-in-council, legislative enactments and regulations was not performed.

5. The site history research included obtaining information from third parties and employees or agents of the owner. No attempt has been made to verify the accuracy of any information provided, unless specifically noted in our report.

6. Where testing was performed, it was carried out in accordance with the terms of our contract providing for testing. Other substances, or different quantities of substances testing for, may be present on site and may be revealed by different of other testing not provided for in our contract.

7. Because of the limitations referred to above, different environmental conditions from those stated in our report may exist. Should such different conditions be encountered, Wood must be notified in order that it may determine if modifications to the conclusions in the report are necessary.

8. The utilization of Wood's services during the implementation of any remedial measures will allow Wood to observe compliance with the conclusions and recommendations contained in the report. Wood's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.

9. This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or in part, or any reliance thereon, or decisions made based on any information of conclusions in the report, is the sole responsibility of such third party. Wood accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.

10. This report is not to be given over to any third party for any purpose whatsoever without the written permission of Wood.

11. Provided that the report is still reliable, and less than 12 months old, Wood will issue a third-party reliance letter to parties Client identifies in writing, upon payment of the then current fee for such letters. All third parties relying on Wood's report, by such reliance agree to be bound by our proposal and Wood's standard reliance letter. Wood's standard reliance letter indicates that in no event shall Wood be liable for any damages, howsoever arising, relating to third-party reliance on Wood's report. No reliance by any party is permitted without such agreement.

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
OAKLANDS CAMPGROUND
9015 STANLEY AVENUE
NIAGARA FALLS, ONTARIO

Submitted to:

RICCI LAW PROFESSIONAL CORPORATION
4025 Dorchester Road, Suite 331
Niagara Falls, Ontario
L2E 7K8

Submitted by:

Wood Environment & Infrastructure Solutions,
a Division of Wood Canada Limited
3300 Merrittville Hwy., Unit #5,
Thorold, Ontario
L2V 4Y6

September 29, 2021

SCT196351

Distribution:

- Ricci Law Professional Corporation – 1 electronic copy; and
- Wood - 1 electronic copy.

1.0 EXECUTIVE SUMMARY

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood) was retained by Ricci Law Professional Corporation (the Client) to conduct a Phase Two Environmental Site Assessment (ESA) of the property located at 9015 Stanley Avenue, in the City of Niagara Falls (the City), Ontario (the "Phase Two Property"). The Phase Two Property is occupied by Oaklands Campground, which is no longer in operation. The campground was originally developed in the early 1970s as Paradise Acres Campground and was later purchased by Marineland and operated as King Waldorf Tent and Trailer Park from the 1990s to 2017, when it was subsequently purchased by the current owners.

It is Wood's understanding that a Record of Site Condition (RSC), acknowledged by the Ministry of Environment, Conservation and Parks (MECP), is required as a condition of the planned redevelopment of the Phase Two Property for residential use. The Phase Two ESA is required in support of the RSC.

Wood previously completed a Phase I ESA, the findings of which were documented in the report entitled *"Phase I Environmental Site Assessment, 9015 Stanley Avenue, Niagara Falls, Ontario"* dated February 7, 2019 (2019 Phase I ESA). Wood subsequently upgraded the 2019 Phase I ESA to a Phase One ESA, prepared in accordance with the requirements of *Ontario Regulation 153/04* as amended (*O. Reg. 153/04*). The revised report, entitled *"Phase One Environmental Site Assessment, Oaklands Campground, 9015 Stanley Avenue, Niagara Falls, Ontario"*, was dated August 31, 2021 (2021 Phase One ESA). Potentially contaminating activities (PCAs) were identified at the Phase One Property, including: historic placement of fill material of unknown quality towards the south of the Phase One Property (PCA #30), the presence of two pad-mounted transformers to the south of the bathroom facility (PCA #55); and the presence of two sub-grade electrical transformers in the campsite area (two APECs, PCA #55). These PCAs resulted in areas of potential environmental concern (APECs) on the respective areas of the Phase Two Property. The Phase Two ESA was completed to address these APECs, as required to support the RSC.

This investigation was carried out in accordance with Wood's proposed scope of work for Phase Two ESA as described in our proposal, dated July 11, 2019, signed by the Client on July 17, 2019.

The primary findings of the Phase Two ESA are as follows:

- Wood excavated seven testpits, collected two surface soil samples and completed an elevation survey between September 17 and September 26, 2019. The locations of the testpits and surface soil samples were selected to address the APECs identified during the Phase One ESA (historical fill placement and the presence of electrical transformers).

- The subsurface conditions encountered at the sample locations indicated:
    - Testpits TP101 and TP102 were excavated in the north portion of the Site and encountered a thin layer of topsoil (0.2 m in TP101) or granular fill (0.4 m in TP102) overlying native brown, fissured silty clay to clayey silt, with traces of gravel.
    - Testpits TP103-TP107 were excavated in the southwest portion of the Phase Two Property where fill had been placed. These testpits encountered various fill materials to depths ranging from 0.5 to 1.2 mbgs, overlying native silty clay/clayey silt as noted above. The fill material was variable, and consisted of:
        - brown to reddish brown silty clay to clayey silt to depths between 0.4-0.5 mbgs (TP103, TP104 and TP107);
        - grey gravel fill, over bricks (0.4-0.6 mbgs) overlying silty clay to clayey silt fill to 0.7 mbgs (TP105);
        - silty clay to clayey silt fill to 1.2 mbgs with a layer of sandy gravel from 0.4-0.7 mbgs (TP106).
    - The fill contained some non-soil materials (pieces of brick) at TP104 and TP107. Petroleum or chemical-like odours were not identified in any of the testpits, however, a faint organic odour was noted at a depth of 0.7-1.2 mbgs at TP106.
- The assessment criteria applicable to the Phase Two Property, for the purposes of an RSC filing, are the Table 1 SCS Full Depth Background Site Condition Standards for residential/parkland/ institutional/industrial/commercial/community property use and medium and fine textured soils (the Table 1 SCS).
- Five soil/fill samples were submitted for analysis of metals including hydrides, five soil/fill samples were submitted for EC analysis, two soil/fill samples were submitted for analysis of SAR, one soil/fill samples was submitted for analysis of PHCs/BTEX and four soil/fill samples were submitted for analysis of PCBs. The results of the soil testing indicated all parameters in all samples met the Table 1 SCS with the exception of EC in three samples of soil/fill, collected from the southwestern portion of the Phase Two Property.
- The Phase Two Property is not in compliance with the Table 1 SCS, and therefore, an RSC cannot be filed. Wood has provided the Client with a work plan for the additional investigations and remediation required to attain compliance with the Table 1 SCS such

that an RSC can be filed. This Phase Two ESA would be updated upon completion of remediation.

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2.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood) was retained by Ricci Law Professional Corporation (the Client) to conduct a Phase Two Environmental Site Assessment (ESA) of the property located at 9015 Stanley Avenue, in the City of Niagara Falls (the City), Ontario (the "Phase Two Property"; see **Figure 1**). The Phase Two Property is occupied by Oaklands Campground, which is no longer in operation. The campground was originally developed in the early 1970s as Paradise Acres Campground and was later purchased by Marineland and operated as King Waldorf Tent and Trailer Park from the 1990s to 2017, when it was subsequently purchased by the current owners. **Figure 2** illustrates the lot configuration of the Phase Two Property.

It is Wood's understanding that a Record of Site Condition (RSC), acknowledged by the Ministry of Environment, Conservation and Parks (MECP), is required as a condition of the planned redevelopment of the Phase Two Property for residential use. The Phase Two ESA is required in support of the RSC.

Wood previously completed a Phase I ESA, the findings of which were documented in the report entitled *"Phase I Environmental Site Assessment, 9015 Stanley Avenue, Niagara Falls, Ontario"* dated February 7, 2019 (2019 Phase I ESA). Wood subsequently upgraded the 2019 Phase I ESA to a Phase One ESA, prepared in accordance with the requirements of *Ontario Regulation 153/04* as amended (*O. Reg. 153/04*). The revised report, entitled *"Phase One Environmental Site Assessment, Oaklands Campground, 9015 Stanley Avenue, Niagara Falls, Ontario"*, was dated August 31, 2021 (2021 Phase One ESA).

This work program is required for filing an RSC under *O. Reg. 153/04*, as amended. As such all work completed under this project was performed in general accordance with standard engineering practices and the following documents:

- Ministry of the Environment (MOE) document entitled *"Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04"* dated June 2011;
- Ministry of the Environment and Energy (MOEE) document entitled *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"*, dated December 1996;
- MOE document entitled *"Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act"* issued by the Laboratory Services Branch of the MOE and dated March 9, 2004, amended as of July 1, 2011 (Analytical Protocol); and

- All analytical results were compared to the appropriate Site Condition Standards (SCS) identified in the MECP document entitled; *"Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act"* dated April 15, 2011 (MECP SCS).

This investigation was carried out in accordance with Wood's proposed scope of work for Phase Two ESA as described in our proposal, dated July 11, 2019, signed by the Client on July 17, 2019.

2.1 Site Description

The Phase Two Property is located on the west side of Stanley Avenue, and extends from Lyon's Creek Parkway to the Welland River, in Niagara Falls, Ontario (**Figure 1**). The Phase Two Property lies in a rural area, and is surrounded by undeveloped land on the west side, Welland River to the north, residential use on the south, and commercial use (Oaklands Golf Course) on the east side.

The Phase Two Property is an irregular-shaped property, a total of approximately 25 hectares (ha) (62 acres) in area. The Phase Two Property is occupied by the Oaklands campground. The campground is located in the north portion of address 9015 Stanley Avenue. The campground was originally developed in the early 1970s as Paradise Acres Campground and was later purchased by Marineland and operated as King Waldorf Tent and Trailer Park from the 1990s to 2017, when it was subsequently purchased by the current owners.

Buildings at the campground include an office/gatehouse building, shed (for storage of lawn maintenance equipment, etc.), washroom/shower/laundry facilities building, pool shed, and pump house. The southern portion of the Site is undeveloped, with the exception of the area cleared for the on-Site sewage disposal system, which includes a septic tank and leaching bed, and is located in the southern portion of 9015 Stanley Avenue.

Based on the historical review completed during the Phase I ESA, the Phase Two Property was occupied by agricultural use in the 1930s, with a farmstead present in the south portion of the Site. The farmstead was demolished between 2006 and 2010.

2.2 Property Ownership

The property ownership and Client contact information is as follows:

Client	Ricci Law Professional Corporation on behalf of the owner 2610832 Ontario Inc.	4025 Dorchester Road, Suite 331 Niagara Falls, Ontario L2E 7K8 Contact: Ms. Jennifer Ricci 289-932-1640 riccilaw2008@gmail.com
Owner	2610832 Ontario Inc.	8485 Montrose Road, Niagara Falls, Ontario L2H 3L7 Contact: Mr. Frank Ianniello franki@panoramicproperties.ca

2.3 Current and Proposed Future Uses

The Phase Two Property is currently developed for commercial use (campground), although it is no longer in operation. The proposed future use is residential.

2.4 Applicable Site Condition Standard

The SCS applicable to the Phase Two Property have been evaluated based on the following rationale:

- The proposed property use is residential and therefore the SCS for residential property use would apply;
- Based on a search of the MECP interactive well record mapping tool completed by Wood for the Phase I ESA, there are no domestic water wells on the Phase Two Property, however, a domestic (potable) ground water well was present approximately 200 m south of the Phase Two Property, at a property on the north side of Rexinger Road, approximately 160 m west of Stanley Avenue. This well was installed in 1966 (Well ID 6602251). It has not known if this well is still present and in use for domestic purposes. As such, the SCS for a potable ground water condition would apply;
- Based on the testpits completed for the Phase Two ESA, the native soils at the Site consist of silty clay to clayey silt. As such, the soil at the Phase Two Property was classified as a medium and fine textured soil (i.e., contains 50% or more by mass of particles that are smaller than 75 µm (*O. Reg. 153/04, s.42 (2)*));

- In accordance with *O. Reg. 153/04*, the Phase Two Property includes land that is within 30 m of a "water body": the Welland River is located immediately north of the Phase Two Property, and Lyon's Creek is located approximately 30 m south of the Phase Two Property;

- Based on testpits excavated during this Phase Two ESA as well as on geologic mapping discussed in Section 3.1, the depth to bedrock is greater than 2 m;

- The Phase Two Property was evaluated against the criteria for *Environmentally Sensitive Areas*, as defined by *O. Reg. 153/04* as amended:

    - Soil pH values of 7.6 and 7.7 were reported for two samples tested during the investigation (**Table 1**). The reported soil pH was within the range of 5.0 to 9.0 units for surface soil (surface to 1.5 metres below ground surface [mbgs]) and as such, application of generic criteria is acceptable;

    - The Phase Two Property, and lands within 30 m of the Property, were assessed for *Areas of Natural Significance*, as defined by *O. Reg. 153/04* as amended. An Area of Natural Significance means any of the following:

        - An area reserved or set apart as a provincial park or conservation reserve under the *Provincial Parks and Conservation Reserves Act, 2006;*
        - An area of natural and scientific interest (ANSIs; life science or earth science) identified by the Ministry of Natural Resources and Forestry (MNRF) as having provincial significance;
        - A wetland identified by the MNRF as having provincial significance;
        - An area designated by a municipality in its official plan as environmentally significant, however expressed, including designations of areas as environmentally sensitive, as being of environmental concern and as being ecologically significant.
        - An area designated as an escarpment natural area or an escarpment protection area by the Niagara Escarpment Plan under the *Niagara Escarpment Planning and Development Act;*
        - An area identified by the MNRF as significant habitat of a threatened or endangered species;
        - An area which is habitat of a species that is classified under Section 7 of the *Endangered Species Act, 2007* as a threatened or endangered species;

- Property within an area designated as a natural core area or natural linkage area within the area to which to Oak Ridges Moraine Conservation Plan under the *Oak Ridges Moraine Conservation Act, 2001* applies; and
- An area set apart as a wilderness area under the *Wilderness Areas Act*.

    - Based on a review of the Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario Make a Map: Natural Heritage Areas online mapping tool, two provincially significant wetlands (PSWs) are present in the immediate vicinity of the Phase Two Property, including the Lyon's Creek Wetland Complex and the Welland River East Wetland Complex (**Figure 2**). The PSW lands are also classified as Environmental Protection Area in the City of Niagara Fall's Official Plan and the Regional Municipality of Niagara's Core Natural Heritage Map. As such, the Phase Two Property includes land that is identified as an Area of Natural Significance and is therefore classified as an Environmentally Sensitive Area.

Based on the above site characteristics, the SCS currently applicable to the Phase Two Property, are the Table 1 Full Depth Background Site Condition Standards for residential/parkland/ institutional/industrial/commercial/community property use and medium and fine textured soils (the Table 1 SCS).

3.0 BACKGROUND INFORMATION

3.1 Physical Setting

The elevation at the Site ranges from 171 metres above sea level (mASL) to 180 mASL. The UTM coordinates at the approximate centre of the Site are 655955 east and 4767400 north (NAD 83 UTM 17N). The topography across the central (developed campground) portion of the Site is relatively flat, however, slopes steeply at the north end towards the Welland River. The Welland River is located adjacent to the north of the Site.

According to the **2010 Surficial Geology of Southern Ontario Miscellaneous Release – Data 128 REV**, published by the **Ontario Geological Survey (OGS)**, the geology near the Site is interpreted to consist of fine textured glaciolacustrine deposits consisting of silt and clay with minor sand, and described as massive to well laminated.

The **2007 Paleozoic Geology of southern Ontario Miscellaneous Release – Data 219**, published by the **Armstrong, D.K. and Dodge, J.E.P. of the OGS**, describes the bedrock in the area to consist of dolostone, shale and evaporites of the Salina Formation. Bedrock is anticipated to be encountered at depths in the range of 26 to 44 metres below ground surface (mbgs) (**Bedrock Topography of the Niagara and Niagara-on-the-Lake Area, Southern Ontario**, Ontario Geological Survey Preliminary Map P.2400, 1981).

The regional ground water flow direction, based on topographic features and knowledge gained from other sites in the area, is expected to be generally to the north towards the Welland River. Locally, however, the shallow ground water flow may be influenced by underground utility trenches, conduits, and structures, variations in soil type, and minor fluctuations in topography.

3.2 Past Investigations

Background materials relevant to the discussion provided herein are documented in more detail in 2021 Phase One ESA.

Potentially contaminating activities (PCAs) were identified at the Phase One Property, including:

- historic placement of fill material of unknown quality towards the southwestern corner of the Phase One Property (PCA #30),
- the presence of two pad-mounted transformers to the south of the bathroom facility (PCA #55); and
- the presence of two sub-grade electrical transformers in the campsite area (two APECs, PCA #55).

These PCAs resulted in areas of potential environmental concern (APECs) on the respective areas of the Phase Two Property as shown in Figure 3 in the 2021 Phase One ESA.

The Phase Two ESA was completed to address these APECs.

4.0 SCOPE OF THE INVESTIGATION

4.1 Overview of Site Investigation

The investigation consisted of the following activities:

- Developing a Health & Safety Plan and a Sampling and Analysis Plan for the intrusive work at the Phase Two Property. In accordance with Schedule E of *O. Reg. 153/04 as amended*, a copy of the Sampling and Analysis Plan is provided in **Appendix A**;
- Undertaking clearance of all public underground utility services (i.e., telephone, hydro, natural gas, cable television and sewer/water). Wood requested that the owner identify any privately-owned services as well prior to commencement of the work;
- Excavating seven testpits to depths between 1.0 and 1.7 mbgs to allow for the collection of soil samples to address the fill material at the Phase Two Property, and to assess the soil quality in the vicinity of the transformers on the Phase Two Property;
- Collecting two surface soil samples to assess the soil quality in the vicinity of the transformers on the Phase Two Property;
- Field screening all soil samples collected during the testpitting activities both visually and measuring Combustible Organic Vapours (COVs) and Total Organic Vapours (TOVs) utilizing a RKI Eagle 2, equipped with dual sensors; the sensors were calibrated to a known isobutylene standard (for TOV sensor) and to a known hexane standard (for COV sensor);
- Completing an elevation survey of all testpits;
- Submitting selected soil samples for laboratory analyses for contaminants of potential concern (COPCs) including:
    - metals including hydrides,
    - inorganics, including pH, electrical conductivity (EC) and sodium adsorption ratio (SAR);
    - petroleum hydrocarbons in the F1 to F4 ranges (PHCs);
    - benzene, toluene, ethylbenzene and xylenes (collectively known as BTEX); and
    - polychlorinated biphenyls (PCBs) (samples near transformers).

- Evaluating the results of the chemical analysis against the applicable assessment and criteria; and
- Preparing a report documenting the findings of the investigation.

4.2 Media Investigated

Soil samples were collected during the Phase Two ESA. No ground water samples were collected as the COPCs identified for the Phase Two Property are generally limited to the soil and would not extend to ground water. In addition, no sediment samples were collected as no permanent water bodies are present on the Phase Two Property.

4.3 Phase One ESA Conceptual Site Model

The rationale for the development of the Phase One Conceptual Site Model (CSM) is provided in the 2021 Phase One ESA.

The Phase One CSM provides background information and physical description of the Phase One Property including the geology, hydrogeology and sub-surface structures that can influence the potential movement of any contaminants that may have been released, and any known contaminant impacts to the Phase One Property.

Based on the 2021 Phase One ESA, the APEC associated with the PCAs on the Phase One Property are as follows:

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity*	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC-1: Potentially contaminated fill materials	Southwestern corner of the Phase One Property	#30 – importation of fill material of unknown quality	On-Site (Southwestern corner of the Phase One Property)	Metals, As, Sb, Se EC, SAR, PHCs, BTEX	Soil
APEC-2: Presence of electrical transformer	Surrounding the electrical transformers near the bathroom facility	#55 - transformer manufacturing, processing and use	On-Site (located on concrete pads south of the bathroom facility)	PCBs	Soil
APEC-3: Presence of electrical transformer	Surrounding one sub-grade electrical transformer in the campsite area	#55 - transformer manufacturing, processing and use	On-Site (located sub-grade near campsites)	PCBs	Soil

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity*	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC-4: Presence of electrical transformer	Surrounding the second sub-grade electrical transformer in the campsite area	#55 - transformer manufacturing, processing and use	On-Site (located sub-grade near campsites)	PCBs	Soil

*Potentially Contaminating Activity (PCA) described specifically for the Phase One Property with reference to the applicable item number in the Table of Potentially Contaminating Activities provided in Schedule D of *O. Reg. 153/04* as amended, where applicable.

As – arsenic, Sb – antimony, Se – selenium, PHCs – petroleum hydrocarbons; BTEX – benzene, toluene, ethylbenzene, and xylene; PCBs – polychlorinated biphenyls

4.4 Deviations from Sampling and Analysis Plan

The Sampling and Analysis Plan is included in **Appendix A**. There were no deviations from the Sampling and Analysis Plan.

4.5 Impediments

There were no physical impediments or denial of access during the investigation.

5.0 INVESTIGATION METHOD

5.1 General

This section describes the methods used during this investigation work, including all soil sampling activities. Quality Assurance/Quality Control (QA/QC) procedures are also discussed. The soil sampling activities were undertaken between September 17 and 18, 2019.

The investigation activities were conducted in accordance with Wood's Standard Operating Procedures (SOPs) as of July 2011 and updated in October 2013. The Sampling and Analysis Plan (**Appendix A**) lists the relevant SOPs.

5.2 Intrusive Investigation

5.2.1 Excavation – Testpitting

Seven testpits were excavated on September 17, 2018 utilizing a JCB 3CXeco rubber-tired backhoe operated by H.S. Cole Contracting and Excavating, of Fenwick, Ontario. The testpits were excavated to maximum depths between 1.0 and 1.7 mbgs. Discrete samples were taken at intervals of approximately 0.5 m.

The locations of the testpits are indicated on **Figure 2**. The testpit logs are included in **Appendix B**.

5.2.2 Surface Soil Sampling

Two surface soil samples were collected manually by Wood on September 18, 2018. The composite soil samples were collected over a depth range of 0.1 to 0.3 mbgs.

The locations of the surface samples are indicated on **Figure 2**.

5.3 Soil: Sampling

Soil samples collected during excavating activities were split into duplicate fractions upon recovery. The primary sample fractions were placed into laboratory supplied vials with 2 millilitre (mL) of preservative and unpreserved glass jars with Teflon-lined lids and subsequently stored in coolers on ice for future potential laboratory analysis. The duplicate sample fractions were placed in resealable plastic sample bags and stored at ambient temperature for subsequent field vapour screening. All soil samples were collected in accordance with strict environmental sampling protocols to minimize loss of volatile organics and to ensure reliable and representative results.

All soil sampling equipment (including trowels, spatulas, spoons, etc.) was thoroughly decontaminated between soil sample locations to prevent potential cross-contamination.

The subsurface conditions encountered at the Phase Two Property are described in the testpit logs provided in **Appendix B**.

Visual or olfactory evidence of petroleum hydrocarbon or other chemical impacts were not observed by Wood during the testpitting program.

5.4 Field Screening Measurements

All soil samples collected during testpitting were screened in the field for gross evidence of negative environmental impact including staining and odours. Soil sample headspace screening was also performed to facilitate sample selections for laboratory analysis and to provide an assessment of the vertical contaminant distributions at each location. The duplicate soil sample fractions were screened for COV and TOV concentrations using the sample headspace method. COV and TOV concentrations were measured using an RKI EAGLE 2™ combustible vapour analyzer equipped with dual sensors and calibrated to known hexane and isobutylene standards and operated in methane elimination mode. The RKI EAGLE 2™ can detect 0-11,000 parts per million (ppm) and 0-100% Lower Explosive Limit (LEL) with an accuracy of ±5% and the calibration standard is Hexane. The equipment is calibrated every day prior to the commencement of fieldwork.

The TOV/COV screening measures the cumulative organic/combustible vapour present within sample headspace. TOV/COV results are semi-quantitative at best and are generally only used for relative sample comparison purposes when selecting samples from individual testpits for laboratory analysis.

Soil samples were selected for laboratory analysis based on observations in the field. The depth intervals of samples selected for analysis and the parameters they were submitted for are included in the Tables appendix at the end of this report.

The soil vapour concentrations are included in the testpit logs in **Appendix B**. There were no deviations from the field screening method from the Sampling and Analysis Plan.

5.5 Ground Water: Sampling

No ground water samples were collected during the Phase Two ESA.

5.6 Sediment: Sampling

No sediment samples were collected during the Phase Two ESA.

5.7 Analytical Testing

Wood collected soil/fill samples which were submitted to Paracel Laboratories Ltd. (Paracel), an ISO 17025-certified laboratory located in Ottawa, Ontario for laboratory analysis.

5.8 Residue Management Procedures

The soil generated during the testpitting investigation was placed back into the testpit from which it came. As such, no residues were generated during this investigation.

5.9 Elevation Surveying

An elevation survey was completed by Wood on September 26, 2019. The ground surface elevations at the testpit locations were surveyed and referenced to a local base station part of the TopNet Live RTK Network which refers to the Canadian Geodetic Vertical Datum of 2013 (CGVD2013).

5.10 Quality Assurance and Quality Control Measures

The sampling methodology including jar, bottle and preservative requirements followed Analytical Protocol. Field duplicate soil were collected as required throughout the assessment work. A minimum of one field duplicate for every ten samples in soil was submitted. The field instruments were calibrated daily.

All soil sampling equipment was thoroughly decontaminated between soil sample locations to prevent potential cross-contamination. Decontamination activities included:

- Physical removal of any adhered debris;
- Wash/scrub in "Alconox" soap solution;
- Distilled water rinse; and
- Methanol rinse/air drying.

In addition to field activities pertaining to quality assurance (decontamination of non-dedicated equipment, blind duplicate samples, instrument calibration, etc.), an analytical quality assurance program was also implemented.

The chemical analyses completed on selected soil samples were carried out at Paracel. The validity of the analytical results reported for the samples collected during this investigation has been assessed using the criteria presented in the Analytical Protocol.

The Analytical Protocol establishes Acceptance Limits for use when assessing the reliability of data reported by analytical laboratories. These include maximum hold times for the storage of samples/sample extracts between collection and analysis, specified/approved analytical methods, required field and/or laboratory quality assurance samples such as blanks and field and laboratory duplicates, specified recovery ranges for spiked samples and surrogates (compounds added to samples in known concentrations for data validation purposes), required Reporting Limits (RL, maximum allowable detection limits) and specified precision required when analyzing laboratory duplicate samples.

The results of the analytical quality assurance program are discussed in Section 6.3.

6.0 REVIEW AND EVALUATION

6.1 Geology

The subsurface condition encountered at the Phase Two Property are described as follows:

- Testpits TP101 and TP102 were excavated in the north portion of the Phase Two Property and encountered a thin layer of topsoil (0.2 m in TP101) or granular fill (0.4 m in TP102) overlying native brown, fissured silty clay to clayey silt, with traces of gravel.
- Testpits TP103-TP107 were excavated in the southwest portion of the Phase Two Property where fill had been placed. These testpits encountered various fill materials to depths ranging from 0.5 to 1.2 mbgs, overlying native silty clay/clayey silt as noted above. The fill material was variable, and consisted of:
    - brown to reddish brown silty clay to clayey silt to depths between 0.4-0.5 mbgs (TP103, TP104 and TP107);
    - grey gravel fill, over bricks (0.4-0.6 mbgs) overlying silty clay to clayey silt fill to 0.7 mbgs (TP105);
    - silty clay to clayey silt fill to 1.2 mbgs with a layer of sandy gravel from 0.4-0.7 mbgs (TP106).

Bricks were observed in the silty clay fill in TP104 and TP107.

Petroleum or chemical-like odours were not identified in any of the testpits, however, a faint organic odour was noted at a depth of 0.7-1.2 mbgs at TP106.

6.2 Soil Quality

The results of the soil sample analyses and their respective Table 1 SCS are summarized in **Tables 1 and 2**. The laboratory certificates of analysis are included in **Appendix C**.

The soil analytical results of this investigation are summarized in the following table:

Sample Name	Sample Depth (mbgs)	Sample Analyses						Exceedances Identified
		pH	EC	SAR	Metals	PHC/ BTEX	PCB	Table 1 SCS R/P/I/I/C/C*
Testpits								
TP101-1 / Dup AD	0.5						✓	-
TP102-1	0.5						✓	-
TP103-1	0.5	✓	✓	✓	✓			EC – 635 (570)

Sample Name	Sample Depth (mbgs)	Sample Analyses						Exceedances Identified
		pH	EC	SAR	Metals	PHC/ BTEX	PCB	Table 1 SCS R/P/I/I/C/C*
TP103-2	1.0		✓					-
TP104-1	0.5		✓		✓			EC – 1,340 (570)
TP105-1 / Dup AG	0.7	✓	✓	✓	✓	✓		-
TP106-2	1.2				✓			-
TP107-1	0.5		✓		✓			EC – 676 (570)
Surface Samples								
SS101 / Dup BA	0.1-0.3						✓	-
SS102	0.1-0.3						✓	-

Notes:
All units are in micrograms per gram (µg/g) except pH (pH units), EC (microSiemens per centimetre – µS/cm) and SAR (unitless).
* Where an exceedance is shown, it is shown in this format: "parameter – detected concentration (Table 1 SCS)"

No chemical or biological transformations were noted in the analysis nor did the results indicate that the soil at the Phase Two Property is a contaminant mass.

6.3 Quality Assurance Program (ANALYTICAL) and Quality Control Results

The validity of the analytical results reported for the samples collected during this investigation has been assessed using the criteria presented in the Analytical Protocol.

The Analytical Protocol establishes Acceptance Limits for use when assessing the reliability of data reported by analytical laboratories. These include maximum hold times for the storage of samples/sample extracts between collection and analysis, specified/approved analytical methods, required field and/or laboratory quality assurance samples such as blanks and field and laboratory duplicates, specified recovery ranges for spiked samples and surrogates (compounds added to samples in known concentrations for data validation purposes), required Method Detection Limits (MDL, maximum allowable detection limits) and specified precision required when analyzing laboratory duplicate samples.

Field QA/QC Program - Soil

The field QA/QC program consisted of analyzing the following field duplicate soil samples:

- Dup AG, a field duplicate of TP105-1, for pH, EC, SAR, metals, PHCs and BTEX;

- Dup AD, a field duplicate of TP101-1, for PCBs; and
- Dup BA, a field duplicate of SS101, for PCBs.

Duplicate samples are analyzed to assess the precision of the field sampling and laboratory analytical processes. To accurately calculate a statistically valid relative percent difference (RPD) for the duplicate sample, the concentration of the analytes found in both the original and duplicate sample must be greater than five times the MDL.

An assessment of the RPDs for the duplicate samples was completed (**Tables 1 and 2**). The RPDs were either not calculable as both values were not greater than 5 times the MDL or were below the RPD limits, with the exception of EC in TP105-1 and Dup AG (37% RPD, versus the RPD limit of 10% for EC).

It is noted that the RPD values in the Analytical Protocol are for duplicate samples collected at the laboratory and are used for comparison to the RPDs calculated for field duplicates.

Laboratory QA/QC Program - Soil

The laboratory results for soil samples obtained during Wood's investigation met the Acceptance Limits of the Analytical Protocol. All samples were analyzed within laboratory hold times and preservation method, storage requirements and container type were utilized as the Analytical Protocol. No issues with the QA/QC that would impact the results of the assessment were noted. The results of the QA/QC analyses are included on the laboratory Certificates of Analyses presented in **Appendix C**.

Certification of Analytical Results

Based on the review of the QA/QC results for soil, the Chain of Custody forms and the laboratory Certificates of Analysis, it is concluded that:

- All Certificates of Analysis received pursuant to Section 47(2) of *O. Reg. 153/04* complies with Section 47(3) of *O. Reg. 153/04*;
- A Certificate of Analysis has been received for each sample submitted for analysis; and
- Copies of all Certificates of Analysis are provided in **Appendix C** of this report.

No issues with the analytical results affected decision-making or prevented the overall objectives of the investigation from being met.

6.4 Conceptual Site Model

The Conceptual Site Model (CSM) for the Phase Two Property will be generated once the Phase Two ESA has been completed (including the soil remediation program).

7.0 CONCLUSIONS

Wood was retained by the Client to conduct a Phase Two ESA of the property located at 9015 Stanley Avenue, in Niagara Falls, Ontario. The Phase Two Property is occupied by Oaklands Campground, which is no longer in operation. The campground was originally developed in the early 1970s as Paradise Acres Campground and was later purchased by Marineland and operated as King Waldorf Tent and Trailer Park from the 1990s to 2017, when it was subsequently purchased by the current owners. It is Wood's understanding that an RSC, acknowledged by the MECP, is required as a condition of the proposed redevelopment of the Phase Two Property for residential use.

Wood previously completed a Phase One ESA the findings of which were documented in the 2021 Phase One ESA report. PCAs were identified at the Phase One Property, including: historic placement of fill material of unknown quality towards the south of the Phase One Property (PCA #30), the presence of two pad-mounted transformers to the south of the bathroom facility (PCA #55); and the presence of two sub-grade electrical transformers in the campsite area (two APECs, PCA #55). These PCAs resulted in APECs on the respective areas of the Phase Two Property. The Phase Two ESA was completed to address these APECs, as required to support the RSC.

The primary findings of the Phase Two ESA are as follows:

- Wood excavated seven testpits, collected two surface soil samples and completed an elevation survey between September 17 and September 26, 2019. The locations of the testpits and surface soil samples were selected to address the APECs identified during the Phase One ESA (historical fill placement and the presence of electrical transformers).

- The subsurface conditions encountered at the sample locations indicated:

    - Testpits TP101 and TP102 were excavated in the north portion of the Site and encountered a thin layer of topsoil (0.2 m in TP101) or granular fill (0.4 m in TP102) overlying native brown, fissured silty clay to clayey silt, with traces of gravel.

    - Testpits TP103-TP107 were excavated in the southwest portion of the Phase Two Property where fill had been placed. These testpits encountered various fill materials to depths ranging from 0.5 to 1.2 mbgs, overlying native silty clay/clayey silt as noted above. The fill material was variable, and consisted of:

        - brown to reddish brown silty clay to clayey silt to depths between 0.4-0.5 mbgs (TP103, TP104 and TP107);

- grey gravel fill, over bricks (0.4-0.6 mbgs) overlying silty clay to clayey silt fill to 0.7 mbgs (TP105);
- silty clay to clayey silt fill to 1.2 mbgs with a layer of sandy gravel from 0.4-0.7 mbgs (TP106).

  - The fill contained some non-soil materials (pieces of brick) at TP104 and TP107. Petroleum or chemical-like odours were not identified in any of the testpits, however, a faint organic odour was noted at a depth of 0.7-1.2 mbgs at TP106.

- The assessment criteria applicable to the Phase Two Property, for the purposes of an RSC filing, are the Table 1 SCS Full Depth Background Site Condition Standards for residential/parkland/ institutional/industrial/commercial/community property use and medium and fine textured soils (the Table 1 SCS).

- Five soil/fill samples were submitted for analysis of metals including hydrides, five soil/fill samples were submitted for EC analysis, two soil/fill samples were submitted for analysis of SAR, one soil/fill samples was submitted for analysis of PHCs/BTEX and four soil/fill samples were submitted for analysis of PCBs. The results of the soil testing indicated all parameters in all samples met the Table 1 SCS with the exception of EC in three samples of soil/fill, collected from the southwestern portion of the Phase Two Property.

- The Phase Two Property is not in compliance with the Table 1 SCS, and therefore, an RSC cannot be filed. Wood has provided the Client with a work plan for the additional investigations and remediation required to attain compliance with the Table 1 SCS such that an RSC can be filed. This Phase Two ESA would be updated upon completion of remediation.

7.1 CLOSURE

The undersigned carried out the Phase Two ESA documented herein, including developing the Sampling and Analysis Plan, supervising all field activities, reviewing the resulting data and prepared this report, including the findings and conclusions presented herein, acting either as a Qualified Person or under the supervision of a Qualified Person. Any practice of geoscience documented within this report was undertaken by or under the supervision of a Professional Engineer or Professional Geoscientist licensed in the Province of Ontario.

This report was prepared for the exclusive use of Ricci Law Professional Corporation and is intended to provide a Phase Two ESA of the property located at 9015 Stanley Avenue, in Niagara Falls, Ontario at the time of the site field work. Wood shall provide written confirmation to any third party identified by the Client that such party may rely on any reports, documents and materials generated by Wood during this Project. Any use which an unauthorized third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from Wood will be required.

The investigation undertaken by Wood with respect to this report and any conclusions or recommendations made in this report reflect Wood's judgment based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for specific application to this site and it is based, in part, upon visual observation of the site, as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site, which were unavailable for direct investigation, which were not investigated directly. Wood has used its professional judgment in analyzing this information and formulating these conclusions.

Wood makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

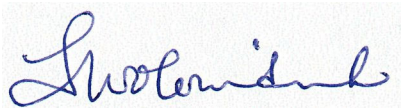
This Report is also subject to the further Standard Limitations attached in **Appendix D.**

We trust that the information presented in this report meets your current requirements. Should you have any questions or require further information, please contact the undersigned.

Yours truly,

Wood Environment & Infrastructure Solutions,
a Division of Wood Canada Limited.

Prepared by:



Tracy Wolowidnek, B.Sc.
Environmental Scientist

Reviewed by:

Patrick Shriner, P.Geo.
Associate, Environmental Geoscientist

FIGURES

CLIENT: RICCI LAW PROFESSIONAL CORPORATION	DWN BY: ZF	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT OAKLANDS CAMPGROUND 9015 STANLEY AVENUE, NIAGARA FALLS, ON	REV. NO.: A
	CHK'D BY: TW		DATE: NOVEMBER 2019
	DATUM: NAD 83		PROJECT NO: SCT196351
	PROJECTION: UTM ZONE 17T	TITLE: SITE LOCATION PLAN	FIGURE No. 1
	SCALE: 1:30,000		

Wood Environment & Infrastructure Solutions
3300 Merrittville Highway, Unit 5
Thorold, Ontario L2V 4Y6

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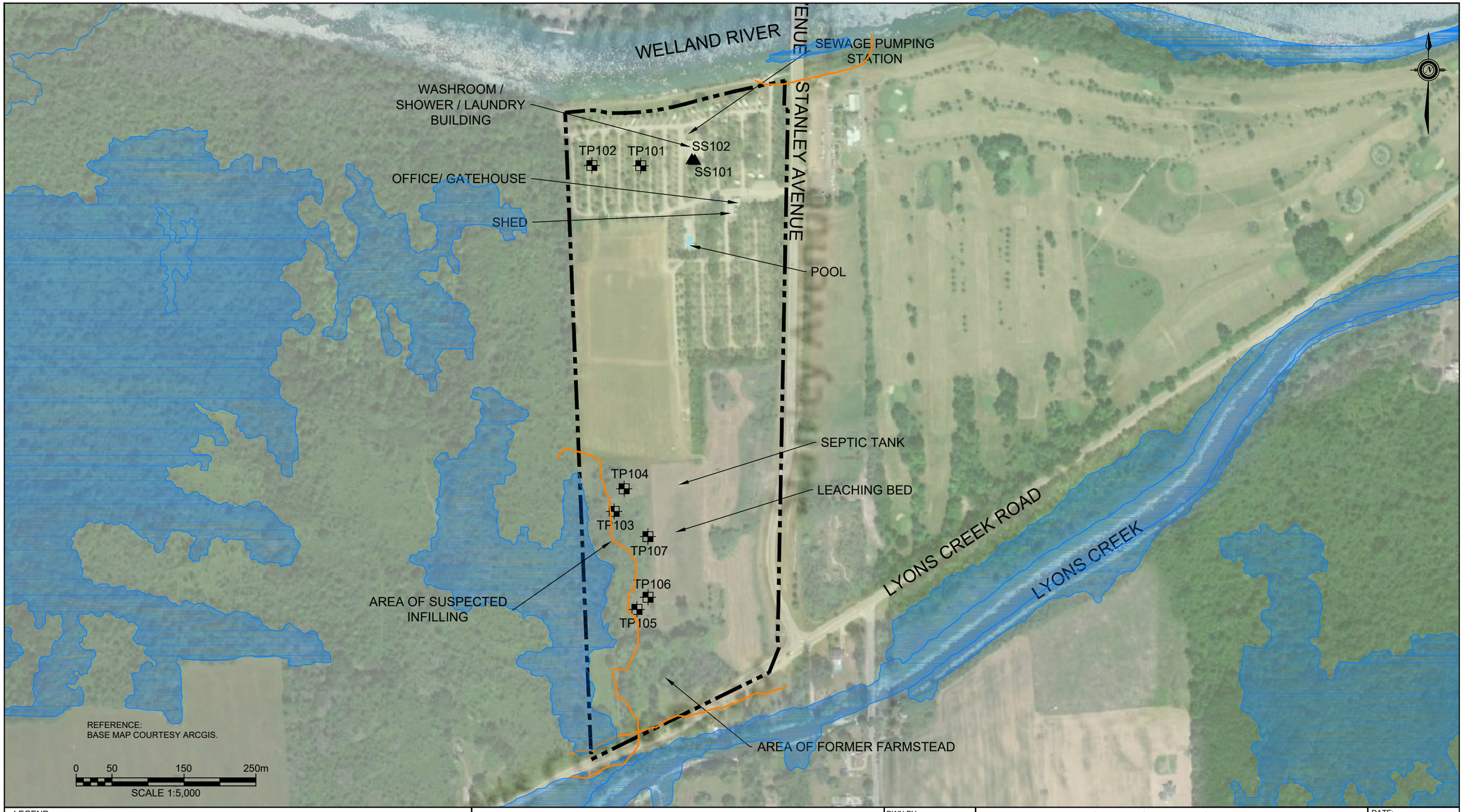

LEGEND:

- PROPERTY BOUNDARY
- TESTPIT LOCATION
- SURFACE SOIL SAMPLE
- LYONS CREEK WETLAND COMPLEX AND WELLAND RIVER EAST WETLAND COMPLEX
- 30m BUFFER FROM THE WETLANDS

CLIENT: RICCI LAW PROFESSIONAL CORPORATION

Wood Environment & Infrastructure Solutions
3300 Merrittville Highway, Unit 5
Thorold, Ontario L2V 4Y6

DWN BY:	ZF
CHK'D BY:	TW
DATUM:	NAD 83
PROJECTION:	UTM ZONE 17T
SCALE:	AS SHOWN

PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
OAKLANDS CAMPGROUND
9015 STANLEY AVENUE, NIAGARA FALLS, ON

TITLE: BOREHOLE, MONITORING WELL AND TESTPIT LOCATION PLAN

DATE:	NOVEMBER 2019
PROJECT NO:	SCT196351
REV. NO.:	A
FIGURE No.	2

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TABLES

Table 1: Summary of Soil Analyses for General Inorganics and Metals

Client: Ricci Law Professional Corporation
Site: 9015 Stanley Avenue, Niagara Falls, Ontario
Project: SCT196351

Sample ID				TP103-1	TP103-2	TP104-1	TP105-1	Dup AG Duplicate of sample TP105-1	Duplicate Average (TP105-1 and Dup AG)	RPD (TP105-1 and Dup AG)	TP106-2	TP107-1
Sample Depth (m)				0.5	1.0	0.5	0.7	0.7			1.2	0.5
Date Collected				17-Sep-19	17-Sep-19	17-Sep-19	17-Sep-19	17-Sep-19			17-Sep-19	17-Sep-19
Laboratory ID				1938513-03	1938513-10	1938513-04	1938513-05	1938513-09			1938513-06	1938513-07
Date Analyzed - pH				24-Sep-19	-	-	24-Sep-19	24-Sep-19			-	-
Date Analyzed - Conductivity				24-Sep-19	24-Sep-19	24-Sep-19	24-Sep-19	24-Sep-19			-	24-Sep-19
Date Analyzed - SAR				23-Sep-19	-	-	23-Sep-19	23-Sep-19			-	-
Date Analyzed - Metals				23-Sep-19	-	23-Sep-19	23-Sep-19	23-Sep-19			23-Sep-19	23-Sep-19
Parameter	**Units**	**MDL**	**Table 1 SCS[a]**									
General Inorganics												
SAR	N/A	0.01	2.4	0.80	-	-	0.39	0.59	0.49	-	-	-
Conductivity	uS/cm	5	570	**635**	431	**1340**	259	378	319	**37%**	-	**676**
pH	pH units	0.05	+	7.6	-	-	7.6	7.7	7.6	0.1 pH Units	-	-
Metals												
Antimony	µg/g	1	1.3	<	-	<	<	<	<	NC	<	<
Arsenic	µg/g	1	18	6	-	6	5	5	5	0%	5	7
Barium	µg/g	1	220	117	-	96	91	96	94	5%	79	137
Beryllium	µg/g	0.5	2.5	0.9	-	0.7	0.7	0.7	0.7	NC	0.6	1.1
Boron	µg/g	5	36	10.9	-	11.8	9.5	10.0	9.8	NC	9.1	8.7
Cadmium	µg/g	0.5	1.2	<	-	<	<	<	<	NC	<	<
Chromium	µg/g	5	70	27	-	27	24	23	24	NC	18	30
Cobalt	µg/g	1	21	12	-	10	11	10	11	10%	10	12
Copper	µg/g	5	92	23	-	28	18	18	18	NC	18	25
Lead	µg/g	1	120	19	-	32	9	11	10	20%	10	15
Molybdenum	µg/g	1	2	<	-	<	<	<	<	NC	<	<
Nickel	µg/g	5	82	25	-	24	22	21	22	NC	21	25
Selenium	µg/g	1	1.5	<	-	<	<	<	<	NC	<	<
Silver	µg/g	0.3	0.5	<	-	<	<	<	<	NC	<	<
Thallium	µg/g	1	1	<	-	<	<	<	<	NC	<	<
Uranium	µg/g	1	2.5	<	-	<	<	<	<	NC	<	<
Vanadium	µg/g	10	86	36	-	32	37	34	36	NC	27	42
Zinc	µg/g	20	290	68	-	120	47	49	48	NC	45	87

Notes:

"a" - Table 1: Full Depth Background Site Condition Standards for residential/parkland/institutional/Industrial/Commercial/Community property use; established in "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the* Environmental Protection Act", Ontario Ministry of the Environment and Climate Change, 15 April 2011 (MOECC). SCS for medium to fine textured soils utilized.

Bolded values exceed the Table 1 SCS.

"µg/g" - micrograms per gram, parts per million.

"MDL" - method detection limit.

"<" - sample results less than the MDL.

"-" - not applicable or parameter not analyzed.

"Duplicate Average" - average of results of sample and it's field duplicate; where parameter <MDL, MDL used to calculate average. Note: the duplicate average must exceed the SCS for there to be an exceedance.

"RPD" - relative percent difference.

"NC" - RPD not calculable as both values are not greater than 5x the MDL.

Bold - means RPD outside of the sample duplicate value as outlined in the 2011 Analytical Protocol (Metals 30%, pH 0.3 pH units, Conductivity 10%). The 2011 Analytical Protocol does not indicate a sample duplicate value for SAR.

"+" means as per O. Reg. 153/04 as amended, in order to apply the generic Site Condition Standards, pH for surface soil (<1.5 mbgs) should be between 5 and 9 and pH for subsurface soil (>1.5 mbgs) should be between 5 and 11.

Table 2: Summary of Soil Analyses for PHCs, BTEX and PCBs

Client: Ricci Law Professional Corporation
Site: 9015 Stanley Avenue, Niagara Falls, Ontario
Project: SCT196351

Sample ID				TP101-1	Dup AD (Duplicate of sample TP101-1)	Duplicate Average (TP101-1 and Dup AD)	RPD (TP101-1 and Dup AD)	TP102-1	TP105-1	Dup AG (Duplicate of sample TP105-1)	Duplicate Average (TP105-1 and Dup AG)	RPD (TP105-1 and Dup AG)	SS101	Dup BA (Duplicate of sample SS101)	Duplicate Average (SS101 and Dup BA)	RPD (SS101 and Dup BA)	SS102
Sample Depth (m)				0.5	0.5			0.5	0.7	0.7			0.1-0.3	0.1-0.3			0.1-0.3
Date Collected				17-Sep-19	17-Sep-19			17-Sep-19	17-Sep-19	17-Sep-19			18-Sep-19	18-Sep-19			18-Sep-19
Laboratory ID				1938513-01	1938513-08			1938513-02	1938513-05	1938513-09			1938480-01	1938480-03			1938480-03
Date Analyzed - PHCs (F2-F4)				N/A	N/A			N/A	23-Sep-19	23-Sep-19			N/A	N/A			N/A
Date Analyzed - PHCs (F1) & BTEX				N/A	N/A			N/A	24-Sep-19	24-Sep-19			N/A	N/A			N/A
Date Analyzed - PCBs				23-Sep-19	23-Sep-19			23-Sep-19	N/A	N/A			23-Sep-19	23-Sep-19			23-Sep-19
Parameter	**Units**	**MDL**	**Table 1 SCS[a]**														
Petroleum Hydrocarbons (PHCs)																	
F1 PHCs (C6-C10)	µg/g	7	25	-	-	-	-	-	<	<	<	NC	-	-	-	-	-
F2 PHCs (C10-C16)	µg/g	4	10	-	-	-	-	-	<	<	<	NC	-	-	-	-	-
F3 PHCs (C16-C34)	µg/g	8	240	-	-	-	-	-	<	<	<	NC	-	-	-	-	-
F4 PHCs (C34-C50)	µg/g	6	120	-	-	-	-	-	<	<	<	NC	-	-	-	-	-
BTEX																	
Benzene	µg/g	0.02	0.02	-	-	-	-	-	<	<	<	NC	-	-	-	-	-
Ethylbenzene	µg/g	0.05	0.05	-	-	-	-	-	<	<	<	NC	-	-	-	-	-
Toluene	µg/g	0.05	0.2	-	-	-	-	-	<	<	<	NC	-	-	-	-	-
m/p-Xylene	µg/g	0.05	-	-	-	-	-	-	<	<	<	NC	-	-	-	-	-
o-Xylene	µg/g	0.05	-	-	-	-	-	-	<	<	<	NC	-	-	-	-	-
Xylenes, total	µg/g	0.05	0.05	-	-	-	-	-	<	<	<	NC	-	-	-	-	-
PCBs																	
PCBs, total	µg/g	0.05	0.3	<	<	<	NC	<	-	-	-	-	<	<	<	NC	<

Notes:

"a" - Table 1: Full Depth Background Site Condition Standards for residential/parkland/institutional/Industrial/Commercial/Community property use; established in "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", Ontario Ministry of the Environment and Climate Change, 15 April 2011 (MOECC). SCS for medium to fine textured soils utilized.

Bolded values exceed the Table 1 SCS.

"µg/g" - micrograms per gram, parts per million.

"MDL" - method detection limit.

"NV" - no value derived

"<" - sample results less than the MDL.

"-" - not applicable or parameter not analyzed.

"Duplicate Average" - average of results of sample and it's field duplicate; where parameter <MDL, MDL used to calculate average. Note: the duplicate average must exceed the SCS for there to be an exceedance.

"RPD" - relative percent difference.

"NC" - RPD not calculable as both values are not greater than 5x the MDL.

Bold - means RPD outside of the sample duplicate value as outlined in the 2011 Analytical Protocol (BTEX - 50%, PHCs - 30%, PCBs - 40%).

APPENDIX A

SAMPLING AND ANALYSIS PLAN

Memo

To	**Field Staff**	File no	**SCT196351**
From	**Patrick Shriner**	cc	**Kelly Patterson**
Tel	**905-687-6616**		

Date **September 2019**

Subject **Phase Two ESA Sampling and Quality Assurance Plan**
9015 Stanley Avenue, Niagara Falls, Ontario

Scope of Sampling Program

The proposed number of testpits and surface samples, along with the rationale for the location of each was determined by Wood. The soil/fill samples are to be analyzed for one or more of the following contaminants of potential concern (COPCs): metals (including hydrides), EC, SAR, PHCs, BTEX and PCBs. The sample depths and parameters to be analyzed will be determined based on observations during the soil sampling programs and reviewed with the QP_{ESA} prior to submission. Field observations may indicate a need for additional numbers or types of samples, e.g., vertical and horizontal delineation. If such field observations are made, contact Patrick Shriner (905-687-6616) and report the observations. No water samples are proposed at this time.

Any deviations from the planned scope of work and the rationale for the deviation(s) are to be approved by Patrick Shriner and are to be recorded in the field notes.

Sampling Rationale and Procedures

Sampling locations have been assessed on the basis of areas of potential environmental concern (APECs) identified during the Phase One ESA.

The following Wood Standard Operating Procedures (SOPs) are to be followed during the Project and are incorporated herein by reference:

- SOP No. 1 - Equipment Calibration and Maintenance, Rev. No. 0, October 8, 2013;
- SOP No. 2 - Equipment Decontamination, Rev. No. 0, October 8, 2013;
- SOP No. 3 – Sample Location Inspection and Monitoring, Rev. No. 0, October 8, 2013;

Wood Environment and Infrastructure Solutions
110 James Street, Suite 301
St. Catharines, Ontario
Canada L2R 7E8
Tel (905) 687-6616
www.amecfw.com

- SOP No. 4 – Measurement of Field Parameters, Rev. No. 0, October 8, 2013;
- SOP No. 8 - Subsurface Soil Sampling, Rev. No. 0, October 8, 2013;
- SOP No. 10 - Field Vapour Headspace Screening, Rev. No. 0, October 8, 2013;
- SOP No. 12 - Excavation of Exploratory Test Pits, Rev. No. 0, October 8, 2013;
- SOP No. 19 - Handling of Volatile Samples, Rev. No. 0, October 8, 2013; and
- SOP No. 20 - Chain of Custody Completion, Rev. No. 0, October 8, 2013.

Specifications regarding sampling procedures, field note-taking, instrument calibration, field measurements, surveying, collection of blind duplicate samples, etc., are provided in the SOPs. The remainder of this Section provides a brief summary of sampling procedures that are to be followed, which does not supersede the requirements of the SOPs with the exception of changes in sample handling/collection practices required under the *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, March 2004, amended as of 01 July 2011, in order to document site-specific information (e.g., contact persons).

Soil/fill samples are to be collected as per *O. Reg. 153/04*. Soil samples are to be collected at standard sampling locations throughout the full vertical extent of each testpit.

Soil samples shall be submitted for analysis of parameters outlined above, as well as on the basis of the presence of fill material, visual or olfactory evidence of contamination, field screening results [PHCs and VOCs/BTEX], proximity to the apparent water table (LNAPLs) or the vicinity of the interface with a lower confining layer (DNAPLs). In the absence of any other indicators of impact, soil samples to be analyzed shall be collected from fill materials with the exception that samples for VOCs/BTEX may be collected from the vicinity of the water table or a lower confining layer and samples for PHC F1 – F4 may be collected from the vicinity of the water table.

Samples are to be submitted for analysis with the Chain of Custody clearly marked "*O. Reg. 153/04*" and with Table 1 and RSC selected as the applicable criteria. *Soil samples to be analyzed for VOCs must be analyzed as per the revised Analytical Protocol which indicates field preservation in methanol.*

Quality Assurance Program

The SOPs cited previously specify decontamination procedures, protocols for the collection of duplicate samples, the use of blank samples and instrument calibration checks, etc. In addition, specific details regarding the quality assurance programs for soil sampling are provided in SOP No. 12, Excavation of Exploratory Test Pits.

In the case of this Project, no non-dedicated sampling equipment, other than excavation equipment, is to be used.

Patrick Shriner, P.Geo.
Associate Geoscientist
patrick.shriner@woodplc.com

APPENDIX B

TESTPIT LOGS

Phase Two ESA
Site Location: 9015 Stanley Ave, Niagara Falls, Ontario
Job Number: SCT196351
Date: September 17, 2019

TESTPIT LOG: 101				**UTM: 4767705, 655905**	
Sample Number	**Depth (mbgs)**	**Comments (odour, staining, etc.)**	**COV/TOV (ppm)**	**Stratigraphy**	
				Depth (mbgs)	**Material Description**
-	-	No odours or staining	0/0	0.0-0.2	Topsoil
TP101-1 (PCBs) + Dup AD (PCBs)	0.5	No odours or staining	1/5	0.2-1.0	Reddish brown, Silty Clay/Clayey Silt NATIVE, traces of gravel, APL
-	-	No odours or staining	1/20		
Final Depth: 1.0 mbgs		Upon Completion: Testpit remained open and dry			

Equipment: JCB Backhoe 3CXeco

Originated by: CM/BH
Compiled By: BH
Checked By: KP

Notes: "mbgs" means metres below ground surface. "PCBs" means polychlorinated biphenyls. "PHCs" means petroleum hydrocarbons. "BTEX" means benzene, toluene, ethylbenzene and xylenes. "DTPL" means Drier Than Plastic Limit. "APL" means At Plastic Limit. "WTPL" means Wetter Than Plastic Limit

Phase Two ESA
Site Location: 9015 Stanley Ave, Niagara Falls, Ontario
Job Number: SCT196351
Date: September 17, 2019

TESTPIT LOG: 102				UTM: 4767703, 655835	
Sample Number	Depth (mbgs)	Comments (odour, staining, etc.)	COV/TOV (ppm)	Stratigraphy	
				Depth (mbgs)	Material Description
-	-	No odours or staining	-	0.0-0.4	Grey Granular A FILL
TP102-1 (PCBs)	0.5	No odours or staining	1/35	0.4-1.0	Brown, Silty Clay/Clayey Silt NATIVE, traces of gravel, fissured, APL
-	-	No odours or staining	0/5		
Final Depth: 1.0 mbgs		Upon Completion: Testpit remained open and dry			

TESTPIT LOG: 103				UTM: 4767223, 655864	
Sample Number	Depth (mbgs)	Comments (odour, staining, etc.)	COV/TOV (ppm)	Stratigraphy	
				Depth (mbgs)	Material Description
TP103-1 (metals, EC, SAR, pH)	0.5	No odours or staining	0/0	0.0-0.5	Brown, Silty Clay/Clayey Silt FILL, some gravel, traces of sand, APL
TP103-2 (EC)	1.0	No odours or staining	0/25	0.5-1.0	Reddish brown, Silty Clay/Clayey Silt NATIVE, traces of gravel, APL
Final Depth: 1.0 mbgs		Upon Completion: Testpit remained open and dry.			

Equipment: JCB Backhoe 3CXeco

Originated by: CM/BH
Compiled By: BH
Checked By: KP

Notes: "mbgs" means metres below ground surface. "PCBs" means polychlorinated biphenyls. "PHCs" means petroleum hydrocarbons. "BTEX" means benzene, toluene, ethylbenzene and xylenes. "DTPL" means Drier Than Plastic Limit. "APL" means At Plastic Limit. "WTPL" means Wetter Than Plastic Limit

Phase Two ESA
Site Location: 9015 Stanley Ave, Niagara Falls, Ontario
Job Number: SCT196351
Date: September 17, 2019

TESTPIT LOG: 104				UTM: 4767253, 655884	
Sample Number	Depth (mbgs)	Comments (odour, staining, etc.)	COV/TOV (ppm)	Stratigraphy	
				Depth (mbgs)	Material Description
TP104-1 (metals, EC)	0.5	Bricks found, no odours or staining	0/15	0.0-0.5	Reddish brown, Silty Clay/Clayey Silt FILL, some gravel, APL/WTPL
-	-	No odours or staining	0/30	0.5-1.0	Reddish brown, Silty Clay/Clayey Silt NATIVE, traces of gravel, WTPL
Final Depth: 1.0 mbgs		Upon Completion: Testpit remained open and dry.			

Equipment: JCB Backhoe 3CXeco

Originated by: CM/BH
Compiled By: BH
Checked By: KP

Notes: "mbgs" means metres below ground surface. "PCBs" means polychlorinated biphenyls. "PHCs" means petroleum hydrocarbons. "BTEX" means benzene, toluene, ethylbenzene and xylenes. "DTPL" means Drier Than Plastic Limit. "APL" means At Plastic Limit. "WTPL" means Wetter Than Plastic Limit

Phase Two ESA
Site Location: 9015 Stanley Ave, Niagara Falls, Ontario
Job Number: SCT196351
Date: September 17, 2019

TESTPIT LOG: 105				UTM: 4767092, 655901	
Sample Number	Depth (mbgs)	Comments (odour, staining, etc.)	COV/TOV (ppm)	Stratigraphy	
				Depth (mbgs)	Material Description
-	-	No odours or staining	-	0.0-0.4	Grey gravel FILL, some sand
-	-	No odours or staining	-	0.4-0.6	Bricks
TP105-1 (metals, EC, SAR, pH, BTEX, PHCS(F1-F4)) + Dup AG (metals, EC, SAR, pH, BTEX, PHCS(F1-F4))	0.7	No odours or staining	1/45	0.6-0.7	Brown, Silty Clay/Clayey Silt FILL, traces of sand and gravel, moist
-	-	No odours or staining	0/55	0.7-1.2	Reddish brown, Silty Clay/Clayey Silt NATIVE, traces of gravel, fissured, APL
Final Depth: 1.2 mbgs		Upon Completion: Testpit remained open and dry.			

Equipment: JCB Backhoe 3CXeco

Originated by: CM/BH
Compiled By: BH
Checked By: KP

Notes: "mbgs" means metres below ground surface. "PCBs" means polychlorinated biphenyls. "PHCs" means petroleum hydrocarbons. "BTEX" means benzene, toluene, ethylbenzene and xylenes. "DTPL" means Drier Than Plastic Limit. "APL" means At Plastic Limit. "WTPL" means Wetter Than Plastic Limit

Phase Two ESA
Site Location: 9015 Stanley Ave, Niagara Falls, Ontario
Job Number: SCT196351
Date: September 17, 2019

TESTPIT LOG: 106				UTM: 4767102, 655913	
Sample Number	Depth (mbgs)	Comments (odour, staining, etc.)	COV/TOV (ppm)	Stratigraphy	
				Depth (mbgs)	Material Description
-	-	No odours or staining	0/15	0.0-0.4	Brown, Silty Clay/Clayey Silt FILL, moist
-	-	No odours or staining	-	0.4-0.7	Sandy Gravel FILL, some clay, moist
TP106-2 (Metals)	1.2	Organic odour, no staining	0/35	0.7-1.2	Grey, Silty Clay/Clayey Silt FILL, some sand, moist
-	-	No odours or staining	0/30	1.2-1.7	Reddish brown, Silty Clay/Clayey Silt NATIVE, traces of gravel, fissured, APL
Final Depth: 1.7 mbgs		Upon Completion: Testpit remained open and dry.			

Equipment: JCB Backhoe 3CXeco

Originated by: CM/BH
Compiled By: BH
Checked By: KP

Notes: "mbgs" means metres below ground surface. "PCBs" means polychlorinated biphenyls. "PHCs" means petroleum hydrocarbons. "BTEX" means benzene, toluene, ethylbenzene and xylenes. "DTPL" means Drier Than Plastic Limit. "APL" means At Plastic Limit. "WTPL" means Wetter Than Plastic Limit

Phase Two ESA
Site Location: 9015 Stanley Ave, Niagara Falls, Ontario
Job Number: SCT196351
Date: September 17, 2019

TESTPIT LOG: 107				UTM: 4767192, 655920	
Sample Number	Depth (mbgs)	Comments (odour, staining, etc.)	COV/TOV (ppm)	Stratigraphy	
				Depth (mbgs)	Material Description
TP107-1 (metals, EC)	0.5	Bricks, large stones, no odours or staining	0/10	0.0-0.5	Brown, Silty Clay/Clayey Silt FILL, some gravel, APL
-	-	No odours or staining	0/5	0.5-1.0	Brown, Silty Clay/Clayey Silt NATIVE, traces of gravel, fissured, APL/WTPL
Final Depth: 1.0 mbgs		Upon Completion: Testpit remained open and dry.			

Equipment: JCB Backhoe 3CXeco

Originated by: CM/BH
Compiled By: BH
Checked By: KP

Notes: "mbgs" means metres below ground surface. "PCBs" means polychlorinated biphenyls. "PHCs" means petroleum hydrocarbons. "BTEX" means benzene, toluene, ethylbenzene and xylenes. "DTPL" means Drier Than Plastic Limit. "APL" means At Plastic Limit. "WTPL" means Wetter Than Plastic Limit

APPENDIX C

LABORATORY CERTIFICATES OF ANALYSIS

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Certificate of Analysis

Wood Environment & Infrastructure (Thorold)

3300 Merrittville Hwy, Unit 5
Thorold, ON L2V 4Y6
Attn: Kelly Patterson

Client PO:
Project: SCT196351 - 9015 Stanley Ave.
Custody: 48448

Report Date: 24-Sep-2019
Order Date: 19-Sep-2019

Order #: 1938480

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1938480-01	SS101
1938480-02	SS102
1938480-03	Dup BA

Approved By:

Dale Robertson, BSc
Laboratory Director

Certificate of Analysis
Client: Wood Environment & Infrastructure (Thorold)
Client PO:

Report Date: 24-Sep-2019
Order Date: 19-Sep-2019
Project Description: SCT196351 - 9015 Stanley Ave.

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PCBs, total	SW846 8082A - GC-ECD	23-Sep-19	23-Sep-19
Solids, %	Gravimetric, calculation	23-Sep-19	23-Sep-19

Certificate of Analysis

Report Date: 24-Sep-2019

Client: Wood Environment & Infrastructure (Thorold)

Order Date: 19-Sep-2019

Client PO:

Project Description: SCT196351 - 9015 Stanley Ave.

	Client ID:	SS101	SS102	Dup BA	-
	Sample Date:	18-Sep-19 13:45	18-Sep-19 13:55	18-Sep-19 13:55	-
	Sample ID:	1938480-01	1938480-02	1938480-03	-
	MDL/Units	Soil	Soil	Soil	-
Physical Characteristics					
% Solids	0.1 % by Wt.	79.9	77.7	78.7	-
PCBs					
PCBs, total	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Decachlorobiphenyl	Surrogate	113%	101%	108%	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	ND	0.05	ug/g						
Surrogate: Decachlorobiphenyl	*0.103*		*ug/g*		*103*	*60-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	ND	0.05	ug/g dry	ND			0.0	40	
Surrogate: Decachlorobiphenyl	*0.0924*		*ug/g dry*		*92.4*	*60-140*			
Physical Characteristics									
% Solids	79.4	0.1	% by Wt.	82.5			3.8	25	

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	0.446	0.05	ug/g	ND	111	60-140			
Surrogate: Decachlorobiphenyl	*0.107*		*ug/g*		*107*	*60-140*			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

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Paracel ID: 1938480

Chain of Custody (Lab Use Only)

№ 48446

Page 1 of 1

Client Name: Wood E&I Solutions	Project Reference: SCT96351 - 9015 Stanley Ave	**Turnaround Time:**	
Contact Name: Kelly Patterson	Quote #: 19-010	☐ 1 Day	☐ 3 Day
Address: 3300 Merritville Hwy, Unit 5, Thorold ON L2V 4Y6	PO #:	☐ 2 Day	☒ Regular
Telephone: 905-687-6616	Email Address: kelly.patterson@woodplc.com	Date Required:	

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 1938480

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	Required Analyses: PCBs
1	SS101	S		1	Sept 18/19	13:45	X
2	SS102	S		1		13:55	X
3	DupBA	S		1			X
4							
5							
6							
7							
8							
9							
10							

Comments: Governed by the T/C of SNAC7-003

Method of Delivery: PUP

Relinquished By (Sign):	Received by Driver/Depot: BHomenick	Received at Lab: BTem	Verified By: BHomenick
Relinquished By (Print): Cameron McCann	Date/Time: 19 Sept 19 1300	Date/Time: 09/20/19 12:03	Date/Time: 19Sept19
Date/Time: Sept 19/19 - 9am	Temperature: 9 °C	Temperature: 9.3 °C	pH Verified [ ] By: NT

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Certificate of Analysis

Wood Environment & Infrastructure (Thorold)

3300 Merrittville Hwy, Unit 5
Thorold, ON L2V 4Y6
Attn: Kelly Patterson

Client PO:
Project: SCT196351/2000 - 9015 Stanley
Custody: 48444/485

Report Date: 30-Sep-2019
Order Date: 18-Sep-2019

Revised Report **Order #: 1938513**

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1938513-01	TP101-1
1938513-02	TP102-1
1938513-03	TP103-1
1938513-04	TP104-1
1938513-05	TP105-1
1938513-06	TP106-2
1938513-07	TP107-1
1938513-08	Dup AD
1938513-09	Dup AG
1938513-10	TP103-2

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: Wood Environment & Infrastructure (Thorold)
Client PO:

Report Date: 30-Sep-2019
Order Date: 18-Sep-2019
Project Description: SCT196351/2000 - 9015 Stanley

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	23-Sep-19	24-Sep-19
Conductivity	MOE E3138 - probe @25 °C, water ext	24-Sep-19	24-Sep-19
Metals, ICP-MS	EPA 6020 - Digestion - ICP-MS	23-Sep-19	23-Sep-19
PCBs, total	SW846 8082A - GC-ECD	20-Sep-19	23-Sep-19
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	24-Sep-19	24-Sep-19
PHC F1	CWS Tier 1 - P&T GC-FID	23-Sep-19	24-Sep-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	20-Sep-19	23-Sep-19
SAR	Calculated	23-Sep-19	23-Sep-19
Solids, %	Gravimetric, calculation	20-Sep-19	20-Sep-19

Certificate of Analysis

Report Date: 30-Sep-2019

Client: Wood Environment & Infrastructure (Thorold)

Order Date: 18-Sep-2019

Client PO:

Project Description: SCT196351/2000 - 9015 Stanley

	Client ID:	TP101-1	TP102-1	TP103-1	TP104-1
	Sample Date:	17-Sep-19 11:25	17-Sep-19 11:25	17-Sep-19 12:15	17-Sep-19 12:35
	Sample ID:	1938513-01	1938513-02	1938513-03	1938513-04
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	81.2	76.1	89.4	86.2
General Inorganics					
SAR	0.01 N/A	-	-	0.80	-
Conductivity	5 uS/cm	-	-	635	1340
pH	0.05 pH Units	-	-	7.63	-
Metals					
Antimony	1 ug/g dry	-	-	<1	<1
Arsenic	1 ug/g dry	-	-	6	6
Barium	1 ug/g dry	-	-	117	96
Beryllium	0.5 ug/g dry	-	-	0.9	0.7
Boron	5.0 ug/g dry	-	-	10.9	11.8
Cadmium	0.5 ug/g dry	-	-	<0.5	<0.5
Chromium	5 ug/g dry	-	-	27	27
Cobalt	1 ug/g dry	-	-	12	10
Copper	5 ug/g dry	-	-	23	28
Lead	1 ug/g dry	-	-	19	32
Molybdenum	1 ug/g dry	-	-	<1	<1
Nickel	5 ug/g dry	-	-	25	24
Selenium	1 ug/g dry	-	-	<1	<1
Silver	0.3 ug/g dry	-	-	<0.3	<0.3
Thallium	1 ug/g dry	-	-	<1	<1
Uranium	1 ug/g dry	-	-	<1	<1
Vanadium	10 ug/g dry	-	-	36	32
Zinc	20 ug/g dry	-	-	68	120
PCBs					
PCBs, total	0.05 ug/g dry	<0.05	<0.05	-	-
Decachlorobiphenyl	Surrogate	95.6%	90.0%	-	-

PARACEL LABORATORIES LTD.

Order #: 1938513

Certificate of Analysis

Report Date: 30-Sep-2019

Client: Wood Environment & Infrastructure (Thorold)

Order Date: 18-Sep-2019

Client PO:

Project Description: SCT196351/2000 - 9015 Stanley

	Client ID:	TP105-1	TP106-2	TP107-1	Dup AD
	Sample Date:	17-Sep-19 12:55	17-Sep-19 13:30	17-Sep-19 14:00	17-Sep-19 00:00
	Sample ID:	1938513-05	1938513-06	1938513-07	1938513-08
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	86.1	88.1	83.9	81.2
General Inorganics					
SAR	0.01 N/A	0.39	-	-	-
Conductivity	5 uS/cm	259	-	676	-
pH	0.05 pH Units	7.55	-	-	-
Metals					
Antimony	1 ug/g dry	<1	<1	<1	-
Arsenic	1 ug/g dry	5	5	7	-
Barium	1 ug/g dry	91	79	137	-
Beryllium	0.5 ug/g dry	0.7	0.6	1.1	-
Boron	5.0 ug/g dry	9.5	9.1	8.7	-
Cadmium	0.5 ug/g dry	<0.5	<0.5	<0.5	-
Chromium	5 ug/g dry	24	18	30	-
Cobalt	1 ug/g dry	11	10	12	-
Copper	5 ug/g dry	18	18	25	-
Lead	1 ug/g dry	9	10	15	-
Molybdenum	1 ug/g dry	<1	<1	<1	-
Nickel	5 ug/g dry	22	21	25	-
Selenium	1 ug/g dry	<1	<1	<1	-
Silver	0.3 ug/g dry	<0.3	<0.3	<0.3	-
Thallium	1 ug/g dry	<1	<1	<1	-
Uranium	1 ug/g dry	<1	<1	<1	-
Vanadium	10 ug/g dry	37	27	42	-
Zinc	20 ug/g dry	47	45	87	-
Volatiles					
Benzene	0.02 ug/g dry	<0.02	-	-	-
Ethylbenzene	0.05 ug/g dry	<0.05	-	-	-
Toluene	0.05 ug/g dry	<0.05	-	-	-
m,p-Xylenes	0.05 ug/g dry	<0.05	-	-	-
o-Xylene	0.05 ug/g dry	<0.05	-	-	-
Xylenes, total	0.05 ug/g dry	<0.05	-	-	-
Toluene-d8	Surrogate	109%	-	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	-	-	-
F2 PHCs (C10-C16)	4 ug/g dry	<4	-	-	-

Certificate of Analysis

Client: Wood Environment & Infrastructure (Thorold)

Client PO:

Report Date: 30-Sep-2019

Order Date: 18-Sep-2019

Project Description: SCT196351/2000 - 9015 Stanley

	Client ID:	TP105-1	TP106-2	TP107-1	Dup AD
	Sample Date:	17-Sep-19 12:55	17-Sep-19 13:30	17-Sep-19 14:00	17-Sep-19 00:00
	Sample ID:	1938513-05	1938513-06	1938513-07	1938513-08
	MDL/Units	Soil	Soil	Soil	Soil
F3 PHCs (C16-C34)	8 ug/g dry	<8	-	-	-
F4 PHCs (C34-C50)	6 ug/g dry	<6	-	-	-
PCBs					
PCBs, total	0.05 ug/g dry	-	-	-	<0.05
Decachlorobiphenyl	Surrogate	-	-	-	98.0%

Certificate of Analysis

Report Date: 30-Sep-2019

Client: Wood Environment & Infrastructure (Thorold)

Order Date: 18-Sep-2019

Client PO:

Project Description: SCT196351/2000 - 9015 Stanley

	Client ID:	Dup AG	TP103-2	-	-
	Sample Date:	17-Sep-19 00:00	17-Sep-19 00:00	-	-
	Sample ID:	1938513-09	1938513-10	-	-
	MDL/Units	Soil	Soil	-	-
Physical Characteristics					
% Solids	0.1 % by Wt.	84.1	79.6	-	-
General Inorganics					
SAR	0.01 N/A	0.59	-	-	-
Conductivity	5 uS/cm	378	431	-	-
pH	0.05 pH Units	7.69	-	-	-
Metals					
Antimony	1 ug/g dry	<1	-	-	-
Arsenic	1 ug/g dry	5	-	-	-
Barium	1 ug/g dry	96	-	-	-
Beryllium	0.5 ug/g dry	0.7	-	-	-
Boron	5.0 ug/g dry	10.0	-	-	-
Cadmium	0.5 ug/g dry	<0.5	-	-	-
Chromium	5 ug/g dry	23	-	-	-
Cobalt	1 ug/g dry	10	-	-	-
Copper	5 ug/g dry	18	-	-	-
Lead	1 ug/g dry	11	-	-	-
Molybdenum	1 ug/g dry	<1	-	-	-
Nickel	5 ug/g dry	21	-	-	-
Selenium	1 ug/g dry	<1	-	-	-
Silver	0.3 ug/g dry	<0.3	-	-	-
Thallium	1 ug/g dry	<1	-	-	-
Uranium	1 ug/g dry	<1	-	-	-
Vanadium	10 ug/g dry	34	-	-	-
Zinc	20 ug/g dry	49	-	-	-
Volatiles					
Benzene	0.02 ug/g dry	<0.02	-	-	-
Ethylbenzene	0.05 ug/g dry	<0.05	-	-	-
Toluene	0.05 ug/g dry	<0.05	-	-	-
m,p-Xylenes	0.05 ug/g dry	<0.05	-	-	-
o-Xylene	0.05 ug/g dry	<0.05	-	-	-
Xylenes, total	0.05 ug/g dry	<0.05	-	-	-
Toluene-d8	Surrogate	106%	-	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	-	-	-
F2 PHCs (C10-C16)	4 ug/g dry	<4	-	-	-

Certificate of Analysis

Report Date: 30-Sep-2019

Client: Wood Environment & Infrastructure (Thorold)

Order Date: 18-Sep-2019

Client PO:

Project Description: SCT196351/2000 - 9015 Stanley

	Client ID:	Dup AG	TP103-2	-	-
	Sample Date:	17-Sep-19 00:00	17-Sep-19 00:00	-	-
	Sample ID:	1938513-09	1938513-10	-	-
	MDL/Units	Soil	Soil	-	-
F3 PHCs (C16-C34)	8 ug/g dry	<8	-	-	-
F4 PHCs (C34-C50)	6 ug/g dry	<6	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Conductivity	ND	5	uS/cm						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Metals									
Antimony	ND	1	ug/g						
Arsenic	ND	1	ug/g						
Barium	ND	1	ug/g						
Beryllium	ND	0.5	ug/g						
Boron	ND	5.0	ug/g						
Cadmium	ND	0.5	ug/g						
Chromium	ND	5	ug/g						
Cobalt	ND	1	ug/g						
Copper	ND	5	ug/g						
Lead	ND	1	ug/g						
Molybdenum	ND	1	ug/g						
Nickel	ND	5	ug/g						
Selenium	ND	1	ug/g						
Silver	ND	0.3	ug/g						
Thallium	ND	1	ug/g						
Uranium	ND	1	ug/g						
Vanadium	ND	10	ug/g						
Zinc	ND	20	ug/g						
PCBs									
PCBs, total	ND	0.05	ug/g						
Surrogate: Decachlorobiphenyl	*0.103*		*ug/g*		*103*	*60-140*			
Volatiles									
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	*2.58*		*ug/g*		*80.5*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	ND	0.01	N/A	ND				200	
Conductivity	880	5	uS/cm	894			1.5	5	
pH	8.63	0.05	pH Units	8.70			0.8	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND				40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND				30	
F3 PHCs (C16-C34)	ND	8	ug/g dry	ND				30	
F4 PHCs (C34-C50)	ND	6	ug/g dry	ND				30	
Metals									
Antimony	ND	1	ug/g dry	ND			0.0	30	
Arsenic	6.0	1	ug/g dry	5.5			8.7	30	
Barium	84.9	1	ug/g dry	84.0			1.0	30	
Beryllium	0.74	0.5	ug/g dry	0.71			4.2	30	
Boron	9.1	5.0	ug/g dry	8.5			7.0	30	
Cadmium	ND	0.5	ug/g dry	ND			0.0	30	
Chromium	22.7	5	ug/g dry	22.2			2.5	30	
Cobalt	10.0	1	ug/g dry	9.6			3.7	30	
Copper	30.1	5	ug/g dry	28.1			6.6	30	
Lead	27.1	1	ug/g dry	25.4			6.6	30	
Molybdenum	ND	1	ug/g dry	ND			0.0	30	
Nickel	21.7	5	ug/g dry	20.4			6.6	30	
Selenium	ND	1	ug/g dry	ND			0.0	30	
Silver	ND	0.3	ug/g dry	ND			0.0	30	
Thallium	ND	1	ug/g dry	ND			0.0	30	
Uranium	ND	1	ug/g dry	ND			0.0	30	
Vanadium	29.6	10	ug/g dry	28.6			3.4	30	
Zinc	131	20	ug/g dry	97.9			28.7	30	
PCBs									
PCBs, total	ND	0.05	ug/g dry	ND				40	
Surrogate: Decachlorobiphenyl	*0.129*		*ug/g dry*		*110*	*60-140*			
Physical Characteristics									
% Solids	82.1	0.1	% by Wt.	81.2			1.1	25	
Volatiles									
Benzene	ND	0.02	ug/g dry	ND				50	
Ethylbenzene	ND	0.05	ug/g dry	ND				50	
Toluene	ND	0.05	ug/g dry	ND				50	
m,p-Xylenes	ND	0.05	ug/g dry	ND				50	
o-Xylene	ND	0.05	ug/g dry	ND				50	
Surrogate: Toluene-d8	*3.80*		*ug/g dry*		*106*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	191	7	ug/g		95.5	80-120			
F2 PHCs (C10-C16)	94	4	ug/g	ND	101	60-140			
F3 PHCs (C16-C34)	229	8	ug/g	ND	101	60-140			
F4 PHCs (C34-C50)	127	6	ug/g	ND	88.0	60-140			
Metals									
Antimony	49.5		ug/L	ND	98.9	70-130			
Arsenic	53.0		ug/L	2.2	102	70-130			
Barium	88.7		ug/L	33.6	110	70-130			
Beryllium	46.3		ug/L	ND	92.1	70-130			
Boron	45.4		ug/L	ND	84.0	70-130			
Cadmium	48.6		ug/L	ND	96.9	70-130			
Chromium	61.1		ug/L	8.9	105	70-130			
Cobalt	54.3		ug/L	3.8	101	70-130			
Copper	58.7		ug/L	11.3	94.8	70-130			
Lead	57.7		ug/L	10.1	95.1	70-130			
Molybdenum	48.9		ug/L	ND	97.4	70-130			
Nickel	59.2		ug/L	8.1	102	70-130			
Selenium	54.2		ug/L	ND	108	70-130			
Silver	44.2		ug/L	ND	88.4	70-130			
Thallium	45.6		ug/L	ND	91.0	70-130			
Uranium	46.9		ug/L	ND	93.3	70-130			
Vanadium	64.3		ug/L	11.4	106	70-130			
Zinc	88.9		ug/L	39.2	99.4	70-130			
PCBs									
PCBs, total	0.519	0.05	ug/g	ND	110	60-140			
Surrogate: Decachlorobiphenyl	*0.133*		*ug/g*		*113*	*60-140*			
Volatiles									
Benzene	3.48	0.02	ug/g		87.1	60-130			
Ethylbenzene	4.48	0.05	ug/g		112	60-130			
Toluene	4.67	0.05	ug/g		117	60-130			
m,p-Xylenes	8.74	0.05	ug/g		109	60-130			
o-Xylene	4.37	0.05	ug/g		109	60-130			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

Revision 1 - This report includes additional parameter data.

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

PARACE LABORATORIES L

Paracel ID: 1938513

Head Office
300-2319 St. Laurent Blvd.
Ottawa, Ontario K1G 4J8
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e: paracel@paracellabs.com

Chain of Custody
(Lab Use Only)
№ 48444

Page 1 of 2

Client Name: Wood E&I Solutions	Project Reference: SCT196351/2000 - 9015 Stanley	**Turnaround Time:**
Contact Name: Kelly Patterson	Quote #: 19-010	☐ 1 Day ☐ 3 Day
Address: 3300 Merritville Hwy, Unit 5, Thorold ON L2V 4Y6	PO #:	☐ 2 Day ☒ Regular
Telephone: 905-687-6616	Email Address: kelly.patterson@woodplc.com	Date Required:

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 1938513

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PCBs	ICP IHS Metals	EC	SAR	pH	BTEX	PHC (F1-F4)				
1	TP101-1	S		2	Sept 17/19	11:25	X										
2	TP101-2	S		2		11:30											
3	TP102-1	S		2		11:45	X										
4	TP102-2	S		2		11:50											
5	TP103-1	S		2		12:15		X	X	X	X						
6	TP103-2	S		2		12:20											
7	TP104-1	S		2		12:35		X									
8	TP104-2	S		2		12:40											
9	TP105-1	S		2		12:55		X	X	X	X	X	X				
10	TP105-2	S		2		13:10											

Comments: governed by the T/C of SNA07-003
hold all remaining samples for future analysis
Report #2: COC, 48444 and 48445

Method of Delivery: P/U

Relinquished By (Sign):	Received by Driver/Depot: B. Benton (Niagara)	Received at Lab:	Verified By:
Relinquished By (Print): Cameron McCann	Date/Time: Sept 18/19 12:55pm	Date/Time: 19 Sept 19 1400	Date/Time: 9-19-19 1658
Date/Time: Sept 18/19 - 7pm	Temperature: 14°C	Temperature: 16.4 °C	pH Verified: ☐ By:

PARACEL LABORATORIES LTD

Paracel ID: 1938513

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Chain of Custody
(Lab Use Only)
№ 48445

Page 2 of 2

Client Name: Wood E&I Solutions	Project Reference: SCT196351/2000
Contact Name: Kelly Patterson	Quote #: 19-010
Address: 3300 Merritville Hwy, Unit 5, Thorold ON L2V 4Y6	PO #:
Telephone: 905-687-6616	Email Address: kelly.patterson@woodplc.com

Turnaround Time:
☐ 1 Day ☐ 3 Day
☐ 2 Day ☒ Regular
Date Required: _____

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 1938513

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	ICP/MS Metals	EC	SAR	pH	BTEX	PHC (F1-F4)	PCBs				
1	TP106-1	S		2	Sept 17/19	13:25											
2	TP106-2	S		2		13:30	X										
3	TP106-3	S		2		13:35											
4	TP107-1	S		2		14:00	X										
5	TP107-2	S		2		14:05											
6	Dup AD	S		2									X				
7	Dup AE	S		2													
8	Dup AF	S		2													
9	Dup AG	S		2			X	X	X	X	X	X					
10	Dup AH	S		2													

Comments: please see Page #1

Report #2: COCs 48444 + 48445

Method of Delivery: P/U

Relinquished By (Sign):	Received by Driver/Depot: R. Boyton (Niagara)	Received at Lab:	Verified By:
Relinquished By (Print): Cameron McGaan	Date/Time: Sept 18/19 12:55pm	Date/Time: 19 Sept 19 1400	Date/Time: 9-19-19 1855
Date/Time: Sept 18/19 - 12pm	Temperature: 16°C	Temperature: 16.4 °C	pH Verified ☐ By:

APPENDIX D

LIMITATIONS

LIMITATIONS

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:

   (a) The Standard Terms and Conditions which form a part of Wood's proposal and authorization to proceed, dated July 11, 2019, signed by the Client on July 17, 2019;

   (b) The Scope of Services;

   (c) Time and Budgetary limitations as described in our Contract; and,

   (d) The Limitations stated herein.

2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.

3. The conclusions presented in this report were based, in part, on visual observations of the site and attendant structures. Our conclusions cannot and are not extended to include those portions of the site or structures which were not reasonably available, in Wood's opinion, for direct observation.

4. The environmental conditions at the site were assessed, within the limitations set out above, having due regard for applicable environmental regulations as of the date of the inspection. A review of compliance by past owners or occupants of the site with any applicable local, provincial or federal by-laws, orders-in-council, legislative enactments and regulations was not performed.

5. The site history research included obtaining information from third parties and employees or agents of the owner. No attempt has been made to verify the accuracy of any information provided, unless specifically noted in our report.

6. Where testing was performed, it was carried out in accordance with the terms of our contract providing for testing. Other substances, or different quantities of substances testing for, may be present on site and may be revealed by different of other testing not provided for in our contract.

7. Because of the limitations referred to above, different environmental conditions from those stated in our report may exist. Should such different conditions be encountered, Wood must be notified in order that it may determine if modifications to the conclusions in the report are necessary.

8. The utilization of Wood's services during the implementation of any remedial measures will allow Wood to observe compliance with the conclusions and recommendations contained in the report. Wood's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.

9. This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or in part, or any reliance thereon, or decisions made based on any information of conclusions in the report, is the sole responsibility of such third party. Wood accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.

10. This report is not to be given over to any third party for any purpose whatsoever without the written permission of Wood.

11. Provided that the report is still reliable, and less than 12 months old, Wood will issue a third-party reliance letter to parties Client identifies in writing, upon payment of the then current fee for such letters. All third parties relying on Wood's report, by such reliance agree to be bound by our proposal and Wood's standard reliance letter. Wood's standard reliance letter indicates that in no event shall Wood be liable for any damages, howsoever arising, relating to third-party reliance on Wood's report. No reliance by any party is permitted without such agreement.