PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

PART 1 ON THE SURVEY AND BEING PART OF BLOCK G REGISTERED PLAN M-81
1600 KERNS ROAD
BURLINGTON, ONTARIO

WATTERS ENVIRONMENTAL GROUP INC.

CONFIDENTIAL

PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

PART 1 ON THE SURVEY AND BEING PART OF BLOCK G REGISTERED PLAN M-81 1600 KERNS ROAD BURLINGTON, ONTARIO

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November 2020
Reference No. 19-0087.02.01

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1.0 EXECUTIVE SUMMARY

Watters Environmental Group Inc. (Watters Environmental) was retained by FGL Kerns Inc. to conduct a Phase One Environmental Site Assessment (ESA) of a parcel of land designated as Part 1 on the Survey and being part of Block G Registered Plan M-81 (hereafter the "Phase One Property" or the "Site"), which is part of the larger property located at 1600 Kerns Road, in Burlington, Ontario.

For the purpose of this report, the section of Kerns Road that is located adjacent to the east of the Phase One Property is assumed to be aligned in a north-south direction (relative to "Project North"), although it is actually aligned in a northwest-to-southeast direction (relative to "True North"). Unless otherwise noted, descriptions in this report are relative to Project North.

The Phase One Property is currently owned by FGL and covers an area of approximately 0.55 hectares (1.36 acres). The Phase One Property consists of a multi-tenant commercial building (hereafter the "Site building"), an asphalt-paved parking lot, and an outdoor children's play area. A small portion of the northwest corner of the Site building and the western portion of the outdoor children's play area extends off of the Phase One Property (but within the overall 1600 Kerns Road property). Watters Environmental notes that the remainder of the larger 1600 Kerns Road property (i.e., the western portion) is not included as part of the Phase One Property nor subject to the Phase One ESA. The Phase One Property is accessed from the north via Four Seasons Drive and from the east via Kerns Road.

The remainder of the 1600 Kerns Road property includes a wooded ravine, which includes a portion of Hager Creek. Watters Environmental understands that the ravine up to the top-of-bank will be dedicated to Conservation Halton as part of the proposed redevelopment. In addition, Watters Environmental understands that no development can be conducted on a 7.5-metre setback from the top-of-bank to the west property line of the Phase One Property.

Based on the data provided, the Phase One Property was first used as rural agricultural lands in the late 18th century when it was transferred from the Crown to Joseph Brant as part of a 1,396-hectare (3,450-acre) block of land on February 14, 1798. The Phase One Property consisted of forested and/or agricultural lands until development in the 1970s.

Since development, the Phase One Property has been comprised of a multi-tenant commercial plaza (i.e., with a small portion of the northwest corner of the Site building extending off the Phase One Property), an asphalt paved parking lot, and the majority of an outdoor children's play area. The Site building is currently occupied by a kitchen/bathroom renovation store, a fitness centre, a bakery, a hair salon, and a children's daycare.

Watters Environmental understands that the Phase One Property is planned to be redeveloped to a multi-unit residential retirement property and a Record of Site Condition (RSC) is required for that process. As such, the Phase One ESA was conducted in accordance with Ontario Regulation (O. Reg.) 153/04 (i.e., Records of Site Condition – Part XV.1 of the Act, made under the Ontario Environmental Protection Act, R.S.O. 1990), as amended (hereafter referred to as "O. Reg. 153/04").

According to information provided by Gardiner Roberts LLP to Watters Environmental, the legal description for the Phase One Property is summarized as follows:

- Part 1 on the Survey and being part of Block G Registered Plan M-81.

The Property Identification Number (PIN) for the Phase One Property is summarized as follows:

- PIN 07127-0305 (LT)

The purpose of the Phase One ESA was to provide FGL with an evaluation of known and potential environmental contaminant issues at the Phase One Property resulting from current and/or historical activities conducted at the Phase One Property and/or neighbouring properties in accordance with the requirements of O. Reg. 153/04.

The Phase One ESA involved: a review of previous reports; a review of historical information related to the Phase One Property and surrounding area; a review of information in publicly-available regulatory databases regarding the Phase One Property and surrounding area; a walk-through reconnaissance of the Phase One Property on August 21, 2019; interviews with representatives of the Phase One Property; observations of activities on properties within 250 metres from the boundaries of the Phase One Property (i.e., the "Phase One Study Area"); and preparation of a report summarizing Watters Environmental's findings and recommendations.

Based on the Phase One ESA completed, it is Watters Environmental's opinion that there are potentially contaminating activities (PCAs) from historical or current operations on the Phase One Property and off-Site within the Phase One Study Area, as defined in O. Reg. 153/04 (or deemed to be potential concerns by Watters Environmental's Qualified Person), and therefore, there would be areas of potential environmental concern (APECs) on the Phase One Property.

Two on-Site PCAs were identified on the Phase One Property, and one off-Site PCA was identified within the Phase One Study Area. These PCAs result in APECs are on the Phase One Property and are summarized as follows:

PCA	APEC	Location of Activity	Table 2 PCA No. & Description*	Discussion
1A	1A	On-Site, located on the north-central portion of the Phase One Property	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use biosoils as soil conditioners	A closed landfill is present on the north-central portion of the Phase One Property. The fill material consists of re-worked clayey silt soil with solid waste debris, such as glass, brick, ceramics and ash. No visual or olfactory evidence of hydrocarbon or solvent impacts or decomposable organic wastes were identified in Exp's boreholes drilled within the landfill area. The presence of a landfill is considered a PCA that represents an APEC on the north-central portion of the Phase One Property.
1B	1B	Off-Site, located north of the Phase One Property (across Four Seasons Drive)	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use biosoils as soil conditioners	A closed landfill is present north of the Phase One Property (across Four Seasons Drive), in an inferred transgradient direction. This is part of the landfill on the Phase One Property. The presence of a landfill is considered a PCA that represents an APEC on the north-central portion of the Phase One Property. Note that the landfill document provided by the MECP indicated that methane gas testing conducted in boreholes and within residential homes confirmed that methane was not detected.

PCA	APEC	Location of Activity	Table 2 PCA No. & Description*	Discussion
2	2	On-Site, located on the south-central portion of the Phase One Property	#55 – Transformer Manufacturing, Processing and Use	A pad-mounted transformer is located on the south-central portion of the Phase One Property. The appearance and relatively good condition of this transformer suggests that it may have been installed at some point after 1980, when PCBs were banned from electrical equipment. However, the original transformer installed when the 1600 Kerns Road property was developed in 1975 may have contained PCBs. The presence of a pad-mounted transformer is considered a PCA that represents an APEC on the south-central portion of the Phase One Property.

* Ontario Regulation 153/04, as amended, Records of Site Condition – Part XV.1 of the Act, Table 2: Potentially Contaminating Activities

Based on the PCAs identified in current and historical activities at the Phase One Property and on nearby neighbouring properties within the Phase One Study Area, and the APECs that they represent, completion of a Phase Two ESA, including soil and groundwater sampling and analyses, will be required before a Record of Site Condition can be submitted, as per O. Reg. 153/04.

2.0 INTRODUCTION

2.1 Phase One Property Information

Watters Environmental Group Inc. (Watters Environmental) was retained by FGL Kerns Inc. (FGL) to conduct a Phase One Environmental Site Assessment (ESA) of a parcel of land designated as Part 1 on the Survey and being part of Block G Registered Plan M-81 (hereafter the "Phase One Property" or the "Site"; see Figure 1), which is part of the larger property located at 1600 Kerns Road, in Burlington, Ontario.

For the purpose of this report, the section of Kerns Road that is located adjacent to the east of the Phase One Property is assumed to be aligned in a north-south direction (relative to "Project North"), although it is actually aligned in a northwest-to-southeast direction (relative to "True North"). Unless otherwise noted, descriptions in this report are relative to Project North.

The Phase One Property is located on the southwest corner of the intersection of Kerns Road and Four Seasons Drive, in an area of mixed commercial, community, and residential land uses (see Figure 2).

The Phase One Property is currently owned by FGL and covers an area of approximately 0.55 hectares (1.36 acres). The Phase One Property consists of a multi-tenant commercial building (hereafter the "Site building"; see Photograph 1), an asphalt-paved parking lot (see Photograph 2), and an outdoor children's play area (see Photograph 3). A small portion of the northwest corner of the Site building and the western portion of the outdoor children's play area extends off of the Phase One Property (but within the overall 1600 Kerns Road property). Watters Environmental notes that the remainder of the larger 1600 Kerns Road property (i.e., the western portion) is not included as part of the Phase One Property and not subject of the Phase One ESA. The Phase One Property is accessed from the north via Four Seasons Drive and from the east via Kerns Road.

The remainder of the 1600 Kerns Road property includes a wooded ravine, which includes a portion of Hager Creek. Watters Environmental understands that the ravine up to the top-of-bank will be dedicated to Conservation Halton as part of the proposed redevelopment. In addition, Watters Environmental understands that no development can be conducted on a 7.5-metre setback from the top-of-bank to the west property line of the Phase One Property.

A layout of the Phase One Property and the remainder of the larger 1600 Kerns Road property, which is not included in the Phase One Property, is shown on Figure 3.

Based on the data provided, the Phase One Property was first used as rural agricultural lands in the late 18th century when it was transferred from the Crown to Joseph Brant as part of a 1,396-hectare (3,450-acre) block of land on February 14, 1798. The Phase One Property consisted of forested and/or agricultural lands until development in the 1970s.

Since development, the Phase One Property has been comprised of a multi-tenant commercial plaza (i.e., with a small portion of the northwest corner of the Site building extending off the Phase One Property), an asphalt paved parking lot, and the majority of an outdoor children's play area. The Site building is currently occupied by a kitchen/bathroom renovation store, a fitness centre, a bakery, a hair salon, and a children's daycare.

Watters Environmental understands that the Phase One Property is planned to be redeveloped to a multi-unit residential retirement property and a Record of Site Condition (RSC) is required for that process. As such, the Phase One ESA was conducted in accordance with Ontario Regulation (O. Reg.) 153/04 (i.e., Records of Site Condition – Part XV.1 of the Act, made under the Ontario Environmental Protection Act, R.S.O. 1990), as amended (hereafter referred to as "O. Reg. 153/04").

According to information provided by Gardiner Roberts LLP to Watters Environmental, the legal description for the Phase One Property is summarized as follows:

- Part 1 on the Plan of Survey Prepared by J.D. Barnes Limited and dated April 2, 2020, and being part of Block G Registered Plan M-81.

The PIN for the Phase One Property is summarized as follows:

- PIN 07127-0305 (LT).

The geo-referencing coordinates for the approximate centre of the Phase One Property are summarized as follows:

- Latitude/Longitude: 43˚20′26.34″North, 79˚50′17.63" West; and
- Universal Transverse Mercator (UTM) Coordinates: 594169.61 m E 4799299.69 m N.

Watters Environmental was retained by FGL to conduct the Phase One ESA. At the time of the Phase One ESA, the contact information for the project sponsor is as follows:

Mr. Noam Jakubovic
Director
FGL Kerns Inc.
5400 Yonge Street, Suite 300
Toronto, Ontario
M2N 5R5
Phone Number: (416) 221-3335
noamj@fieldgateproperties.com

3.0 SCOPE OF INVESTIGATION

Watters Environmental understands that the City of Burlington requires an RSC for the redevelopment of the Phase One Property into a multi-unit residential retirement property. As such, the purpose of the Phase One ESA was to provide FGL with an evaluation of known and/or potential environmental contaminant issues at the Phase One Property resulting from current and/or historical activities conducted at the Phase One Property and/or neighbouring properties in accordance with the requirements of O. Reg. 153/04.

Watters Environmental's scope of work for the Phase One ESA involved the following:

- Reviewing previous reports;
- Reviewing available records pertaining to the current and past uses of the Phase One Property and surrounding properties wholly or partly located within 250 metres from the boundaries of the Phase One Property (the "Phase One Study Area"), as well as any properties outside 250 metres, if determined to be part of the Phase One Study Area;
- Interviewing available persons knowledgeable about the current and/or past activities at the Phase One Property;
- Reviewing a chain-of-title search completed for the Phase One Property;
- Conducting a walk-through visual reconnaissance of the Phase One Property and making observations of activities on properties within the Phase One Study Area from publicly accessible locations;
- Completing an evaluation of the information gathered from the records review, interviews and reconnaissance of the Phase One Property and Phase One Study Area;
- Preparing a report summarizing Watters Environmental's findings and recommendations; and
- Submitting the Phase One ESA report to the owner of the Phase One Property.

Watters Environmental's findings from a review of available records are provided in Section 4.0. A summary of interview findings is presented in Section 5.0. Findings from the reconnaissance of the Phase One Property and Phase One Study Area appear in Section 6.0. Watters Environmental's review and evaluation of the information gathered during the Phase One ESA is presented in Section 7.0. The conclusions of the Phase One ESA are provided in Section 8.0. A list of references and other sources of information for the Phase One ESA report is provided in Section 9.0. The qualifications and limitations of the Phase One ESA are provided in Section 10.0. Figures illustrating the Phase One Property characteristics and environmental issues discussed in the report are provided in the figure section of the report. Photographs showing select features of the Phase One Property are provided in Appendix A.

4.0 RECORDS REVIEW

4.1 General

4.1.1 Phase One ESA Study Area Determination

In accordance with O. Reg. 153/04, Watters Environmental considered the Phase One Study Area to include the Phase One Property, and any property that is located wholly or partly within 250 metres from the boundaries of the Phase One Property. This area roughly extends to include residential properties on the north side of Four Seasons Drive to the residential properties on the east and west sides of Kerns Road to the north; residential properties on the east side of Kerns Road to the residential properties on Brookbridge Drive to the east, and a portion of a large commercial property (i.e., majority of it is green space with the Phase One Study Area) to the southeast; residential properties adjacent to the south to a church at approximately 250 metres to the south; and non-developable portions adjacent to the west and a ravine and a portion of Hager Creek (i.e., remainder of the larger 1600 Kerns Road property) to the residential properties on the east side of Crofton Way to the west (see Figure 2). A Plan of Survey for the Phase One Property is provided in Appendix B.

The Phase One Property is situated at an elevation of approximately 130 metres above mean sea level (mamsl), on average, and slopes down to the south and to the west towards Hager Creek approximately 20 metres west of the western boundary of the Phase One Property.

The surrounding properties to the east are at a relatively similar grade with the Phase One Property. Properties to the north of the Phase One Property are generally at a higher elevation than the Phase One Property, and properties to the south of the Phase One Property are generally at a lower elevation than the Phase One Property. The land to the west of the Phase One Property (i.e., the ravine on the larger part of the 1600 Kerns Road property) is at a much lower elevation, as it slopes down into Hager Creek.

Watters Environmental infers that the near-surface groundwater at the Phase One Property flows to the west, following the local topographic gradient towards Hager Creek located approximately 20 metres west the of the western boundary of the Phase One Property. As such, the lands to the north and south are inferred to be transgradient, the lands to the east are inferred to be upgradient, and the properties adjacent to the west (i.e., remainder of 1600 Kerns Road property) are inferred downgradient. The properties to the west (i.e., west of Hager Creek) are not considered to be hydraulically connected to the Phase One Property since they are situated on the opposite side of the creek. No specific environmental issues of concern were identified on properties beyond 250 metres to the east of the Phase One Property (i.e., in the inferred up-gradient direction).

Therefore, it was Watters Environmental's opinion that properties located further than 250 metres from the nearest point on a boundary of the Phase One Property should not be included in the Phase One Study Area.

4.1.2 First Developed Use Determination

Watters Environmental retained Ms. Lisa Leva (title search specialist), of Toronto, Ontario to conduct a title search back to at least 1875 (i.e., it was actually searched back to 1798), as required by O. Reg. 153/04. Based on the data provided, the Phase One Property was registered under the Crown until it was transferred to Joseph Brant on February 14, 1798. Note that there were no Fire Insurance Plans (FIPs) available for review.

Watters Environmental supplemented the chain-of-title review by assessing other available historical records, including aerial photographs, and street directories, etc. (where available). Based on a review of these records and documents, it appears that the Phase One Property was first used as rural agricultural land in the early 18th century and was part of a larger 1,396-hectare property. The Phase One Property consisted of agricultural lands until development in the 1970s. Since development, the Phase One Property has been comprised of a multi-tenant commercial building (with the a small portion of the northwest corner of the of the building extending off the Phase One Property), an asphalt-paved parking lot, and the majority of an outdoor children's play area. The Site building is currently occupied by a kitchen/bathroom renovation store, a fitness centre, a bakery, a hair salon, and a children's daycare.

4.1.3 Fire Insurance Plans

Watters Environmental contacted Opta Information Intelligence (Opta) in Markham, Ontario to request FIPs available from their database showing the Phase One Study Area. No FIPs were available for review for the Phase One Property or Phase One Study Area.

In addition, Watters Environmental reviewed the McMaster University Digital Archives for FIPs. Watters Environmental notes that FIPs were available for review for Burlington; however, none of the FIPs provided coverage of the Phase One Property or Phase One Study Area.

4.1.4 Chain-of-Title Review

As noted, Watters Environmental retained Ms. Lisa Leva to conduct a chain-of-title review, in order to determine historical ownership of the Phase One Property. The chain-of-title search was completed for the larger property located at 1600 Kerns Road (PIN 07127-0305) which contains the Phase One Property.

The findings of the chain-of-title search are summarized in Table 1 below. Note that the information provided in the header of the tables includes the original legal descriptions since these were used during the chain-of-title search.

Table 1: Chain of Title Review

1600 Kerns Road PIN 07127-0305 (LT) [Previously known as Lot 11 and Part Lot 5, Plan 99; originally known as Lot 11, Plan 99, Brant's Block, Township of Nelson (now City of Burlington)]		
Date	**Description/Details/Ownership**	**Potential Environmental Contaminant Issues?**
Prior to February 14, 1798	Crown	None
February 14, 1798	Transfer from the Crown to Joseph Brant	None
March 22, 1808	Transfer from Joseph Brant to Michael Groat	None
May 11, 1833	William J. Farr	None
October 8, 1844	Michael Groat	None
August 15, 1846	James Coyovers	None
April 17, 1850	Gilbert Davis	None
December 18, 1851	George Ghent	None
August 2, 1883	Transfer to the Legatees of George Ghent (Harry Ghent, Henry Ghent, and Nicholas Joshua Kerns)	None
September 2, 1899	Harry Ghent	None
November 6, 1899	Nicholas Joshua Kerns	None
November 13, 1907	Leslie Kerns	None
March 29, 1963	Transfer from William Leslie Kerns to G.H. Mooradian Limited	None
August 16, 1968	Saz Construction Limited	None

Table 1: Chain of Title Review (Continued)

1600 Kerns Road PIN 07127-0305 (LT) [Previously known as Lot 11 and Part Lot 5, Plan 99; originally known as Lot 11, Plan 99, Brant's Block, Township of Nelson (now City of Burlington)]		
Date	**Description/Details/Ownership**	**Potential Environmental Contaminant Issues?**
November 30, 1971	Chalfonte Investments Limited	None
May 20, 1975	Belcan Investments Incorporated	None
June 30, 1976	Pogos Investments Limited	None
May 31, 2019	FGL Kerns Inc.	None

Based on the information provided in the chain-of-title, no potentially contaminating activities (PCAs) or areas of potential environmental concern (APECs) were identified on the Phase One Property.

4.1.5 Environmental Reports

The following previous environmental reports, prepared for the larger property located at 1600 Kerns Road which contains the Phase One Property, were reviewed by Watters Environmental:

- "*DRAFT Phase I Environmental Site Assessment, 1600 Kerns Road, Burlington, ON",* prepared by Exp Services Inc. (Exp) for Fieldgate Properties Limited (Fieldgate), dated September 7, 2018 (the "September 2018 Exp Phase I ESA Report");

- "*Slope Stability Analysis, Proposed Residential Redevelopment, 1600 Kerns Road, City of Burlington, Ontario*", prepared by Exp for Fieldgate, dated October 18, 2018 (the "October 2018 Exp Slope Stability Report");

- "*Chemical Testing, 1600 Kerns Road, Burlington, Ontario*", prepared by Exp for Fieldgate, dated November 2, 2018 (the "November 2018 Exp Chemical Testing Report"); and

- "*DRAFT Environmental Subsurface Investigation, 1600 Kerns Road, Burlington, Ontario*", prepared by Exp for Fieldgate, dated December 12, 2018 (the "December 2018 Exp ESI Report").

Portions of the report that were made available for review to Watters Environmental have been referenced or incorporated in this report as necessary. Watters Environmental has not been given authorization to rely on these reports by the firm that prepared them. The information provided below is a summary of their findings. Watters Environmental has provided interpretation within the context of this assessment but has not independently verified the findings.

<u>September 2018 Exp Phase I ESA Report</u>

Based on a review of this report, Watters Environmental notes the following:

- Exp was retained by Fieldgate to conduct a Phase I ESA of the entire property at 1600 Kerns Road, which included the Phase One Property;
- The 1600 Kerns Road property was noted to be located at the southwest corner of the intersection of Kerns Road and Four Seasons Drive;
- The 1600 Kerns Road property consisted of an irregular-shaped parcel of land, which was developed with one multi-tenant commercial building approximately 1,985 square metres (m^2) in area, and an associated asphalt-paved parking lot. *Watters Environmental notes that the majority of this building (with the exception of a small portion of the northwest corner) is situated within the Phase One Property*;
- Aerial photographs reviewed for the 1600 Kerns Road property indicates that this property consisted of vacant and/or agricultural land, with a ravine on the western portion (i.e., remainder of 1600 Kerns Road property adjacent to the west the Phase One Property) from 1934 to 1951. A rectangular-shaped building similar in configuration to the present-day multi-tenant commercial building on 1600 Kerns Road was developed in 1974;
- Hager Creek, a tributary of Indian Creek, was located west of the Phase One Property;
- Inferred groundwater flow was noted to be south/southwest towards Hager Creek;

- Information provided by the Technical Standards and Safety Authority (TSSA) indicated that the Phase One Property was registered for one active (propane) cylinder exchange;

- Exp noted that the multi-tenant commercial building was occupied by five tenants, namely Evolve Fitness, Kids & Company, Cakes Sweets & Treats, Burlington Premier School of Dance & Music, and a vacant unit (formerly a convenience store). Exp was advised that the convenience store contained a drop-off only dry-cleaning service (i.e., no on-the-premises dry cleaning activities);

- No evidence of aboveground storage tanks (ASTs) or underground storage tanks (USTs) were noted;

- Exp indicated that a significant amount of fill material was not expected to be present in the Phase One Property. *Watters Environmental notes that Exp did not identify the closed landfill on the Site in this report*; and

- Exp concluded that there were potential environmental concerns associated with regulated building materials [i.e., asbestos, lead, mercury, and polychlorinated biphenyl's (PCBs)], and recommended a designated substances survey be conducted.

<u>October 2018 Exp Slope Stability Report</u>

Based on a review of this report, Watters Environmental notes the following:

- Exp conducted the assessment to verify the potential impact on the existing slope along the west property boundary due to construction of a proposed residential redevelopment at the Site;

- Exp drilled 6 boreholes (i.e., BH1 to BH6) in the parking lot area on October 11 and 12, 2018 with a CME 55 drilling rig equipped with solid-stemmed augers. Monitoring wells were installed in BH5 (located on the eastern boundary of the Phase One Property) and BH6 (located west of the Phase One Property and within the non-developable 7.5-metre setback). Exp also advanced 1 borehole at the bottom of the slope within the 1600 Kerns Road property, west of the Phase One Property. *Watters Environmental notes that Boreholes BH1 to BH5 are located within the Phase One Property;*

- With respect to the boreholes drilled within the Phase One Property, fill consisting of reworked clayey silt, some gravel and sand pockets (with glass, brick, and ceramic fragments) was observed in BH1 to a depth of approximately 10.17 metres below ground surface (mbgs). A clayey silt deposit was encountered underneath the fill material in BH1 to a depth of approximately 11.77 mbgs. Shale bedrock was encountered below the clayey silt. Exp encountered groundwater at a depth of 4.82 mbgs in the open hole upon completion of the drilling activities (i.e., no monitoring well was installed in this borehole);

- Boreholes BH2 to BH5 consisted of a clayey still till with sand seams and trace amount of gravel below the asphaltic concrete and granular base to the borehole termination depths of 9.72 to 9.76 mbgs. No indication of waste or deleterious materials were observed in BH2 to BH5. Exp did not observe groundwater in the open holes of BH2, BH4 and BH5 upon completion of the drilling activities. Groundwater was encountered in BH3 at a depth of 8.58 mbgs in the open hole completion of the drilling activities; however, no monitoring well was installed in BH3. Only BH5 was instrumented as a groundwater monitoring well; and

- Exp encountered groundwater in the monitoring well in BH5 at depths 8.47, 7.82 and 6.31 mbgs one day, 4 days, and 5 days later, respectively.

<u>November 2018 Exp Chemical Testing Report</u>

Based on a review of this report, Watters Environmental notes the following:

- Exp was requested to conduct limited chemical testing of the fill and native soils on the Phase One Property;

- The purpose of the soil chemical testing was to determine the quality of the fill and native soils in terms of suitability for re-use and for off-Site disposal;

- The soil testing was conducted as a supplemental program to the above-noted slope stability analysis drilling program;

- Three soil samples were collected from the fill material from boreholes BH1 and BH6 (i.e., samples BH1 SS3, BH1 SS4 and BH6 SS3). *Watters Environmental notes that of these two boreholes, only BH1 was located on the Phase One Property*;

- Five soil samples were collected from the clayey silt till native soils from boreholes BH1, BH2, BH5, and BH6 (i.e., samples BH1 SS4 and SS12, BH2 SS3, BH5 SS2 and BH6 SS3). *Watters Environmental notes that only BH1, BH2, and BH5 are located on the Phase One Property*;

- The soil samples were submitted for analysis of the following parameters:

  - Metals and other regulated parameters (ORPs);

  - Benzene, toluene, ethylbenzene, and xylenes (collectively "BTEX");

  - Petroleum hydrocarbons (PHCs); and

  - Toxicity Characteristic Leaching Procedure (TCLP) for inorganic and polychlorinated biphenyls (PCBs).

- The soil samples were compared to the Ministry of the Environment [now MECP] 2011 Table 3 Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition for Residential / Parkland / Institutional Property Use for Medium to Fine-grained Soils as listed in O. Reg. 153/04 (the "Table 3 SCS"), and the 2011 Table 9 Generic SCS for Use within 30 m of a Water Body in a Non-Potable Groundwater Condition (the "Table 9 SCS"). Exp compared the soil analytical data from BH2 and BH5 to the Table 3 SCS, and compared the data from BH1 (which is within the Phase One Property) and BH6 to the Table 9 SCS;

- The soil results for BH5 SS2 indicated a marginal exceedance of the Table 3 SCS for Electrical Conductivity (EC). All remaining samples and parameters in BH2 and BH5 met the Table 3 SCS;

- The soil results for the fill materials in BH1 (SS3 and SS4) indicated exceedances of the Table 9 SCS for several metals and inorganic parameters, and an EC exceedance in BH6 SS3. All remaining samples and parameters met the Table 9 SCS;

- The results of the soil TCLP analysis met the criteria listed in Schedule 4 of Ontario Regulation 558/00, and the soils were therefore classified as non-hazardous;

- Exp concluded that the soil fill material was not suitable for re-use on the Phase One Property and would require disposal at a registered landfill site licensed to accept such soils; and

- Exp concluded that, subject to additional testing for the EC exceedance to determine if it was an anomaly, the native soils were suitable for re-use on the Phase One Property.

December 2018 Exp ESI Report

Based on a review of this report, Watters Environmental notes the following:

- Exp was retained by Fieldgate to conduct an environmental subsurface investigation (ESI) of the Phase One Property. The ESI was conducted for due diligence purposes. The ESI incorporated laboratory soil testing results from the November 2018 Exp Chemical Testing Report;

- Exp noted that a review of drawings prepared for Chalfonte Investments Ltd., that an area of land filling extended onto the north portion of the 1600 Kerns Road property. The extent of the land was depicted on a plan and profile for Kerns Road, dated November 1971. *Watters Environmental notes that the location of the land filling is located in the north-central portion of the Phase One Property. Watters Environmental reviewed this plan and profile and confirmed Exp's conclusion of the presence of land filling. This landfill would be considered an on-Site PCA on the Phase One Property, which would result in an APEC on the Phase One Property. In addition, this landfill extended to the north of the Phase One Property. This would be considered an off-Site PCA resulting in an APEC on the Phase One Property (i.e., same APEC areas);*

- The scope of work included advancing two boreholes (BH101 and BH102) to approximately 10 mbgs, hand auguring three boreholes (HA1 to HA3) to a maximum depth of 3 mbgs, collecting groundwater samples from two existing monitoring wells (i.e., BH5 and BH6), and collecting three sediment samples (SED1 to SED3) from Upper Hager Creek. In addition, Exp submitted two soil samples from BH1, which was drilled in the geotechnical investigation program (i.e., slope stability analysis). *Watters Environmental notes that BH5 and BH6 were installed as part of a previous Exp geotechnical investigation. Also, as previously noted, the creek is not within the Phase One Property and is west and inferred downgradient of the Phase One Property;*

- All three of the hand augured boreholes (HA1 to HA3) and sediment samples (SED1 to SED3) were located within the larger 1600 Kerns Road property that is not included as part of the Phase One Property. BH6 was located just west of the Phase One Property, within the non-developable 7.5-metre setback. BH101, BH102, and BH5 were located in the parking lot of the Phase One Property;

- Exp noted that the stratigraphy of BH101 and BH102 consisted of a layer of asphalt (0.1 metres thick) underlain by a clayey silt (re-worked) fill to approximately 0.5 to 0.8 mbgs. Landfill material consisting of sand, gravel, glass, brick, ceramics and ash was encountered below the fill in both BH101 and BH102 to a maximum depth of 3.1 mbgs and 5.9 mbgs, respectively. Exp did not identify any visual or olfactory evidence of hydrocarbon or solvent impacts or decomposable organic wastes in the landfill material. Native material consisting of a clayey silt was encountered beneath the landfill material in both BH101 and BH102. Weathered shale was encountered in BH102, beneath the native clayey silt layer, at approximately 9.4 mbgs;

- Exp noted the stratigraphy of all three hand augured samples (HA1 to HA3), which were located on the embankment, consisted of a layer of topsoil to a maximum depth of 0.3 mbgs, underlain by clayey silt fill (likely re-worked soil) between 0.5 to 0.8 mbgs. The fill was underlain by the native clayey silt unit. No landfill materials were encountered in HA1 to HA3. Land fill materials were not encountered in BH6. *Watters Environmental notes that HA1 to HA3 and BH6 were not located within the Phase One Property;*

- Groundwater in BH5 and BH6 were encountered at depths of approximately 3.04 mbgs and 3.55 mbgs, respectively;

- Soil samples from BH101 and BH102 were submitted for analysis of pH, metals and ORPs, polycyclic aromatic hydrocarbons (PAHs), PHCs, and BTEX parameters;

- All sediment samples were submitted for analysis of metal and ORPs, and PAHs;

- Groundwater samples from BH5 and BH6 were submitted for analysis of metals and ORPs, PHCs and BTEX, and PAHs;

- The soil, groundwater, and sediment samples were compared to the Table 9 SCS;

- The soil results indicated exceedances of various metal and ORPs in samples BH101 SS3 and BH102 SS4; and exceedances of various PAHs in BH102 SS4 above the Table 9 SCS. All remaining soil sample parameters met the Table 9 SCS;

- The soil results indicated a marginal exceedance of sodium adsorption ratio (SAR) in soil sample HA2 above the Table 9 SCS. All remaining parameters tested for from HA1 to HA3 met the Table 9 SCS;

- The sediment results indicated exceedance of various metal and inorganic parameters in all three sediment samples (SED1 to SED3). All remaining sediment sample parameters met the Table 9 SCS. Watters Environmental notes that the creek is not part of, and is inferred downgradient, of the Phase One Property;

- All groundwater samples parameters met the Table 9 SCS; and

- Exp recommended that a risk assessment be conducted to address the soil and sediment impacts.

Summary

The previous December 2018 Exp ESI Report indicated the historical presence of a landfill present on the Phase One Property. The PCA associated with this activity is PCA #58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use biosoils as soil conditioners, and contributes to an APEC on the north-central portion of the Phase One Property.

The previous December 2018 Exp ESI Report indicated exceedances of various heavy metals within Hager Creek located to the west of the Phase One Property. Watters Environmental does not consider the concentration of these various heavy metals to be a concern since the creek is not located on, and is inferred downgradient of, the Phase One Property.

4.1.6 Street Directories

Street directories available at Library and Archives Canada, in Ottawa, Ontario, were reviewed for the years 1960, 1965, 1970, 1975, 1980, 1985, 1990, 1995, 2000, 2005, and 2011 for the following addresses:

- 1375, 1500-1690 Kerns Road (1375 – Address not listed for years 1960, 1965, 1970, and 1975);

- 1850-1890 Four Seasons Drive (Street not listed for years 1960, 1965, and 1970);

- All listed addresses for Green Meadow Drive (Street not listed for years 1960, 1965, and 1970);

- 1800-1870 Heather Hills Drive (Street not listed for years 1960, 1965, and 1970);

- All listed addresses for White Cedar Trail Drive (Street not listed for years 1960, 1965, 1970, 1975, 1980, and 1985); and

- 1300-1335 Winterberry Drive (Street not listed for years 1960, 1965, 1970, 1975, 1980, and 1985).

According to the historical street directories reviewed, the following information was noted with respect to the property located at 1600 Kerns Road which contains the Phase One Property:

Table 2: Historical Street Directories – Phase One Property Summary

From	To	Site Occupants	Opinion of Environmental Significance to the Phase One Property
1960	1970	No listings	Not applicable
1975	1980	Residential. Watters Environmental notes that although the street directories list the Phase One Property to be occupied by residential properties in 1975 and 1980, they appear to be incorrect. Property Underwriter's Reports (PURs) from 1982 and 1991 indicate that the Site building (i.e., multi-tenant commercial building) was constructed in 1975. As noted, the Site building (with the exception of a small portion of the northwest corner), asphalt parking lot, and majority of an outdoor children's play area are within the Phase One Property.	Low, based on the nature of the listing
1985	2011	Multi-tenant commercial plaza including the following current and historic tenants: Tyandaga Market, Quality Dental Frames, Illusions Hair & Skin Care, Burlington Children's Centre Inc., Bedini Lorranine Dance Studio, Burl-Oak Systems Inc., Grand Save Food Mart, Pyramid Pumps Inc., Skyline Internet Services, Performance School of Music, CL Computers, Satellite Solutions, Elan'Ore Inc, Revive Hair Salon, Teloip Inc.	Low, based on the nature of the listing and tenants

Based on the information provided in the historical street directories, none of the listings reviewed are considered to be PCAs that might contribute to an APEC on the Phase One Property.

According to the historical street directories reviewed, the following information was noted with respect to properties within the Phase One Study Area:

Table 3: Historical Street Directories –Phase One Study Area

From	To	Site Occupants	Approximate Distance and Direction from the Phase One Property	Opinion of Environmental Significance to the Phase One Property
1980	1995	1375 Kerns Road – Stelco Research Development Centre	The property located at 1375 Kerns Road is located approximately 40 metres southeast of the Phase One Property (across Kerns Road); however, the building present on 1375 Kerns Road is located approximately 225 metres to the southeast, in an inferred transgradient direction. Most of this property within the Phase One Study Area is comprised of a grass-covered field and a pond.	Low. Based on the distance from the Phase One Property

Based on the information provided in the historical street directories reviewed, no PCAs were identified on surrounding properties within the Phase One Study Area that could result in APECs on the Phase One Property.

No other information was noted with respect to occupants located within the Phase One Study Area that may represent a source of potential environmental contamination of the Phase One Property, based on the type and size of operations, distance, transgradient/downgradient orientation and/or direction of these properties relative to the Phase One Property.

4.2 Environmental Source Information

Watters Environmental contacted EcoLog Environmental Risk Information Services Ltd. (EcoLog ERIS), the TSSA, and the MECP Freedom of Information Office for regulatory information pertinent to the Phase One Property. The EcoLog ERIS report is provided in Appendix C. Correspondence from regulatory agencies is provided in Appendix D.

4.2.1 EcoLog Environmental Risk Information Services Ltd. Report

A regulatory database review was completed by EcoLog ERIS, an environmental database and information service company. The EcoLog ERIS Report provides information from 69 databases including, listings for the National Pollution Release Inventory (NPRI), Inventory of PCB Storage Sites, Certificates-of-Approval, Permits-to-Take-Water (PTTW), Certificates of Property Use (CPU), inventory of coal gasification plants, records of environmental incidents, offices, spills and discharges, waste management records, retail storage tanks maintained by the TSSA, RSC, landfill information, etc. Exact locations of water wells are not known due to uncertainty of UTM coordinates. The EcoLog ERIS report, including a detailed description of the databases reviewed, is presented in Appendix C.

The environmental databases provided the following information for the property located at 1600 Kerns Road which contains the Phase One Property:

Table 4: EcoLog ERIS – Phase One Property Summary

Property Name and Address	Database	Listing	Opinion of Environmental Significance to the Phase One Property
Pyramid Pumps Inc. 1600 Kerns Road, Unit 3	Scott's Manufacturing Directory (1992 – March 2011)	Listed as a manufacturer of pumps and compressors	Low. Based on the nature of the listing. Although listed as a "manufacturer" in the Scott's Directory, a 1999 property underwriters' report (i.e., an actual Site inspection by an insurance agent) indicates that the facility was a wholesaler of electric pumps, and not a manufacturer (see Section 4.2.5).

Based on the information obtained from the EcoLog ERIS for the Phase One Property, none of the listings reviewed are considered to be PCAs that might contribute to an APEC on the Phase One Property.

According to the information provided in the EcoLog ERIS report, the following information was noted regarding the Phase One Study Area:

Table 5: EcoLog ERIS - Phase One Study Area Summary

Property Name and Address	Location Relative to the Phase One Property	Database	Listing	Opinion of Environmental Significance to the Phase One Property
The Regional Municipality of Halton 1856 Four Seasons Drive	Located approximately 55 metres west of the Phase One Property, in an inferred downgradient direction.	Ontario Spills (1988 – February 2019)	Listed as having a spill of raw unchlorinated sewage into a house due to a sewer back up.	Low. Based on the nature of the listing.
Electro-Pulse Enterprises Limited 1572 Kerns Road, Unit 2	Located approximately 55 metres south of the Phase One Property, in an inferred transgradient direction.	Scott's Manufacturing Directory (1992 – March 2011)	Listed as a miscellaneous chemical product manufacturer; fabric embroidery; and wholesaler-distributor of electrical wiring, construction supplies, general-line building supplies and chemical and allied products.	Low. Based on the nature of the listing. Note that the land to the south is occupied by residential properties. As such, it is likely that the property was used as a mailing address.
Burlington Hydro-Electric 1850 Heather Hills	Located approximately 125 metres west of the Phase One Property, on the opposite side of Hager Creek (i.e., not hydraulically connected).	Ontario Spills (1988 – February 2019)	Listed as having spill of 126-litres of transformer oil to a floor drain due to a leak in 1999. Possible soil contamination was noted.	Low. Given the distance from the Phase One Property and that the neighbouring property it is not hydraulically connected to the Phase One Property.

Table 5: EcoLog ERIS - Phase One Study Area Summary (Continued)

Property Name and Address	Location Relative to the Phase One Property	Database	Listing	Opinion of Environmental Significance to the Phase One Property
AIC Global Holdings Inc., AIC Ltd. 1375 Kerns Road	Located approximately 225 metres southeast of the Phase One Property, in an inferred transgradient direction	Ontario Regulation 347 Waste Generators Summary (1986 – July 31, 2019)	Listed as a generator of waste oil skimmings & sludges, alkaline wastes – other metals, paint/pigment/coating residues, polymeric resins, aliphatic solvents, organic laboratory chemicals, inorganic laboratory chemicals, PCBs, and non-halogenated pesticides and herbicides as of 2019.	Low. Given the distance and inferred transgradient direction from the Phase One Property.
AIC Group of Funds 1375 Kerns Road		Ontario Spills (1988 – February 2019)	Listed as having a spill of fire water with possible PCB contamination to surface water in 2006.	Low. Given the distance and inferred transgradient direction from the Phase One Property.

Table 5: EcoLog ERIS - Phase One Study Area Summary (Continued)

Property Name and Address	Location Relative to the Phase One Property	Database	Listing	Opinion of Environmental Significance to the Phase One Property
Stelco Inc. Research & Development Centre, Selteck (Stelco), Steel Company of Canada 1375 Kerns Road	Located approximately 225 metres southeast of the Phase One Property, in an inferred transgradient direction	Ontario Regulation 347 Waste Generators Summary (1986 – July 31, 2019)	Listed as a generator of waste inorganic laboratory chemicals, organic laboratory chemicals, aliphatic solvents, halogenated solvents, PCBs, and emulsified oils from 1986 to 1998.	Low. Given the distance and inferred transgradient direction from the Phase One Property.
		Inventory of PCB Storage Sites (1987-October 2004, 2012 – December 2013)	Listed as storing 4 drums with high level PCBs in 1995.	Low. Given the distance and inferred transgradient direction from the Phase One Property.
		National PCB Inventory (1988 – 2008)	Listed as storing askarel-type PCBs in 1996	Low. Given the distance and inferred transgradient direction from the Phase One Property.

Watters Environmental notes that the landfill discovered on the north-central portion of the Phase One Property was not listed in the EcoLog report. There was one closed domestic landfill listed in the EcoLog report but it was located approximately 300 metres south of, and inferred transgradient, the Phase One Property.

In addition to the information provided above, the EcoLog ERIS report identified multiple additional listings in the databases; however, Watters Environmental notes that, based on the nature of the listing and/or type of operations and/or distances and/or directions from the Phase One Property relative to the inferred direction of groundwater flow, none of these listings were identified as being PCAs that would be considered APECs to the Phase One Property.

There were a number of listings in the EcoLog ERIS report that were "unplottable". These records could not be mapped due to various reasons, including limited geographic information, and may or may not have been present within the search radius and were included in the EcoLog ERIS report only for reference. Unless there was information within a specific listing that could be used to infer its location, the "unplottable" listings were not considered to be relevant to the Site due to the uncertainty.

Summary

Based on the listings contained in the EcoLog ERIS report reviewed, none of the surrounding properties reviewed are considered to be PCAs that might contribute to an APEC at the Phase One Property due to the nature of the listing and/or their distance from or their transgradient/downgradient location from the Phase One Property.

4.2.2 Technical Standards & Safety Authority

Watters Environmental requested the TSSA to complete a property-based environmental information search for the Phase One Property. The response is included in Appendix D of this report. The TSSA reported to Watters Environmental on August 22, 2019 indicating that there were fuel storage tank records available (i.e., listed as FS cylinder exchange, instrument number 64700484) for the 1600 Kerns Road property. Watters Environmental requested for additional information be provided. A letter provided by the TSSA, dated September 18, 2019 indicated that the FS Cylinder exchange was associated with propane tanks at the Tyandaga Corner Store.

As such, Watters Environmental does not consider the use of propane tanks as a PCA on the 1600 Kerns Road property that could result in an APEC on the Phase One Property.

4.2.3 Registry Information Search

Watters Environmental conducted an online search of the Ontario Brownfields Environmental Site Registry (http://www.ene.gov.on.ca/environment/en/subject/brownfields.html) on September 3, 2019 for environmental information regarding the Phase One Property and Phase One Study Area and none were identified.

4.2.4 Ministry of the Environment, Conservation and Parks

A request was submitted to the MECP Freedom of Information (FOI) office on August 21, 2019. Watters Environmental received a response from the MECP dated September 3, 2019 stating that there were no records available for the property addressed as 1600 Kerns Road, which includes the Phase One Property.

A supplemental request was submitted to the MECP FOI office on December 12, 2019. The MECP issued a formal response to Watters Environmental dated January 30, 2020 with available documentation regarding 1600 Kerns Road which includes the Phase One Property. Watters Environmental notes the following regarding the documentation provided by the MECP FOI:

- An Old Waste Disposal Site Study document (undated) was available which documented information regarding a waste disposal site (#7055) present on the Phase One Property. Note that this registered landfill is not in the Ministry of the Environment's publicly available document entitled, "*Waste Disposal Site Inventory*", dated June 1991;

- The waste disposal site (i.e., landfill) operated originally as the Nelson Township Garbage disposal in the 1960s and closed in early 1970;

- Wastes present in the landfill were noted to be up to 13 metres deep and comprised of municipal organics, glass, wood, and metal wastes;

- Two separate figures show the approximate extent of the landfill which appears to include a portion of the Phase One Property. The landfill extends off-Site to the north of the Phase One Property; and

- Methane gas testing conducted in boreholes and within residential homes confirmed that methane was not detected.

Based on the information provided in the supplemental MECP FOI request, a closed waste disposal site is confirmed to be present on the Phase One Property. As such, as noted in Section 4.1.5, the PCA associated with this activity is PCA #58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use biosoils as soil conditioners, and contributes to an APEC on the northern portion of the Phase One Property.

4.2.5 Property Underwriters' Report and Plans

Watters Environmental contacted Opta for information relating to PURs and Property Underwriters' Plans (PUPs) prepared for the property located at 1600 Kerns Road, which contains the Phase One Property, and the following documents were provided:

- Four PURs prepared for the Phase One Property, dated 1982 (x2), 1991, and 1999; and
- One PUP prepared for the Phase One Property, dated 1982.

Based on a review of the PURs and PUP, Watters Environmental notes the following with respect to the Phase One Property:

- The 1982 and 1991 PURs noted the following:
  - The Site building located at 1600 Kerns Road was constructed in 1975 and consisted of a one-storey, slab-on-grade concrete foundation building with a total floor area of 604.5 square metres (m^2);
  - The Site building was called Forestvale Plaza and included a children's daycare, and a dental office;
  - The Site building was heated via electric forced air units, and natural gas-fired forced air units; and
  - The Site building did not contain an elevator.
- The 1999 PUR noted the following:
  - The Site building contained a variety store, a tv satellite sales & service business, a music store, a bakery, a wholesaler of electric pumps, and a children's daycare; and
  - The Site building had a total floor area of 1,646 m^2.
- The 1982 PUP noted the following:
  - The Site building contained six individual tenant units, and an electrical room;
  - A parking lot was noted on the north portion of the property, a shipping & receiving area was noted on the southern portion of the property, and an outdoor children's playground was noted on the western portion of the property; and

- The western half of the Site building was occupied by the children's daycare, and contained a kitchen, and various separate play areas.

Summary

Based on the information provided in the PURs and PUP, the Phase One Property contained the majority of the parking lot and the majority of the Site building. The portion of the Site building present on the Phase One Property contained a variety store, a tv satellite sales & service business, a music store, a bakery, a wholesaler of electric pumps, and a children's daycare.

None of the information reviewed in the PURs and PUP are considered PCAs that might contribute to an APEC on the Phase One Property.

4.2.6 Ontario Ministry of Natural Resources

The EcoLog ERIS report provided information and a map on Areas of Natural and Scientific Interest (ANSI) that may be located within the Phase One Study Area. The source of this information was the Ministry of Natural Resources (MNR). The report indicated that there are no ANSIs present within the Phase One Study Area.

4.3 Physical Setting Sources

4.3.1 Aerial Photographs

Watters Environmental completed a review of historical aerial photographs showing the Phase One Property and the Phase One Study Area. The aerial photographs were obtained from the National Air Photo Library in Ottawa, Ontario, and from the City of Burlington Interactive Maps website (i.e., https://navburl-burlington.opendata.arcgis.com/pages/apps). Where available, at least one aerial photograph per decade, until a time prior to the first developed use of the Phase One Property, was selected for review. Where possible, aerial photographs with smaller scales were selected for review. These aerial photographs included:

- Aerial photographs, for the years 1954 (1:15,840), 1961 (1:25,000), 1965 (1:16,000), 1979 (1:25,000), and 1992 (1:25,000); and

- Satellite images from the City of Burlington online Interactive Maps for the years 1995, 2002, 2011, and 2017.

The earliest available aerial photograph from the National Air Photo Library for the Phase One Study Area was 1954.

According to the historical aerial photographs reviewed, the following information was noted with respect to the Phase One Property.

Table 6: Aerial Photograph/Satellite Image – Phase One Property Summary

Date of Photograph / Satellite Image	Comments
1954	The Phase One Property appears to consist of forested and/or agricultural land.
1961	The Phase One Property appears to be similar to that observed in the 1954 aerial photograph.
1965	The Phase One Property appears to be similar to that observed in the 1961 aerial photograph.
1979	The Phase One Property appears to be developed with a rectangular shaped building similar in configuration to the Site building observed at the time of the Site reconnaissance.
1992	The Phase One Property appears to be similar to that observed in the 1979 aerial photograph.
1995	The north portion of the Phase One Property appears to consist of a parking lot. Landscaping appears to be present on the eastern boundary of the Phase One Property, and trees appears to be present along the southern property boundary. The remainder of the Phase One Property appears to be similar to that observed in the 1992 aerial photograph.
2002	The Phase One Property appears to be similar to that observed in the 1995 satellite image.
2011	The Phase One Property appears to be similar to that observed in the 2002 satellite image.
2017	The Phase One Property appears to be similar to that observed in the 2011 satellite image.

According to the historical aerial photographs reviewed, the following was noted with respect to the properties located within the Phase One ESA study area:

Table 7: Aerial Photograph/Satellite Image – Phase One Study Area Summary

Date of Photograph/ Satellite Image	Direction from Phase One Property	Comments
1954	North	Properties located north of the Phase One Property appear to consist of forested and agricultural land.
	East	Kerns Road appears to be present adjacent to the east of the Phase One Property and then agricultural land.
	South	Properties located south of the Phase One Property appear to consist of agricultural land.
	West	Properties located west of the Phase One Property appear to consist of forested and agricultural land.
1961	North	Properties located north of the Phase One Property appear to be similar to those observed in the 1954 aerial photograph.
	East	Properties located east of the Phase One Property appear to be similar to those observed in the 1954 aerial photograph.
	South	Properties located south of the Phase One Property appear to be similar to those observed in the 1954 aerial photograph.
	West	Properties located west of the Phase One Property appear to be similar to those observed in the 1954 aerial photograph.
1965	North	Properties located north of the Phase One Property appear to be similar to those observed in the 1961 aerial photograph.
	East	Properties located east of the Phase One Property appear to be similar to those observed in the 1961 aerial photograph, except that the properties east of Kerns Road appear to be under development.
	South	Properties located south of the Phase One Property appear to consist of agricultural land followed by a construction site.
	West	Properties located west of the Phase One Property appear to be similar to those observed in the 1961 aerial photograph.

Table 7: Aerial Photograph/Satellite Image – Phase One Study Area Summary (Continued)

Date of Photograph/ Satellite Image	Direction from Phase One Property	Comments
1979	North	A portion of Four Seasons Drive appears to be located adjacent to the north of the Phase One Property, beyond which appears to consist of residential properties.
	East	Properties located east of the Phase One Property appear to be similar to those observed in the 1961 aerial photograph.
	South	Properties adjacent to the south of the Phase One Property appear to consist of residential properties, beyond which appears to be vacant and/or agricultural land.
	West	Properties located west of the Phase One Property appear to consist of a forested area followed by residential properties.
1992	North	Properties located north of the Phase One Property appear to be similar to those observed in the 1979 aerial photograph.
	East	Properties located east of the Phase One Property appear to be similar to those observed in the 1979 aerial photograph, except that residential properties appear to be present east of Kerns Road.
	South	Properties located south of the Phase One Property appear to be similar to those observed in the 1979 aerial photograph, except that a large building appears to be present south of the residential properties.
	West	Properties located west of the Phase One Property appear to be similar to those observed in the 1979 aerial photograph.
1995	North	Properties located north of the Phase One Property appear to be similar to those observed in the 1992 aerial photograph.
	East	Properties located east of the Phase One Property appear to be similar to those observed in the 1992 aerial photograph, except that a large building and pond appears to be present to the southeast (across Kerns Road).
	South	Properties located south of the Phase One Property appear to be similar to those observed in the 1992 aerial photograph.
	West	Properties located west of the Phase One Property appear to be similar to those observed in the 1992 aerial photograph.

Table 7: Aerial Photograph/Satellite Image – Phase One Study Area Summary (Continued)

Date of Photograph/ Satellite Image	Direction from Phase One Property	Comments
2002	North	Properties located north of the Phase One Property appear to be similar to those observed in the 1995 satellite image.
	East	Properties located east of the Phase One Property appear to be similar to those observed in the 1995 satellite image.
	South	Properties located south of the Phase One Property appear to be similar to those observed in the 1995 satellite image.
	West	Properties located west of the Phase One Property appear to be similar to those observed in the 1995 satellite image.
2011	North	Properties located north of the Phase One Property appear to be similar to those observed in the 2002 satellite image.
	East	Properties located east of the Phase One Property appear to be similar to those observed in the 2002 satellite image.
	South	Properties located south of the Phase One Property appear to be similar to those observed in the 2002 satellite image.
	West	Properties located west of the Phase One Property appear to be similar to those observed in the 2002 satellite image.
2017	North	Properties located north of the Phase One Property appear to be similar to those observed in the 2011 satellite image.
	East	Properties located east of the Phase One Property appear to be similar to those observed in the 2011 satellite image.
	South	Properties located south of the Phase One Property appear to be similar to those observed in the 2011 satellite image.
	West	Properties located west of the Phase One Property appear to be similar to those observed in the 2011 satellite image.

4.3.2 Topography, Hydrology, Geology, Physiography

Watters Environmental conducted a review of the following topographic, geological, and physiographic maps showing the Phase One Study Area:

- A topographic map available online from Natural Resources Canada (NRC) – National Topographic System (http://atlas.nrcan.gc.ca) (see Figure 4);
- Ministry of Northern Development and Mines (MNDM), Surficial Geology on Google Earth Database, 2010;
- MNDM, Bedrock Geology on Google Earth Database, 2011; and
- MECP Water Well Records website (http://www.ontario.ca/environment-and-energy/well-records).

Similar maps, including an Ontario Base Map, were provided in the EcoLog ERIS report.

Based on a review of the online topographic map from the NRC, the Phase One Property is situated at an elevation of approximately 130 mamsl, and is relatively flat with surface drainage to catch basins located within the Phase One Property or to catch basins along Four Seasons Drive and Kerns Road. The surrounding properties to the east and west (with the exception of the ravine located further to the west and within the larger 1600 Kerns Road property) were at a relatively similar grade with the Phase One Property. The land to the west of the Phase One Property (i.e., the ravine on the larger part of the 1600 Kerns Road property) is at a much lower elevation, as it slopes down into Hager Creek. Properties to the north of the Phase One Property are generally at a higher elevation than the Phase One Property, and properties to the south the Phase One Property are generally at a lower elevation than the Phase One Property.

Based on the general topography of the Phase One Property and surrounding area, Watters Environmental infers that the near-surface groundwater at the Phase One Property flows to the west, following the local topographic gradient towards Hager Creek located approximately 20 metres to the west of the western boundary of the Phase One Property.

A review of the MNDM Surficial Geology map on the Google Earth Database indicates that the overburden in the area of the Phase One Property consists of clay to silt-textured till (derived from glaciolacustrine deposits or shale).

Bedrock in the vicinity of the Phase One Property is expected to be shale, limestone, dolostone, and siltstone of the Queenston Formation. As noted in Section 4.1.5, Exp encountered bedrock in some of their boreholes drilled on the Phase One Property at depths ranging from approximately 8.77 to 11.77 mbgs.

4.3.3 Fill Materials

Fill material extending to approximately 10.17 mbgs was identified in Exp's BH1, and 3.1 and 5.9 mbgs in BH101 and BH102, respectively. All boreholes were located within the parking lot of the Phase One Property. The fill within BH1 consisted of re-worked brown to grey clayey silt, with some travel and sand pockets. The fill of BH1 also contained glass, brick, and ceramic fragments. Gravel, glass, brick, ceramics and ash, was observed in the fill in boreholes BH101 and BH102. These fill materials are understood to be waste material that was placed in the landfill. Exp did not identify any visual or olfactory evidence of hydrocarbon or solvent impacts or decomposable organic wastes in the landfill material.

4.3.4 Water Bodies and Areas of Natural Significance

Hager Creek is located approximately 20 metres west of the western boundary of the Phase One Property ultimately leading to Lake Ontario. The inferred groundwater flow directions are subject to confirmation though subsurface investigations.

Section 1(1)2 of O. Reg. 153/04 defines Areas of Natural Significance as "*An area of natural and scientific interest (life science or earth science) identified by the Ministry of Natural Resources as having provincial significance*".

As noted in Section 4.2.6, the EcoLog ERIS report (see Appendix C) provides a map of ANSIs within 2 kilometres of the Phase One Property. No ANSIs were identified within or near the Phase One Study Area.

In Section 1(1)4 of O. Reg. 153/04, Areas of Natural Significance are also defined as "*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*".

Watters Environmental also reviewed the City of Burlington's Official Plan (provided on its website), Schedule B – Comprehensive Land Use Plan – Urban Planning Area. This figure presents various features within Burlington, including "Environmentally Sensitive Areas". The legend on Schedule B states under Environmentally Sensitive Area "Note: Boundaries based on

Map 1 of the Region of Halton Official Plan (2006)". No Environmentally Sensitive Areas were shown for the Phase One Property on Schedule B.

Watters Environmental also reviewed the Region of Halton's Official Plan (provided in its website), Map 1 – Regional Structure and Map 1G – Key Features Within the Greenbelt and Natural Heritage Systems. Map 1 shows a green line near the Phase One Property which could be interpreted as the outline of a creek (i.e., Hager Creek). The green line could also represent a "Regional Natural Heritage System", as shown on the legend but it is not definitive at this scale. Further, the map does not indicate that a Regional Natural Heritage System is considered an "Area of Natural Significance" as per O. Reg. 153/04. Figure 1G shows a different green coloured line through the same area near the Phase One Property and the legend states that it is a "Key Feature". Similarly, the map does not state that a "Key Feature" is an "Area of Natural Significance" as per O. Reg. 153/04.

Watters Environmental received a letter from the Region of Halton, dated April 16, 2020 indicating that non-potable groundwater standards could not be used for the Phase One Property since there is an "Environmentally Sensitive Area" within 30 metres of the Phase One Property. The Region of Halton provided a screen capture of a zoomed-in GIS layer showing the Regional Natural Heritage System. This GIS layer is not available in the public domain (i.e., only the Region staff have access to it).

4.3.5 Well Records

According to the database information provided in the EcoLog ERIS report, no well records were available for the property located at 1600 Kerns Road which contains the Phase One Property or within the Phase One Study Area.

A search was also conducted of the MECP Water Well Records website (http://www.ontario.ca/environment-and-energy/well-records), and although it is known that Exp installed two monitoring wells at 1600 Kerns Road in 2018, no well records were available for the Phase One Property or within the Phase one Study Area.

4.4 Site Operating Records

Watters Environmental was not provided with any Site operating records from the Site representative. Based on the available records reviewed (i.e., aerial photographs, PURs), the Phase One Property was first developed for commercial purposes in 1975, prior to which the Phase One Property consisted of agricultural land. Given the retail / commercial nature of the multi-tenant

building located at 1600 Kerns Road, operating records would likely not have been maintained by the individual tenants.

Based on the historical records reviewed, Watters Environmental understands that a closed landfill is present on the north-central portion of the Phase One Property. A landfill is defined as an industrial use in Section 1(3) of O. Reg. 153/04. As such, the Phase One Property is considered an enhanced investigation property, as defined in Ontario Regulation 153/04, s.32(1)(b).

4.4.1 Regulatory Permits and Records

No regulatory permits or records were available for review for the Phase One Property.

4.4.2 Safety Data Sheets

No safety data sheets were available for review.

4.4.3 Underground Utility Drawings

Watters Environmental was not provided with any underground utility drawings for the Phase One Property; however, Watters Environmental anticipates that the underground utilities of the Phase One Property would be between 2 to 3 mbgs (if any present), and the shallow groundwater is anticipated to be deeper than the depth of the utilities, based on the groundwater conditions encountered by Exp. As such, the subsurface utilities are not expected to act as a preferential pathway for migration of contaminants (if any are present).

4.4.4 Chemical Inventories

Watters Environmental is not aware of any chemical inventories associated with current or former operations on the Phase One Property. During the reconnaissance of the Phase One Property, Watters Environmental was not provided with any chemical inventories. However, various retail-sized household cleaning chemicals were observed within the various tenant units of the Site building (see Section 6.2.7).

4.4.5 Inventory of Storage Tanks

Watters Environmental was not provided with any inventory of storage tanks for review.

4.4.6 Environmental Monitoring Data

Watters Environmental was not provided with any environmental monitoring data for review.

4.4.7 Waste Management Records

Watters Environmental was not provided with any waste management records for review.

4.4.8 Process, Production and Maintenance Documents

Watters Environmental was not provided with any process, production or maintenance document records for review.

4.4.9 Spill Records

Watters Environmental was not provided with any spill's records for review.

4.4.10 Emergency Response Plans

Watters Environmental was not provided with any emergency response plans for review.

4.4.11 Environmental Audit Reports

Watters Environmental was not provided with any environmental audit reports for review, other than the previous reports noted in Section 4.1.5.

4.4.12 Phase One Property Plans

Watters Environmental was provided with a 2020 survey plan, which indicated key features of the Phase One Property (e.g., property boundaries, buildings, etc.). Watters Environmental did not identify any PCAs or APECs on the survey plan. However, as noted in other sections of this report, an on-Site PCA (#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners), contributing to an APEC on the north-central portion of the Phase One Property, was identified from the review of historical documents and previous environmental reports. This landfill extended off-Site to the north of the Phase One Property.

5.0 INTERVIEWS

Mr. Kevin Sue, B.Eng. of Watters Environmental visited the Phase One Property on August 21, 2019.

Mr. Sue was accompanied by Mr. Brian Venton (Fieldgate Director of Property Management) during the visit of the Phase One Property. Mr. Venton was interviewed by Mr. Sue. Mr. Venton is hereafter referred to in this report as the "Site representative". Information regarding specific issues is provided in the relevant sections throughout this report. Other general information provided by the Site representative is summarized below:

- There are no ASTs or USTs, and none were present historically;
- No chemical storage or incidences of spills were reported to have occurred; and
- Cosmetic renovations have occurred within the Site building when tenant units change hands. No structural work has been conducted on the Site building.

Based on the information obtained from the interview, there are no current or previous Site operations on the Phase One Property that are considered to be PCAs that would contribute to APECs to Phase One Property.

6.0 SITE RECONNAISSANCE

6.1 General Requirements

Mr. Sue of Watters Environmental visited the Phase One Property on August 21, 2019, to conduct a walk-through reconnaissance of the Phase One Property and properties surrounding the Phase One Property (i.e., the Phase One Study Area), to evaluate potential on-Site issues, and to identify whether any surrounding land uses could impact the environmental condition of the Phase One Property. The Site reconnaissance commenced at approximately 9:00 am and terminated at approximately 11:30 am. The weather conditions were sunny with no precipitation, with temperatures ranging from 25 to 30 degrees Celsius.

Mr. Sue, B.Eng., is an Environmental Site Assessor with Watters Environmental with over 11 years of environmental consulting experience, and was supervised by Mr. Basil Wong, M.Eng., P.Eng., who has been an environmental consultant for over 27 years and is a Qualified Person for Environmental Site Assessments (QP_{ESA}). Qualifications of these team members are provided in Appendix E.

During the Site reconnaissance, representative photographs of the Phase One Property were collected, including photographs of the interior and exterior of the Site building, and potential environmental contaminant issues located at the Phase One Property. Where referenced, the representative photographs and their detailed descriptions have been provided in the photograph section of this report.

Watters Environmental notes that this Phase One Property is considered an enhanced investigation property as described in Ontario Regulation 153/04 since a closed landfill is present on the north-central portion of the Phase One Property.

The Phase One Property occupies a portion of a larger property located at 1600 Kerns Road and consists of: a multi-tenant commercial building (with a small portion of the northwest corner of the of the building extending off the Phase One Property); an asphalt-paved parking lot; and the majority of an outdoor children's play area. The layout of the Phase One Property is presented on Figure 3.

Physical Impediments

Watters Environmental was able to access all portions of the Phase One Property. No physical impediments were noted at the Phase One Property at the time of the Site reconnaissance.

6.2 Specific Observations at Phase One Property

6.2.1 General Description of Structures

The Site building is located on the southern portion of the Phase One Property (refer to the previous Photographs 1 to 3). Details of the building are as follows:

- A single-storey, slab-on-grade multi-tenant commercial building constructed in 1975;
- The Site building has a footprint of 1,646 m^2, with the majority of it being situated within the Phase One Property (i.e., only a small portion of the northwest corner extends off the Phase One Property); and
- The Site building was constructed of a concrete slab-on-grade foundation with concrete block walls, wood framing, and a flat and sloped roof.

6.2.2 Below Grade Structures

No below grade structures are present on the Phase One Property.

6.2.3 Above and Underground Storage Tanks

Aboveground Storage Tanks

As noted in Section 5.0, the Site representative informed Watters Environmental that there are no current or historical ASTs on the Phase One Property. Watters Environmental did not observe any evidence of ASTs at the Phase One Property.

Underground Storage Tanks

As noted in Section 5.0, the Site representative informed Watters Environmental that there are no current or historical USTs on the Phase One Property. Watters Environmental did not observe any evidence of USTs at the Phase One Property.

6.2.4 Potable and Non-Potable Water Sources

The southern portion of the Phase One Property, where the majority portion of the Site building is situated, is currently serviced by municipal water supply. No water supply wells were identified on the Phase One Property or within the Phase One Study Area.

6.2.5 Utilities and Mechanical Systems

Water

Water is provided to the Phase One Property from the Region of Halton's municipal water supply. The Site building utilizes water for domestic purposes (i.e., washrooms, kitchens, cleaning, etc.). Watters Environmental does not anticipate any environmental issues regarding water intake at the Phase One Property.

A search was also conducted of the MECP Water Well Records website (http://www.ontario.ca/environment-and-energy/well-records), and no well records were available for the Phase One Property or within the Phase one Study Area.

Wastewater

Domestic wastewater (i.e., kitchens, washrooms, cleaning, etc.) is discharged to the municipal sewer system. Watters Environmental does not anticipate any significant issues regarding the quality of wastewater discharged at the Phase One Property from domestic water use.

Storm Water

Storm water from the roof of the Site building is discharged overland and to underground storm sewer lines via external piping and internal piping.

Precipitation landing on the Phase One Property infiltrates into the ground surfaces or flows overland into catch basins located on the Phase One Property or onto Four Seasons Drive and Kerns Road.

Electricity

Electrical service is supplied to the Phase One Property by Burlington Hydro via one pad-mounted transformer located on the south-central portion of the Phase One Property (see Photograph 4). The appearance and relatively good condition of this transformer suggests that it may have been installed at some point after 1980, when PCBs were banned from electrical equipment. However, the original transformer installed when the 1600 Kerns Road property was developed in 1975 may have contained PCBs. O. Reg. 153/04 defines the use of transformers as PCA #55 – Transformer Manufacturing, Processing and Use. As such, the former potentially PCB-containing transformer is considered an on-Site PCA, contributing to an APEC.

Natural Gas

Natural gas is supplied to the Phase One Property for the hot water tanks and the roof-mounted heating, ventilation, and air conditioning (HVAC) units.

Hydraulic Equipment

The Site representative indicated that there is no hydraulic equipment or reservoirs at the Phase One Property, and that none were present historically. Watters Environmental did not observe the presence of hydraulic equipment or reservoirs at the Phase One Property.

6.2.6 Phase One Property Buildings Observations

Exit and Entry Points

Access into the Site building is through the front doors on north side of the individual units. Each unit also has a back door on the south side of the Site building which is used by the tenants.

Heating and Cooling

Heating and cooling for the Site building is provided by electric and natural gas-fired HVAC equipment located on the roof of the Site building and within the individual tenant units.

Drains, Pits, and Sumps

Watters Environmental did not observe floor drains, pits, or sumps within the Site building.

Unidentified Substances

Watters Environmental did not observe any unidentified substances in the Site building or the property exterior on the Phase One Property.

Stains or Corrosion

Staining and/or corrosion was not observed to be present on the surfaces within the Phase One Property.

6.2.7 Chemical Storage and Handling

Liquid Chemicals

Watters Environmental observed the following liquid chemicals and/or petroleum products at the Phase One Property:

- Several small retail-sized household cleaning chemicals within storage rooms and washrooms within the various tenant units of the portion of the Site building situated on the Phase One Property.

Watters Environmental notes that these chemical storage areas had no secondary containment but appeared to be organized and free of chemical staining. Watters Environmental does not consider any of the chemical storage locations to be PCAs that may contribute to an APEC.

Compressed Gas Storage

Watters Environmental did not observed the presence of compressed gas storage at the Phase One Property.

6.2.8 Current and Former Wells

As noted in Section 4.3.5 above, Watters Environmental obtained database information provided in the EcoLog ERIS report and conducted a search of the MECP Well Records database to determine the presence of current and former wells on the Phase One Property or Phase One Study Area. No current or former wells (including water supply wells) were noted to be present on the Phase One Property or within the Phase One Study Area.

6.2.9 Sewage Works

Sanitary wastewater from the building is discharged into the municipal sanitary sewer system. Based on past and present activities conducted at the Phase One Property, Watters Environmental does not anticipate any significant issues regarding the quality of wastewater discharges at the Phase One Property.

6.2.10 Ground Surface

Based on observations made by Watters Environmental, the Phase One Property consists of the Site building, an asphalt-paved parking lot, and the majority of an outdoor children's play area. An asphalt-paved laneway runs along the south side of the Phase One Property, adjacent to the south of the Site building. Some landscaping (i.e., manicured lawns) is present along the eastern property boundary.

6.2.11 Railway Lines

No railway lines are located on or adjacent to the Phase One Property or within the Phase One Study Area.

6.2.12 Spills and Releases (Areas of Stained Soil, Vegetation or Pavement)

Watters Environmental did not observe evidence of spills, accidental releases or widespread staining on the ground surface, or vegetation, which would indicate the occurrence of a major environmental event that may have significantly impacted the environmental quality of the subsurface at the Phase One Property.

6.2.13 Stressed Vegetation

Watters Environmental did not observe evidence of stressed vegetation, which would indicate the occurrence of a major environmental event that may have significantly impacted the environmental quality of the subsurface at the Phase One Property.

6.2.14 Fill and Debris Materials

As noted in Section 4.3.3, fill material was identified in Exp's BH1, BH101 and BH102, which extended to depths of approximately 10.17 mbgs, and 3.1 mbgs, and 5.9 mbgs, respectively. All boreholes were located within the parking lot of the Phase One Property. The fill within BH1 consisted of re-worked brown to grey clayey silt, with some gravel and sand pockets. The fill of BH1 also contained glass, brick, and ceramic fragments. Gravel, glass, brick, ceramics and ash, were observed in the fill in boreholes BH101 and BH102. Exp did not identify any visual or olfactory evidence of hydrocarbon or solvent impacts or decomposable organic wastes in the landfill material.

6.2.15 Potentially Contaminating Activity

Based on observations made during the Site reconnaissance and interviews with the Site representative, Watters Environmental identified one PCA at the Phase One Property (in addition to the PCAs identified in the historical review), as defined in Table 2 of Schedule D of the O. Reg. 153/04. This PCA are summarized in the following table.

Table 8: Potentially Contaminating Activities at the Phase One Property

RSC Regulation PCA #	PCA Definition in the RSC Regulation	Description
55	PCA #55 – Transformer Manufacturing, Processing and Use	A pad-mounted transformer is located on the south-central portion of the Phase One Property. The appearance and relatively good condition of this transformer suggests that it may have been installed at some point after 1980, when PCBs were banned from electrical equipment. However, the original transformer installed when the 1600 Kerns Road property was developed in 1975 may have contained PCBs. The presence of a pad-mounted transformer is considered a PCA that represents an APEC on the south-central portion of the Phase One Property.

* Ontario Regulation 153/04, as amended, Records of Site Condition – Part XV.1 of the Act, Table 2: Potentially Contaminating Activities

The above-noted PCA is what was observed from the reconnaissance of the Phase One Property. PCAs identified from a review of historical information and other sources of information have been identified in previous sections of this report.

6.2.16 Unidentified Substances

Watters Environmental did not observe any unidentified substances at the Phase One Property in areas not covered by the Site building.

6.2.17 Building-Related Environmental Issues

Asbestos

Based on the age of the Site building, Watters Environmental anticipates that both friable and non-friable asbestos-containing materials (ACMs) may be present at the Phase One Property. Watters Environmental observed building materials that are potential ACMs in the form of drywall joint

compound, acoustic lay-in ceiling tiles, vinyl floor tile, and roof shingles. Watters Environmental did not observe any other potential ACMs in accessible areas of the Site building on the Phase One Property.

Polychlorinated Biphenyl-Containing Equipment

As noted in Section 6.2.5, electricity is supplied to the Phase One Property by Burlington Hydro via a pad-mounted transformer located on the south-central portion of the Phase One Property. As noted above, the original transformer installed when the 1600 Kerns Road property was developed in 1975 is considered an on-Site PCA (i.e., PCA #55 – Transformer Manufacturing, Processing and Use) contributing to an APEC on the southern portion of the Phase One Property.

Watters Environmental also observed the presence of fluorescent light fixtures. Based on the age of the Site building, there is the potential for the fluorescent light ballasts to contain PCBs, as PCBs were not banned from electrical equipment until 1980.

Lead in Paints

Some of the building finishes of the Site building contained painted surfaces. Lead has been historically used in paint. The Surface Coating Materials Regulation, under the *Hazardous Products Act* restricts the concentration of lead to less than 90 milligrams/kilogram (mg/kg) in paints in specific applications (i.e., interior and exterior surfaces of residential and commercial buildings, furniture and items used by children). As such, the paints in the Site building are considered to be lead-containing, unless proven otherwise by analytical testing. Observations made by Watters Environmental during the Site reconnaissance indicated that the painted surfaces generally appeared to be in good condition.

Urea Formaldehyde Foam Insulation (UFFI)

Watters Environmental was advised by the Site representative that they were not aware of the presence of UFFI at the Phase One Property. Watters Environmental did not observe any visual indicators (such as drill holes in building surfaces) for the possible presence of UFFI at the Phase One Property.

Ozone-Depleting Substances (ODSs)

Based on observations made during the Site reconnaissance, Watters Environmental understands that the Phase One Property contains equipment that is suspected to contain ODSs (i.e., refrigerators, and air conditioning units).

Radon

According to a document entitled, "*Guide for Radon Measurements in Residential Dwellings (Homes)*", prepared by Health Canada and dated 2008, Health Canada has recommended that the average annual concentration of radon in a home should not exceed 200 Bq/m^3. It is difficult to determine with any degree of certainty the radon levels in a home or other building without testing. However, radon testing is not a regulatory requirement.

Pesticides

The Site representative indicated pesticides are not used on the Phase One Property. Watters Environmental did not observe the storage of pesticides at the Phase One Property. The majority of the Phase One Property consists of an asphalt paved parking lot and Site building. A small section of landscaping is present along the eastern boundary of the Phase One Property. Although pesticides may have been applied to the Site, it is Watters Environmental's opinion that the quantities potentially applied would not likely cause a significant environmental contaminant issue to the Phase One Property.

Mould

Watters Environmental conducted an overview assessment (i.e., not an inspection) of the portion of the Site building present on the Phase One Property, for visual or olfactory evidence of obvious microbial contamination or mould, and none was observed.

Watters Environmental also noted that the general indoor air quality of the Site building to be good with no usual odours present that could potentially indicate the presence serious microbial contamination or mould issues.

6.2.18 Enhanced Investigation Property

The Phase One Property is considered an enhanced investigation property, as defined in Ontario Regulation 153/04 since a closed landfill is present on the north-central portion of the Phase One Property. A landfill is defined as an industrial property use, as per Section 1(3) of O. Reg. 153/04. As such, the Phase One Property is considered an enhanced investigation property, as defined in Ontario Regulation 153/04, s.32(1)(b).

6.2.19 Observations of the Phase One Study Area

Watters Environmental reviewed the current land uses of properties within the Phase One Study Area from publicly accessible locations to assess potential environmental contaminant impacts to the Phase One Property that may arise from off-Site operations. Properties within the Phase One Study Area are summarized as follows (see Figure 2):

North of the Phase One Property (Inferred to be transgradient)

Adjacent to the north of the Phase One Property is Four Seasons Drive, followed by multiple residential properties. There are no water bodies (other than the upstream portion of Hager Creek) or areas of natural significance in the immediate vicinity north of the Phase One Property.

East of the Phase One Property (Inferred to be upgradient)

Adjacent to the east of the Phase One Property is Kerns Road, beyond which are residential properties. There is a commercial property to the southeast but most of this property that is within the Phase One Study Area is comprised of a grass-covered area and a pond. There are no water bodies or areas of natural significance in the immediate vicinity east of the Phase One Property.

South of the Site (Inferred to be transgradient)

Adjacent to the south of the Phase One Property is a residential townhouse complex, beyond which is a church. There are no water bodies or areas of natural significance in the immediate vicinity south of the Phase One Property.

West of the Site (Inferred to be downgradient)

Adjacent to the west of the Phase One Property is the non-developable 7.5-metre setback from the top-of-bank followed by the remainder of the 1600 Kerns Road property which is planned to be dedicated to Conservation Halton as part of the redevelopment.

Summary

Based on observations of the surrounding properties operations from publicly accessible locations, it is Watters Environmental's opinion that there are no current operations associated with historical surrounding land use activities that represent an APEC to the Phase One Property.

6.3 Written Description of Investigation

Watters Environmental visited the Phase One Property on August 21, 2019, to conduct a walk-through reconnaissance of the Phase One Property, and properties surrounding the Phase One Property within the Phase One Study Area, to evaluate potential on-Site issues, and to identify whether any surrounding land uses could impact the environmental condition of the Phase One Property. An interview was performed with the aforementioned Site representative of the Phase One Property during the Site reconnaissance. In addition, historical documents were obtained, where available, to determine the historical use of the Phase One Property and Phase One Study area. Four previous environmental and geotechnical reports for the Phase One Property were reviewed to further understand the history and subsurface soil and groundwater conditions of the Phase One Property. Regulatory databases were reviewed to determine if there were any possible concerns on the Phase One Property or within the Phase One Study Area.

Based on the available records reviewed, the Phase One Property was first used as rural agricultural land in the early 18th century and was part of a larger 1,396-hectare property. The Phase One Property consisted of agricultural lands until development in the 1970s. Since development, the Phase One Property has occupied a portion of a larger property located at 1600 Kerns Road and has been comprised of a multi-tenant commercial building (with the exception of a small portion of the northwest corner of the of the building), an asphalt-paved parking lot; and the majority of an outdoor children's play area. The Site building is currently occupied by a kitchen/bathroom renovation store, a fitness centre, a bakery, a hair salon, and a children's daycare.

One PCA from historical on-Site operations (i.e., landfill activities) and one PCA from the construction of the 1600 Kerns Road commercial property (i.e., a transformer) were identified and considered to be APECs on the Phase One Property. In addition, the landfill extends off-Site to the north and is also considered a PCA that would result in an APEC on the Phase One Property (i.e., the same area as the APEC due to the on-Site portion of the landfill).

7.0 REVIEW AND EVALUATION OF INFORMATION

7.1 Current and Past Uses

In accordance with O. Reg. 153/04 (as amended by O. Reg. 511/09), a table of current and past uses of the Phase One Property is required.

Watters Environmental was provided with a chain-of-title search from Ms. Lisa Leva, in order to determine historical ownership of the Phase One Property. One chain-of-title search was provided for the original legal description and PIN as follows:

- Previously known as Lot 11 and Part Lot 5, Plan 99; originally known as Lot 11, Plan 99, Brant's Block, Township of Nelson (now City of Burlington); and
- PIN 07127-0305 (LT).

Based on the data collected from the Phase One Property, interviews and historical records review, the current and historical property uses are summarized in the table below.

Table 9: Current and Historical Property Uses of the Phase One Property

Year	Name of Owner(s)	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, Etc.
1600 Kerns Road PIN 07127-0305 [Previously known as Lot 11 and Part Lot 5, Plan 99; originally known as Lot 11, Plan 99, Brant's Block, Township of Nelson (now City of Burlington)]				
Prior to 1798	Crown	Undeveloped land	Agriculture or Other Use	From Chain-of-Title.
1798	Joseph Brant	Undeveloped land or possibly used for agricultural purposes	Agriculture or other use	From Chain-of-Title. No aerial photographs, street directories or Fire Insurance Plans available for this time period.
1808	Michael Groat	Undeveloped land or possibly used for agricultural purposes	Agriculture or other use	From Chain-of-Title. No aerial photographs, street directories or Fire Insurance Plans available for this time period.

Table 9: Current and Historical Property Uses of the Phase One Property (Continued)

Year	Name of Owner(s)	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, Etc.
1600 Kerns Road PIN 07127-0305 [Previously known as Lot 11 and Part Lot 5, Plan 99; originally known as Lot 11, Plan 99, Brant's Block, Township of Nelson (now City of Burlington)]				
1833	William J. Farr	Undeveloped land or possibly used for agricultural purposes	Agriculture or other use	From Chain-of-Title. No aerial photographs, street directories or Fire Insurance Plans available for this time period.
1844	Michael Groat	Undeveloped land or possibly used for agricultural purposes	Agriculture or other use	From Chain-of-Title. No aerial photographs, street directories or Fire Insurance Plans available for this time period.
1846	James Coyovers	Undeveloped land or possibly used for agricultural purposes	Agriculture or other use	From Chain-of-Title. No aerial photographs, street directories or Fire Insurance Plans available for this time period.
1850	Gilbert Davis	Undeveloped land or possibly used for agricultural purposes	Agriculture or other use	From Chain-of-Title. No aerial photographs, street directories or Fire Insurance Plans available for this time period.
1851	George Ghent	Undeveloped land or possibly used for agricultural purposes	Agriculture or other use	From Chain-of-Title. No aerial photographs, street directories or Fire Insurance Plans available for this time period.
1883	Harry Ghent, Henry Ghent, Nicholas Joshua Kerns	Undeveloped land or possibly used for agricultural purposes	Agriculture or other use	From Chain-of-Title. No aerial photographs, street directories or Fire Insurance Plans available for this time period.
1899	Harry Ghent	Undeveloped land or possibly used for agricultural purposes	Agriculture or other use	From Chain-of-Title. No aerial photographs, street directories or Fire Insurance Plans available for this time period.

Table 9: Current and Historical Property Uses of the Phase One Property (Continued)

Year	Name of Owner(s)	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, Etc.
1600 Kerns Road PIN 07127-0305 [Previously known as Lot 11 and Part Lot 5, Plan 99; originally known as Lot 11, Plan 99, Brant's Block, Township of Nelson (now City of Burlington)]				
1899	Nicholas Joshua Kerns	Undeveloped land or possibly used for agricultural purposes	Agriculture or other use	From Chain-of-Title. No aerial photographs, street directories or Fire Insurance Plans available for this time period.
1907	Leslie Kerns	Undeveloped land or possibly used for agricultural purposes	Agriculture or other use	From Chain-of-Title. No aerial photographs, street directories or Fire Insurance Plans available for this time period.
1963	G.H. Mooradian Limited	Undeveloped land or possibly used for agricultural purposes	Agriculture or other use	From Chain-of-Title, and aerial photographs.
1968	Saz Construction Limited	Undeveloped land	Agriculture or other use	From Chain-of-Title. No Fire Insurance Plans available. The 1965 aerial photograph showed the property to be agricultural land. The 1960, 1965 and 1970 street directories indicated that there were no listings.
1971	Chalfonte Investments Limited	Undeveloped land	Agriculture or other use	From Chain-of-Title, and street directories. The 1970 street directory indicated that there were no listings for the property. Although the street directories list the Phase One Property to be occupied by residential properties in 1975 and 1980, they appear to be incorrect.

Table 9: Current and Historical Property Uses of the Phase One Property (Continued)

Year	Name of Owner(s)	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, Etc.
1600 Kerns Road PIN 07127-0305 [Previously known as Lot 11 and Part Lot 5, Plan 99; originally known as Lot 11, Plan 99, Brant's Block, Township of Nelson (now City of Burlington)]				
1971 (Continued)	Chalfonte Investments Limited (Continued)	Undeveloped land	Agriculture or other use	Property Underwriter's Reports (PURs) from 1982 and 1991 indicate that the Site building (i.e., multi-tenant commercial building) was constructed in 1975.
1975	Belcan Investments Incorporated	Multi-tenant shopping plaza	Commercial use	From Chain-of-Title, PURs, and aerial photographs. The 1982 and 1991 PURs indicated that the Site building was constructed in 1975.
1976	Pogos Investments Limited	Multi-tenant shopping plaza	Commercial use	From Chain-of-Title, PURs, and aerial photographs
2019	FGL Kerns Inc.	Multi-tenant shopping plaza	Commercial use	From Chain-of-Title, PURs, aerial photographs, and satellite images. The satellite images from 2002 to 2017 show commercial land use.

7.2 Potentially Contaminating Activities

According to the completed Phase One ESA, Watters Environmental has identified the following relevant PCAs within the Phase One Property and the Phase One Study Area.

Table 10: Potentially Contaminating Activities at the Phase One Property and Phase One Study Area

PCA	Location of Activity	Table 2 PCA No. & Description*	Discussion
1A	On-Site, located on the north-central portion of the Phase One Property	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use biosoils as soil conditioners	A closed landfill is present on the north-central portion of the Phase One Property. The fill material consists of re-worked clayey silt soil with solid waste debris, such as glass, brick, ceramics and ash. No visual or olfactory evidence of hydrocarbon or solvent impacts or decomposable organic wastes were identified in Exp's boreholes drilled within the landfill area. The presence of a landfill is considered a PCA that represents an APEC on the north-central portion of the Phase One Property.
1B	Off-Site, located north of the Phase One Property (across Four Seasons Drive)	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use biosoils as soil conditioners	A closed landfill is present north of the Phase One Property (across Four Seasons Drive), in an inferred transgradient direction. This is part of the landfill on the Phase One Property. The presence of a landfill is considered a PCA that represents an APEC on the north-central portion of the Phase One Property. Note that the landfill document provided by the MECP indicated that methane gas testing conducted in boreholes and within residential homes confirmed that methane was not detected.

Table 10: Potentially Contaminating Activities at the Phase One Property and Phase One Study Area (Continued)

PCA	Location of Activity	Table 2 PCA No. & Description*	Discussion
2	On-Site, located on the south-central portion of the Phase One Property	#55 – Transformer Manufacturing, Processing and Use	A pad-mounted transformer is located on the south-central portion of the Phase One Property. The appearance and relatively good condition of this transformer suggests that it may have been installed at some point after 1980, when PCBs were banned from electrical equipment. However, the original transformer installed when the 1600 Kerns Road property was developed in 1975 may have contained PCBs. The presence of a pad-mounted transformer is considered a PCA that represents an APEC on the south-central portion of the Phase One Property.

* Ontario Regulation 153/04, as amended, Records of Site Condition – Part XV.1 of the Act, Table 2: Potentially Contaminating Activities

7.3 Areas of Potential Environmental Concern

As shown on the appended Figures 5 and 6, and summarized in the table below, the following APECs were identified at the Phase One Property, in association with specific PCAs, as described in Section 7.2.

Table 11: Areas of Potential Environmental Concern

Area of Potential Environmental Concern	Location of Area of Potential Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground Water, Soil and/or Sediment)
APEC 1A	Closed landfill located on the north-central portion of the Phase One Property.	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use biosoils as soil conditioners	On-Site	PHCs F1 to F4, PAHs, Volatile Organic Compounds (VOCs), Trihalomethanes (THMs), BTEX, Metals, and ORPs [Arsenic (As), Antimony (Sb), Selenium (Se), Boron (Hot Water Soluble) [B(HWS)], Hexavalent Chromium [Cr(VI)], Mercury (Hg), Cyanide (CN-), EC, SAR, Sodium (Na), and Chloride (Cl-)]	Soil and Ground Water
APEC 1B	Closed landfill located north of the Phase One Property (across Four Seasons Drive)	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use biosoils as soil conditioners	Off-Site	PHCs F1 to F4, PAHs, VOCs, THMs, BTEX, Metals, and ORPs [As, Sb, Se, B(HWS), Cr(VI), Hg, CN-, EC, SAR, Na and Cl-]	Soil and Ground Water

Table 11: Areas of Potential Environmental Concern (Continued)

Area of Potential Environmental Concern	Location of Area of Potential Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground Water, Soil and/or Sediment)
APEC 2	Pad-mounted transformer located on the south-central portion of the Phase One Property	#55 – Transformer Manufacturing, Processing and Use	On-Site	PCBs and PHCs	Soil

7.4 Phase One Conceptual Site Model

The Phase One Property consists of a parcel of land within the property located at 1600 Kerns Road, in Burlington, Ontario. The property at 1600 Kerns Road consists of a ravine, a portion of Hager Creek, and the Phase One Property, which is comprised of a multi-tenant commercial plaza. The legal description for the Phase One Property is Part 1 on the Survey and being part of Block G Registered Plan M-81.

For the purpose of this report, the section of Kerns Road that is located east of the Phase One Property is assumed to be aligned in a north-south direction (relative to "Project North"), although it is actually aligned in a northwest-to-southeast direction (relative to "True North"). Unless otherwise noted, descriptions in this report are relative to Project North.

The Phase One Property is located on the southwest corner of the intersection of Four Seasons Drive and Kerns Road, in an area of mixed commercial, community, and residential land uses.

The Phase One Property is currently owned by FGL Kerns Inc. and covers an area of approximately 0.55 hectares (1.36 acres). The Phase One Property consists of: a multi-tenant commercial building (with a small portion of the northwest corner of the building extending off the Phase One Property); an asphalt-paved parking lot; and the majority of an outdoor children's play area.

The Phase One property is accessed from the north via Four Seasons Drive, and through the east via Kerns Road. The remainder of the 1600 Kerns Road, which is not considered a part of the Phase One Property or subject to the Phase One ESA, includes a ravine, a portion of Hager Creek, and a 7.5-metre setback from the top-of-bank to the west property line of the Phase One Property.

Based on the data provided, the Phase One Property was first used as rural agricultural lands in the late 18th century when it was transferred from the Crown to Joseph Brant as part of a 1,396-hectare (3,450-acre) block of land on February 14, 1798. The Phase One Property consisted of agricultural lands until development in the 1970s. Since development, the Phase One Property has been comprised of a multi-tenant commercial plaza, which includes a one-storey slab-on-grade building, an asphalt-paved parking lot, and the majority of an outdoor children's play area located within the larger 1600 Kerns Road property. The Site building is currently occupied by a kitchen/bathroom renovation store, a fitness centre, a bakery, a hair salon, and a children's daycare.

As part of the Phase One ESA completed on the Phase One Property, Watters Environmental reviewed and utilized previous environmental reports, including soil and groundwater data on and adjacent to the Phase One Property, prepared by Exp Services Inc. (Exp) in 2018.

The Phase One Conceptual Site Model (CSM) is presented in the following sections and shown graphically in Figures 5 and 6. Figures 1 to 4 show features on the Phase One Property and Phase One Study Area.

1. Provide one or more figures of the phase one study area that,

i. show any existing building and structures,

Figures attached include:

- Figure 1 – Phase One Property Location Map;
- Figure 2 – Phase One Study Area Land Use Map;
- Figure 3 – Phase One Property Layout Plan;
- Figure 4 – Topographical Map;
- Figure 5 – Phase One Conceptual Site Model; and
- Figure 6 – Phase One Conceptual Site Model – Expanded View.

As shown on Figure 3, structures on the Phase One Property include the Site building with a small portion of the northwest corner extending off the Phase One Property.

ii. identify and locate water bodies located in whole or in part on the phase one study area;

Figure 4 is a Topographical Map showing the topography and water bodies in the Phase One Study Area and beyond. A portion of Hager Creek is located approximately 20 metres to the west of the Phase One Property and eventually empties into Lake Ontario approximately 4 kilometres south of the Phase One Property.

iii. identify and locate any areas of natural significance located in whole in whole or in part on the phase one study area;

The Region of Halton indicated that there is a Regional Natural Heritage System within 30 metres of the Phase One Property (i.e., the ravine on the west side of the larger 1600 Kerns Road property), and stated that this is an environmentally sensitive area.

iv. locate any drinking water wells at the phase one property;

Watters Environmental obtained database information provided in the EcoLog ERIS report and conducted a search of the Ontario Ministry of the Environment, Conservation and Parks (MECP) Well Records database to determine the presence of current and former wells on the Phase One Property or Phase One Study Area.

No current or former wells were noted to be present on the Phase One Property or within the Phase One Study Area.

v. show roads, including names, within the phase one study area;

Roads within the Phase One Study Area are shown in Figure 2. As shown on Figure 2, access to the Phase One Property is provided by Four Seasons Drive which borders the north side of the Phase One Property, and via Kerns Road which borders the east side of the Phase One Property.

vi. show uses of properties adjacent to the phase one property;

As shown on Figure 2, Four Seasons Road borders the Phase One Property to the north, with residential properties further to the north. Kerns Road borders the Phase One Property to the east, with residential properties further to the east. A residential townhouse complex borders the Phase One Property to the south, and the remainder of the 1600 Kerns Road property (i.e., a ravine, Hager

Creek, and a piece of land dedicated to Conservation Halton) borders the Phase One Property to the west, with residential properties further west.

vii. identify and locate areas where any potentially contaminating activity has occurred, and show tanks in such areas; and

As shown on the Phase One Conceptual Site Model (Figures 5 and6), PCAs located on the Phase One Property and on surrounding properties are as follows:

- #55: Transformer Manufacturing, Processing and Use (a pad-mounted transformer is located on the south-central portion of the Phase One Property);
- #58: Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners (a closed landfill is located in the north-central portion of the Phase One Property); and
- #58: Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners (the above-noted landfill extends north of the Phase One Property across Four Seasons Drive).

viii. identify and locate any areas of potential environmental concern

As shown, on Figures 5 and 6, APECs on the Phase One Property are as follows:

- **APEC 1A**: Closed landfill located on the north-central portion of the Phase One Property;
- **APEC 1B**: The off-Site portion of the landfill to the north results in an APEC on the north-central portion of the Phase One Property (i.e., same as APEC 1A); and
- **APEC 2**: Pad-mounted transformer located on the south-central portion of the Phase One Property.

2. Provided a description of and assessment of,

i. any areas where potentially contaminating activity on or potentially affecting the phase one property has occurred;

A closed landfill is present on the north-central portion of the Phase One Property (i.e., PCA 1 – APEC 1A). The landfill extends off-Site north of the Phase One Property, under the residential houses across Four Seasons Drive (i.e., PCA 1B – APEC 1B). The fill material consists of re-worked clayey silt soil with solid waste debris, such as glass, brick, ceramics and ash. No visual or olfactory evidence of hydrocarbon or solvent impacts or decomposable organic wastes were identified in Exp's boreholes drilled within the landfill area. Also, the landfill document provided by the MECP indicated that methane gas testing conducted in boreholes and within residential homes confirmed that methane was not detected.

A pad-mounted transformer is located on the south-central portion of Phase One Property (i.e., PCA 2 – APEC 2). The appearance and relatively good condition of this transformer suggests that it may have been installed at some point after 1980, when PCBs were banned from electrical equipment. However, the original transformer installed when the 1600 Kerns Road property was developed in 1975 may have contained PCBs.

ii. any contaminants of potential concern;

Contaminants of potential concern are summarized as follows:

- PCA 1A (APEC 1A) – Soil and Groundwater – PHCs F1 to F4, PAHs, VOCs, THMs, BTEX, Metals, As, Sb, Se, B(HWS), Cr(VI), Hg, CN-, EC, SAR, Na and Cl-;
- PCA 1B (APEC 1B) – Soil and Groundwater – PHCs F1 to F4, PAHs, VOCs, THMs, BTEX, Metals, As, Sb, Se, B(HWS), Cr(VI), Hg, CN-, EC, SAR, Na and Cl-; and
- PCA 2 – Soil – PCBs and PHCs.

iii. the potential for underground utilities, if any present, to affect contaminant distribution and transport;

Watters Environmental anticipates that the underground utilities at the Phase One Property would be no greater than about 2 to 3 metres below ground surface and the shallow groundwater is anticipated to be at a greater depth, based on the water conditions encountered by Exp. As such, Watters Environmental does not anticipate that subsurface utilities on the Phase One Property would act as a preferential pathway for the migration of contaminated groundwater.

iv. available regional or site specific geological and hydrogeological information; and

Based on a review of the online topographic map from the NRC, the Phase One Property is situated at an elevation of approximately 130 mamsl, and is relatively flat with surface drainage to catch basins located within the Phase One Property or to catch basins along Four Seasons Drive and Kerns Road. The surrounding properties to the east were at a relatively similar grade with the Phase One Property. Properties to the north of the Phase One Property are generally at a higher elevation than the Phase One Property, and properties to the south the Phase One Property are generally at a lower elevation than the Phase One Property. The land to the west of the Phase One Property (i.e., the ravine on the larger part of the 1600 Kerns Road property) is at a much lower elevation, as it slopes down into Hager Creek.

Based on the general topography of the Phase One Property and surrounding area, Watters Environmental infers that the near-surface groundwater at the Phase One Property flows to the west, following the local topographic gradient towards Hager Creek located approximately 20 metres to the west of the western boundary of the Phase One Property.

A review of the MNDM Surficial Geology map on the Google Earth Database indicates that the overburden in the area of the Phase One Property consists of clay to silt-textured till (derived from glaciolacustrine deposits or shale).

Bedrock in the vicinity of the Phase One Property is expected to be shale, limestone, dolostone, and siltstone of the Queenston Formation. As noted in Section 4.1.5, Exp encountered bedrock in some of their boreholes drilled on the Phase One Property at depths ranging from approximately 8.77 to 11.77 mbgs.

v. how any uncertainty or absence of information obtained in each of the components of the phase one environmental site assessment could affect the validity of the model.

There are no uncertainties or absence of information in the completion of this Phase One Environmental Site Assessment that could affect the validity of the Phase One CSM.

8.0 CONCLUSIONS

8.1 Whether Phase Two Environmental Site Assessment Required Before Record of Site Condition Submitted

Based on the PCAs identified in relation to the current and historical activities at the Phase One Property and on nearby neighbouring properties within the Phase One Study Area, and the APECs that they represent, completion of a Phase Two ESA, including soil and groundwater sampling and analyses, will be required before a Record of Site Condition can be submitted.

8.2 Record of Site Condition Based On Phase One Environmental Site Assessment Alone

As noted in Section 8.1 above, the filing of a Record of Site Condition cannot be completed with a Phase One Environmental Site Assessment alone.

8.3 Signatures

Prepared by:

Kevin Sue, B.Eng.
Project Manager

LICENSED PROFESSIONAL ENGINEER
H. Y. WONG
PROVINCE OF ONTARIO

Basil Wong, M.Eng., P.Eng.
Vice President – Technical Services

9.0 REFERENCES AND OTHER SOURCES OF INFORMATION

1. City of Burlington Interactive Maps, (https://burlington.maps.arcgis.com/apps/MapSeries/index.html?appid=1d1783b1e626434f95076cba33a5e540).

2. City of Burlington Official Plan (2008). https://www.burlington.ca/en/services-for-you/Official-Plan.asp.

3. Exp Services Inc. (Exp). *DRAFT Phase I Environmental Site Assessment, 1600 Kerns Road, Burlington, ON*. September 7, 2018.

4. Exp. *Slope Stability Analysis, Proposed Residential Redevelopment, 1600 Kerns Road, City of Burlington, Ontario*. October 18, 2018.

5. Exp. *Chemical Testing, 1600 Kerns Road, Burlington, Ontario*. November 2, 2018.

6. Exp. *DRAFT Environmental Subsurface Investigation, 1600 Kerns Road, Burlington, Ontario*. December 12, 2018.

7. Freeze, R. Allan, and Cherry, John A. *Groundwater*. 1979.

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13. Ontario, 2012a. *Environmental Protection Act*, R.S.O. 1990.

14. Ontario, 2012b. Ontario Regulation 153/04, Records of Site Condition – Part XV.1 of the Act.

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10.0 QUALIFICATIONS AND LIMITATIONS

Watters Environmental has prepared this report for the exclusive use of FGL Kerns Inc. in evaluating the environmental condition of the Phase One Property at the time of the Site reconnaissance. Watters Environmental will not be responsible for the use of this report by any other party, or reliance on or any decision to be made based on it without the prior written consent of Watters Environmental. Watters Environmental accepts no responsibility for damages, if any, by any other party as a result of decisions or actions based on this report.

This report presents an overview of issues of environmental concern, reflecting Watters Environmental's professional judgment using information reasonably available at the Phase One Property at the time of the Site reconnaissance. Watters Environmental has prepared this report using information understood to be factual and correct and shall not be responsible for conditions arising from information or facts that were concealed or not fully disclosed to Watters Environmental at the time of the Site reconnaissance. The scope of work completed by Watters Environmental did not involve a review or evaluation of health and safety issues at the Site, or activities required to bring the Site into environmental compliance.

The scope of work for the Phase One ESA did not include: conducting any intrusive investigations (e.g., cutting exploratory holes in solid walls) or preparing detailed cost estimates associated with addressing any environmental issues identified during the Phase One ESA; disassembling any equipment or building features for further assessment [e.g., removing light ballast covers to check for polychlorinated biphenyls (PCBs), opening boilers to inspect for asbestos-containing materials (ACMs), etc.]; conducting a detailed intrusive investigation for mould, including in concealed areas (e.g., behind wallpaper, inside wall cavities, etc.); collecting any soil, groundwater, building material or air samples for laboratory analysis (e.g., asbestos or mould analysis); preparing a scaled Site layout drawing; an assessment of biological features or related aspects of the natural environment; or an assessment of permits or licenses that may be required for re-development of the Phase One Property. The Phase One ESA also did not include any review of Building or Property Condition Assessment reports, or any aspects of the building and/or property that would normally be included as part of that type of engineering review.

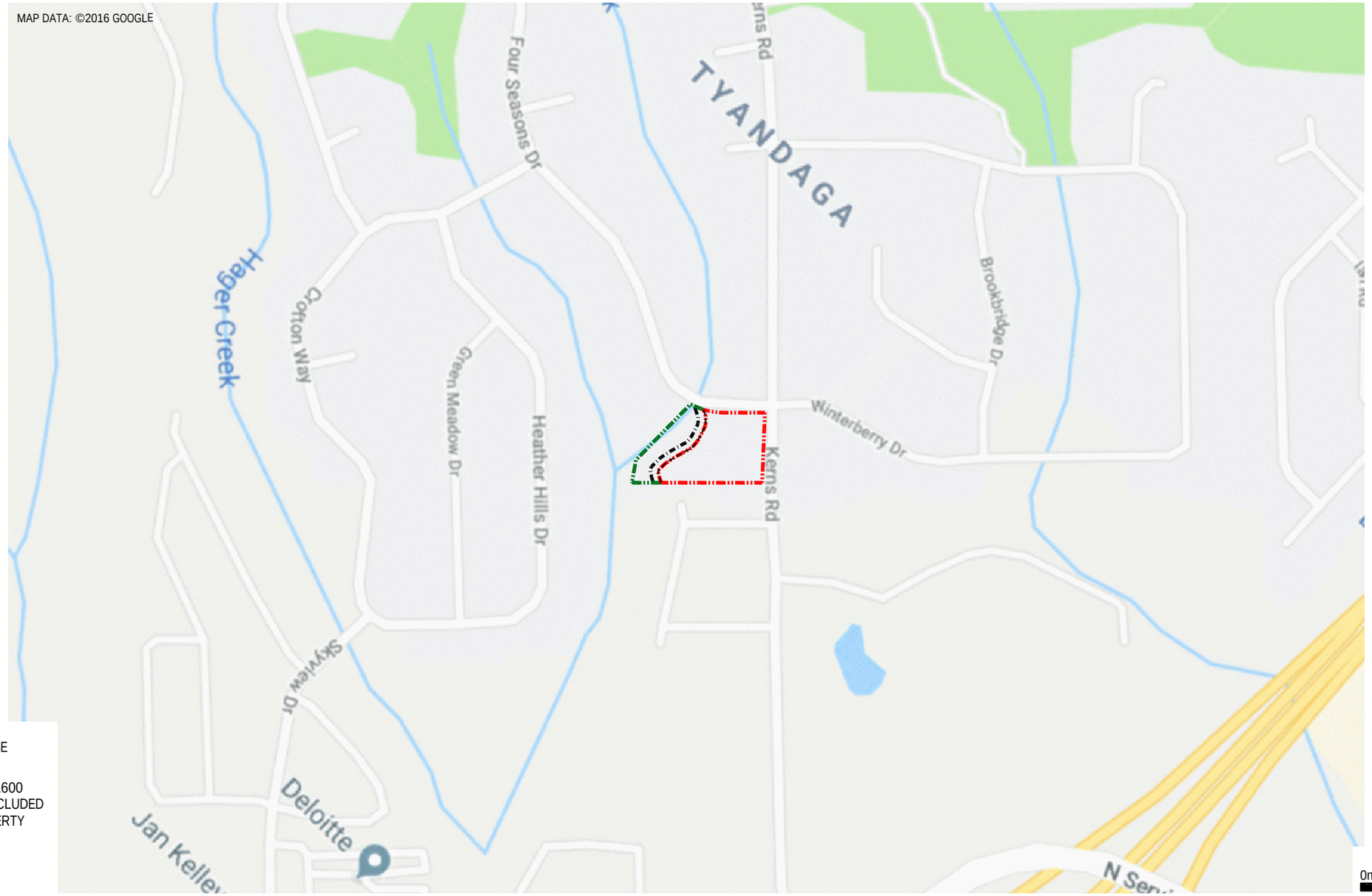
Any discussions regarding mould are based solely on visual and olfactory observations from a non-intrusive assessment. The assessment was conducted in readily accessible areas and did not involve intrusive or destructive activities, such as peeling back intact vinyl wallpaper or cutting holes in drywall walls or ceilings to inspect conditions in concealed areas. The comments regarding mould were based on the observations made at the time of the Site visit. Mould growth

conditions can change with time. No assurance is made regarding changes in conditions subsequent to the time of the Site visit.

It is important to note that conducting a Phase One ESA does not eliminate the possibility that negative environmental conditions and/or variations of conditions not described in this report are present on the Site.

This report is complete only as an entire document, and no section is intended to be used separately.

FIGURES



LEGEND:

- EXTENT OF THE PHASE ONE PROPERTY
- OTHER PORTION OF 1600 KERNS ROAD NOT INCLUDED IN PHASE ONE PROPERTY
- TOP OF BANK LINE
- 7.5m SETBACK FROM TOP OF BANK

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CHECKED: K. SUE
DATE: NOVEMBER 2020

CLIENT: FGL KERNS INC.

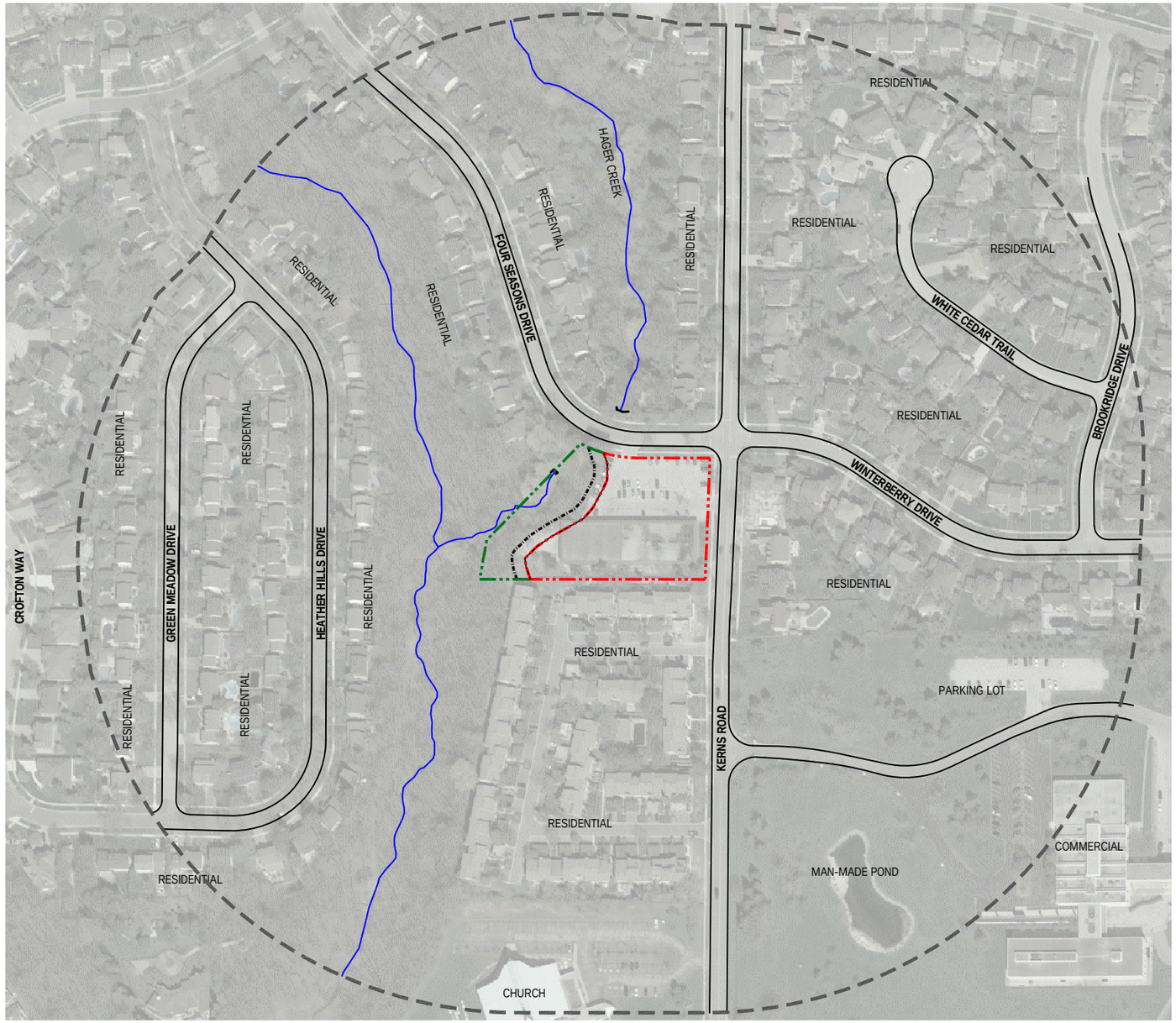
SITE ADDRESS: 1600 KERNS ROAD, PART 1 OF BLOCK G REGISTERED PLAN M-81, BURLINGTON. ONTARIO

REPORT NAME: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

FIGURE NAME: PHASE ONE PROPERTY LOCATION MAP

PROJECT No: 19-0087.02.01

FIGURE No: 1



LEGEND:

- EXTENT OF THE PHASE ONE PROPERTY
- OTHER PORTION OF 1600 KERNS ROAD NOT INCLUDED IN PHASE ONE PROPERTY
- 250m PHASE ONE STUDY AREA
- TOP OF BANK LINE
- 7.5m SETBACK FROM TOP OF BANK

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SITE ADDRESS: 1600 KERNS ROAD, PART 1 OF BLOCK G REGISTERED PLAN M-81, BURLINGTON. ONTARIO

REPORT NAME: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

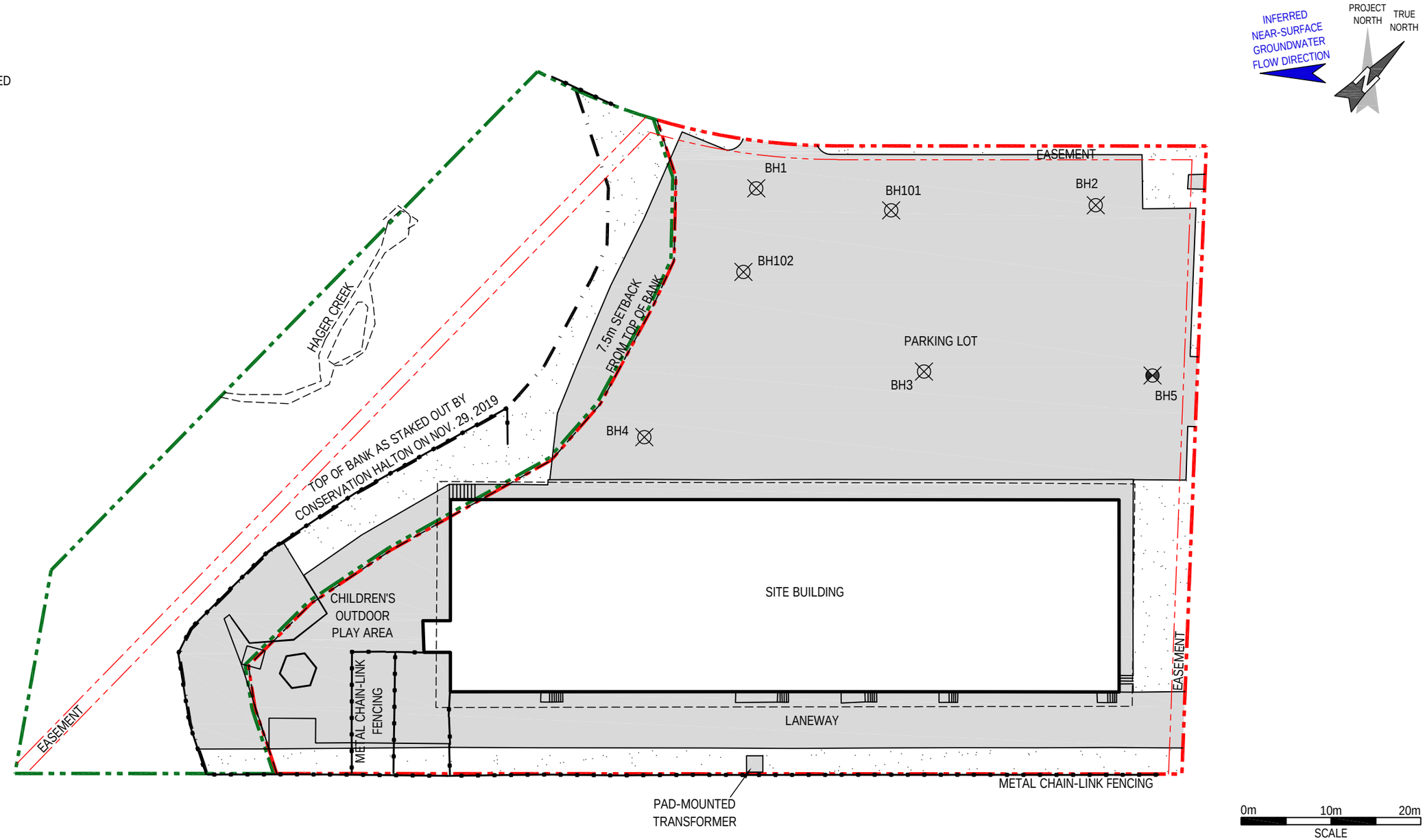
FIGURE NAME: PHASE ONE STUDY AREA LAND USE MAP

PROJECT No: 19-0087.02.01

FIGURE No: 2

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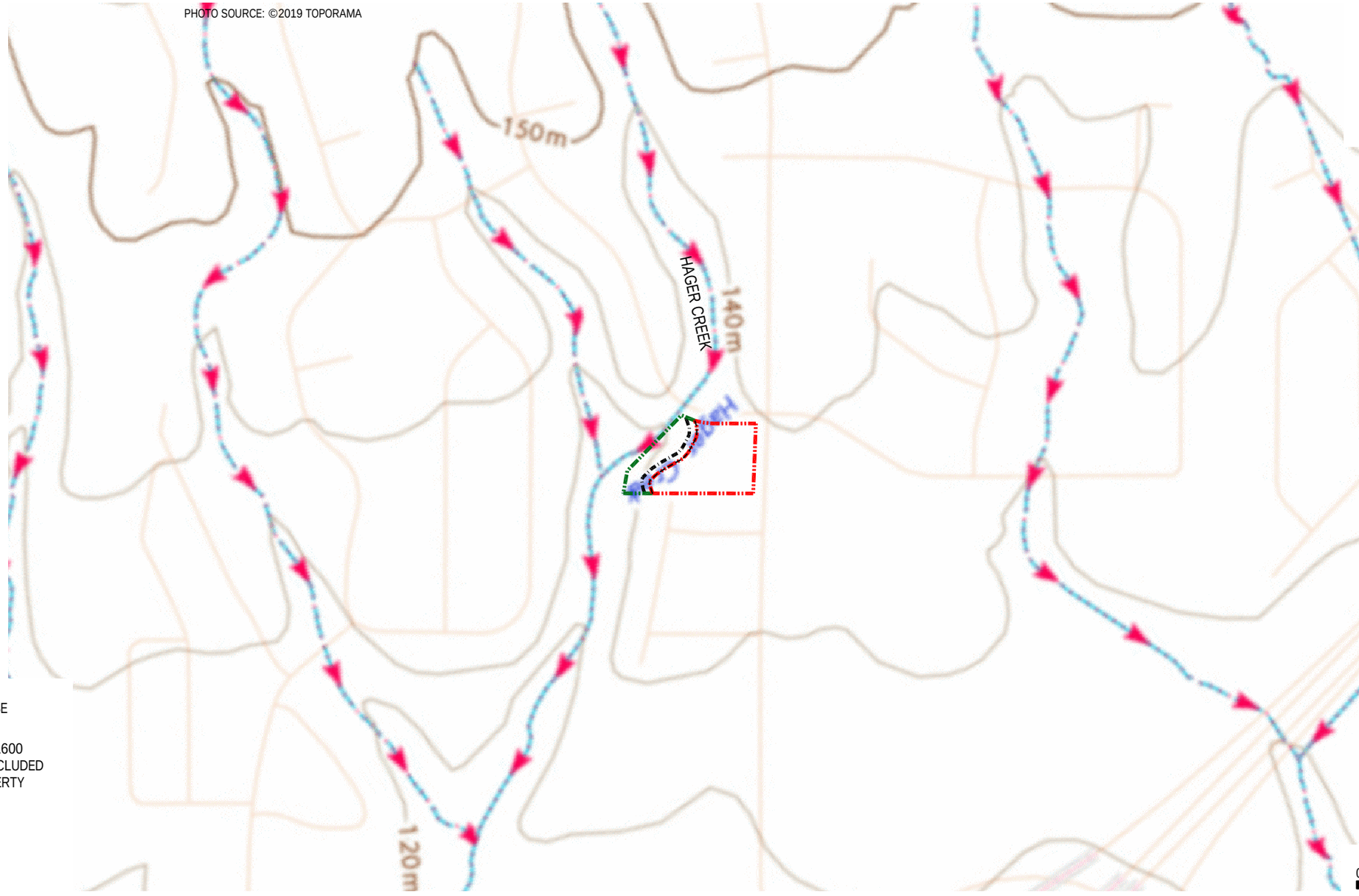
- EXTENT OF THE PHASE ONE PROPERTY
- OTHER PORTION OF 1600 KERNS ROAD NOT INCLUDED IN PHASE ONE PROPERTY
- TOP OF BANK LINE
- 7.5m SETBACK FROM TOP OF BANK
- LANDSCAPED AREA
- PAVED AREA
- EXP MONITORING WELL LOCATION
- EXP BOREHOLE LOCATION



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DRAWN: B. CALDERONE CHECKED: K. SUE DATE: NOVEMBER 2020	CLIENT: FGL KERNS INC. SITE ADDRESS: 1600 KERNS ROAD, PART 1 OF BLOCK G REGISTERED PLAN M-81, BURLINGTON. ONTARIO	REPORT NAME: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT	FIGURE NAME: PHASE ONE PROPERTY LAYOUT PLAN PROJECT No: 19-0087.02.01 FIGURE No: 3	



LEGEND:

- EXTENT OF THE PHASE ONE PROPERTY
- OTHER PORTION OF 1600 KERNS ROAD NOT INCLUDED IN PHASE ONE PROPERTY
- 250m PHASE ONE STUDY AREA
- TOP OF BANK LINE
- 7.5m SETBACK FROM TOP OF BANK

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SITE ADDRESS: 1600 KERNS ROAD, PART 1 OF BLOCK G REGISTERED PLAN M-81, BURLINGTON. ONTARIO

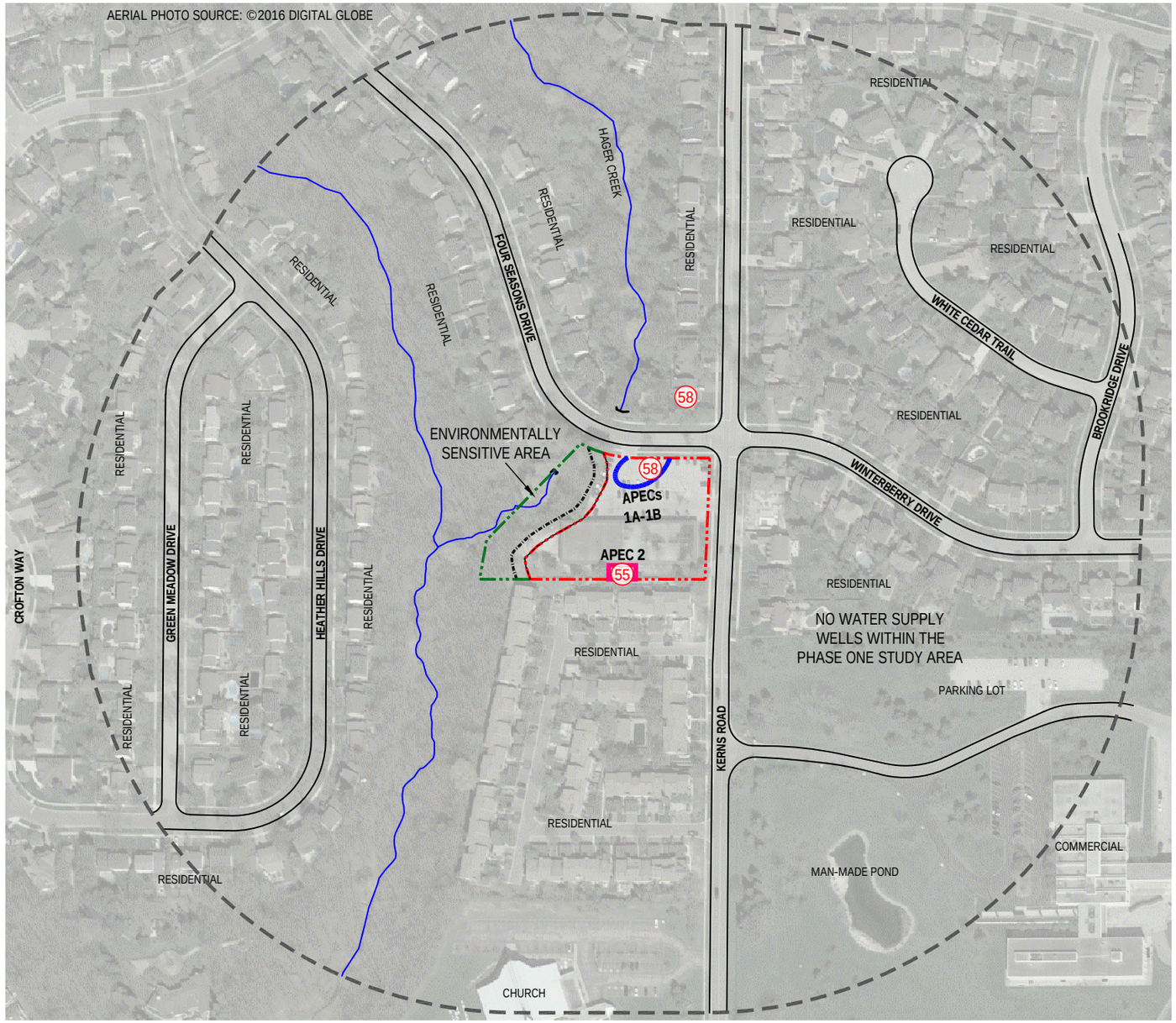
REPORT NAME: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

FIGURE NAME: TOPOGRAPHICAL MAP

PROJECT No: 19-0087.02.01

FIGURE No: 4

Summary of PCAs Resulting in APECs on the Phase One Property						
Report PCA #	APEC #	APEC Line / Colour	O. Reg. 153/04 Potentially Contaminating Activity	Location	Description	Potential Media Impacted
1A	1A		#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use biosoils as soil conditioners	On-Site PCA. APEC at north-central portion of the Phase One Property	Historic presence of a closed landfill on the north-central portion of the Phase One Property	Soil and Ground Water
1B	1B		#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use biosoils as soil conditioners	Off-Site PCA, APEC at north-central portion of the Phase One Property	Historic presence of a closed landfill north of the Phase Two Property (across Four Seasons Drive - same as on-site landfill)	Soil and Ground Water
2	2		#55 – Transformer Manufacturing, Processing and Use	On-Site PCA. APEC along the south-central property line.	One pad-mounted transformer located on the south-central property line	Soil



LEGEND:

- EXTENT OF THE PHASE ONE PROPERTY
- OTHER PORTION OF 1600 KERNS ROAD NOT INCLUDED IN PHASE ONE PROPERTY
- 250m PHASE ONE STUDY AREA
- TOP OF BANK LINE
- 7.5m SETBACK FROM TOP OF BANK
- (00) IDENTIFIED PCAs CONTRIBUTING TO AN APEC AT THE PHASE ONE PROPERTY.

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CLIENT: FGL KERNS INC.

SITE ADDRESS: 1600 KERNS ROAD, PART 1 OF BLOCK G REGISTERED PLAN M-81, BURLINGTON. ONTARIO

REPORT NAME: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

FIGURE NAME: PHASE ONE CONCEPTUAL SITE MODEL

PROJECT No: 19-0087.02.01

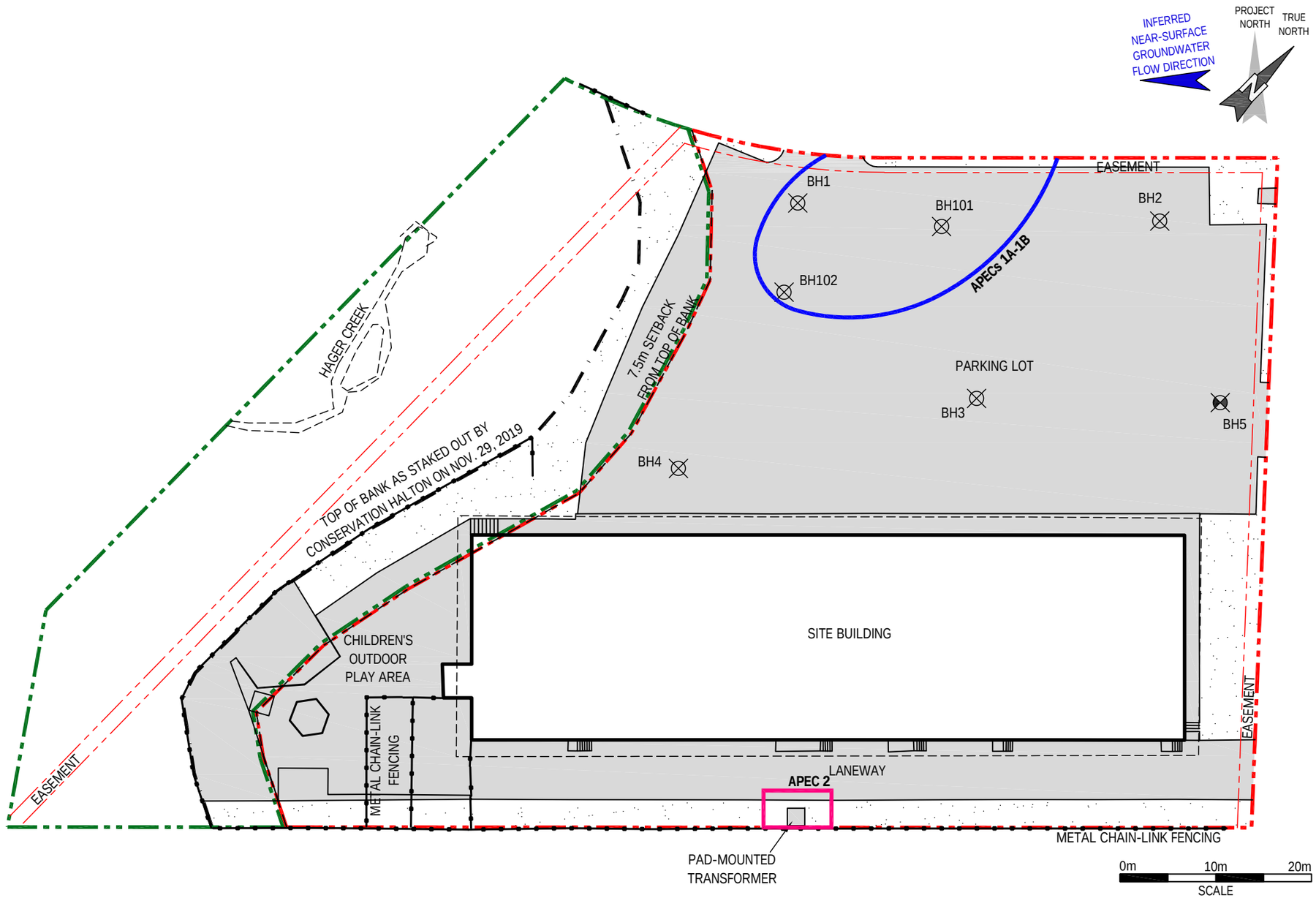
FIGURE No: 5

LEGEND:

- EXTENT OF THE PHASE ONE PROPERTY
- OTHER PORTION OF 1600 KERNS ROAD NOT INCLUDED IN PHASE ONE PROPERTY
- TOP OF BANK LINE
- 7.5m SETBACK FROM TOP OF BANK
- LANDSCAPED AREA
- PAVED AREA
- EXP MONITORING WELL LOCATION
- EXP BOREHOLE LOCATION

Summary of PCAs Resulting in APECs on the Phase One Property

Report PCA #	APEC #	APEC Line / Colour	O. Reg. 153/04 Potentially Contaminating Activity	Location	Description	Potential Media Impacted
1A	1A		#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use biosoils as soil conditioners	On-Site PCA. APEC at north-central portion of the Phase One Property	Historic presence of a closed landfill on the north-central portion of the Phase One Property	Soil and Ground Water
1B	1B		#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use biosoils as soil conditioners	Off-Site PCA, APEC at north-central portion of the Phase One Property	Historic presence of a closed landfill north of the Phase Two Property (across Four Seasons Drive - same as on-site landfill)	Soil and Ground Water
2	2		#55 – Transformer Manufacturing, Processing and Use	On-Site PCA. APEC along the south-central property line.	One pad-mounted transformer located on the south-central property line	Soil



WATTERS ENVIRONMENTAL GROUP INC®
9135 Keele St. Unit A1
Concord, ON. L4K 0J4
T 416 361 2407
F 416 361 2410

DRAWN: B. CALDERONE
CHECKED: K. SUE
DATE: NOVEMBER 2020

CLIENT: FGL KERNS INC.

SITE ADDRESS: 1600 KERNS ROAD, PART 1 OF BLOCK G REGISTERED PLAN M-81, BURLINGTON. ONTARIO

REPORT NAME: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

FIGURE NAME: PHASE ONE CONCEPTUAL SITE MODEL - EXPANDED VIEW

PROJECT No: 19-0087.02.01

FIGURE No: 6

APPENDIX A

Photographs

PHOTOGRAPHS

Photograph No. 1	
Date Taken: August 21, 2019	
Description: View of the multi-tenant commercial building and asphalt parking lot present on the Phase One Property.	
Looking Towards: Southwest	

Photograph No. 2	
Date Taken: August 21, 2019	
Description: View of the northwestern portion of the Phase One Property (i.e., parking lot) and the top of the ravine.	
Looking Towards: Northwest	

Site Address: Part 1 on the Survey and being part of Block G Registered Plan M-81, 1600 Kerns Road, in Burlington, Ontario

Project No.: 19-0087.02.01

PHOTOGRAPHS

Photograph No. 3 Date Taken: August 21, 2019 Description: View of the outdoor children's play area portion of the Phase One Property. Looking Towards: Northwest	

Photograph No. 4 Date Taken: August 21, 2019 Description: View of the pad-mounted transformer present on the south-central portion of the Phase One Property Looking Towards: South	

Site Address: Part 1 on the Survey and being part of Block G Registered Plan M-81, 1600 Kerns Road, in Burlington, Ontario

Project No.: 19-0087.02.01

APPENDIX B

Plan of Survey

PLAN OF SURVEY OF

PART OF BLOCK G
REGISTERED PLAN M-81
CITY OF BURLINGTON
REGIONAL MUNICIPALITY OF HALTON

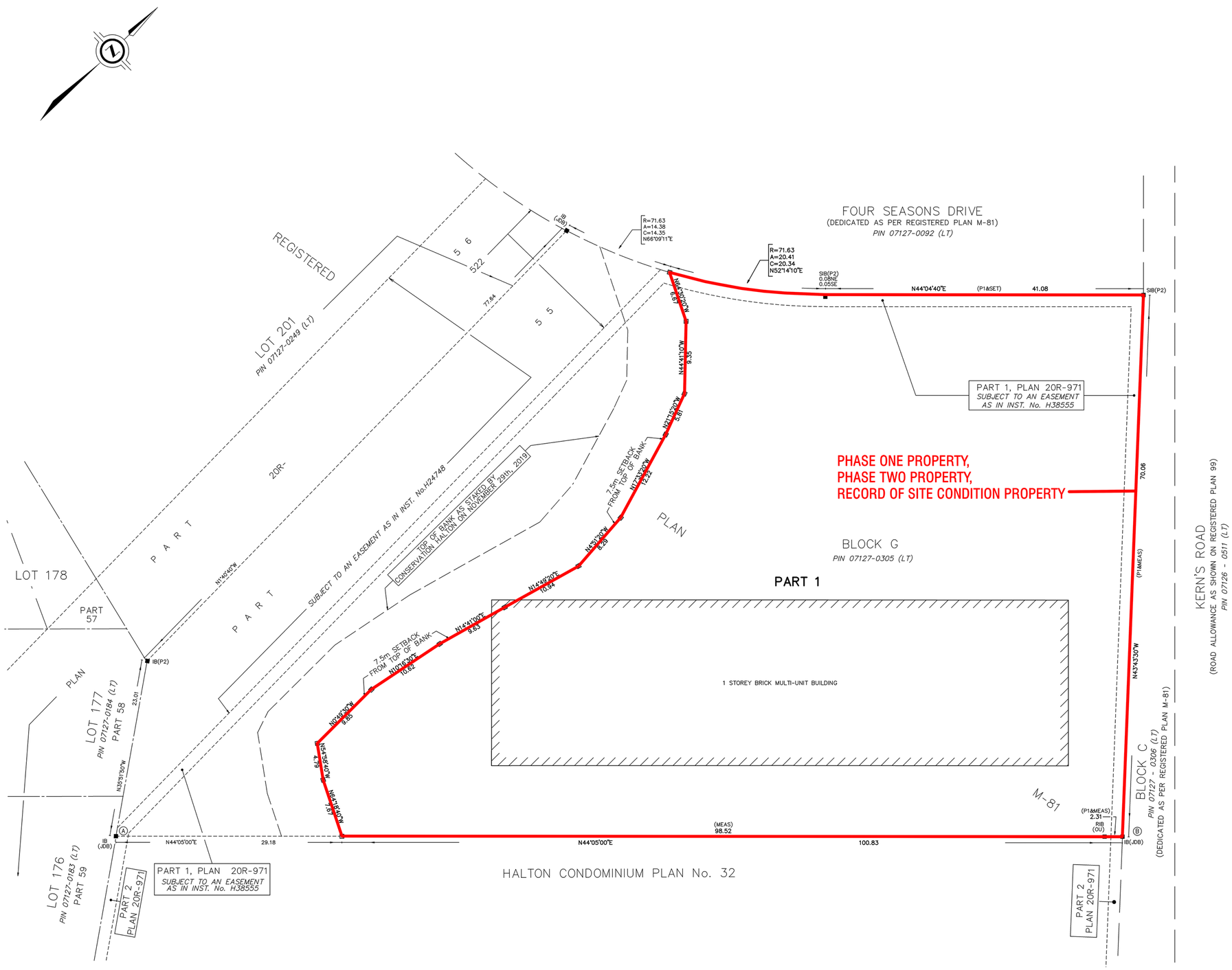
SCALE 1 : 250

5 0 5 10 15 metres

J. D. BARNES LIMITED

© COPYRIGHT

METRIC DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.



NOTES

BEARINGS ARE UTM GRID, DERIVED FROM (ORP's) OBSERVED REFERENCE POINTS A AND B, BY REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, NAD83 (CSRS)(2010.0).

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999896.

INTEGRATION DATA

OBSERVED REFERENCE POINTS (ORPs): UTM ZONE 17, NAD83 (CSRS) (2010.0).

COORDINATES TO URBAN ACCURACY PER SECTION 14 (2) OF O.REG 216/10.

POINT ID	EASTING	NORTHING
ORP (A)	594 129.13	4 799 213.70
ORP (B)	594 219.56	4 799 307.08

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT SET
SIB	DENOTES	STANDARD IRON BAR
SSIB	DENOTES	SHORT STANDARD IRON BAR
IB	DENOTES	IRON BAR
RIB	DENOTES	ROUND IRON BAR
CPW	DENOTES	CONCRETE PIN WITH WASHER IN ASPHALT
OU	DENOTES	ORIGIN UNKNOWN
JDB	DENOTES	J. D. BARNES LIMITED
WIT	DENOTES	WITNESS
P1	DENOTES	SURVEYOR'S REAL PROPERTY REPORT SHOWING TOPOGRAPHIC INFORMATION BY J. D. BARNES LTD., DATED SEPT. 18, 2018.
P2	DENOTES	REGISTERED PLAN M-81

SURVEY MONUMENTS PLANTED ARE IRON BARS UNLESS OTHERWISE NOTED.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.

2. THE SURVEY WAS COMPLETED ON .

DATE

THOMAS J. SALB
ONTARIO LAND SURVEYOR

J.D.BARNES LIMITED
SURVEYING MAPPING GIS
LAND INFORMATION SPECIALISTS
401 WHEELABRATOR WAY, SUITE A, MILTON, ON L9T 3C1
T: (905) 875-9955 F: (905) 875-9956 www.jdbarnes.com

DRAWN BY:	CHECKED BY:	REFERENCE NO.:
ARP		18-30-288-02-C
FILE: G:\18-30-288\02\Drawing\18-30-288-02-C.dgn		DATED: APRIL 2, 2020
		PLOTTED: 4/2/2020

APPENDIX C

EcoLog Environmental Risk Information Services Ltd. (EcoLog ERIS) Report

ENVIRONMENTAL RISK INFORMATION SERVICES

DATABASE REPORT

Project Property:	*19-0087.01.01* *19-0087.01.01 1600 Kerns Road,* *Burlington, Ontario* *Burlington ON L7P 3G9*
Project No:	*19-0087.01.01*
Report Type:	*RSC Report (Urban)*
Order No:	*20190821151*
Requested by:	*Watters Environmental Group Inc.*
Date Completed:	*August 26, 2019*

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

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Executive Summary

Property Information:

Project Property:	*19-0087.01.01* *19-0087.01.01 1600 Kerns Road, Burlington, Ontario Burlington ON L7P 3G9*
Project No:	*19-0087.01.01*

Order Information:

Order No:	*20190821151*
Date Requested:	*August 21, 2019*
Requested by:	*Watters Environmental Group Inc.*
Report Type:	*RSC Report (Urban)*

Historical/Products:

Topographic Map	*RSC Maps*

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.30km	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	0	0
CA	*Certificates of Approval*	Y	0	0	0
CDRY	*Dry Cleaning Facilities*	Y	0	0	0
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
EASR	*Environmental Activity and Sector Registry*	Y	0	0	0
EBR	*Environmental Registry*	Y	0	0	0
ECA	*Environmental Compliance Approval*	Y	0	0	0
EEM	*Environmental Effects Monitoring*	Y	0	0	0
EHS	*ERIS Historical Searches*	Y	0	0	0
EIIS	*Environmental Issues Inventory System*	Y	0	0	0
EMHE	*Emergency Management Historical Event*	Y	0	0	0
EPAR	*Environmental Penalty Annual Report*	Y	0	0	0
EXP	*List of TSSA Expired Facilities*	Y	0	0	0
FCON	*Federal Convictions*	Y	0	0	0
FCS	*Contaminated Sites on Federal Land*	Y	0	0	0
FOFT	*Fisheries & Oceans Fuel Tanks*	Y	0	0	0
FST	*Fuel Storage Tank*	Y	0	0	0
FSTH	*Fuel Storage Tank - Historic*	Y	0	0	0
GEN	*Ontario Regulation 347 Waste Generators Summary*	Y	0	17	17
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	0	0
LIMO	*Landfill Inventory Management Ontario*	Y	0	0	0
MINE	*Canadian Mine Locations*	Y	0	0	0

Database	Name	Searched	Project Property	Boundary to 0.30km	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
NEBP	National Energy Board Wells	Y	0	0	0
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	4	4
NPRI	National Pollutant Release Inventory	Y	0	0	0
OGWE	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	1	1
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	1	1
PINC	TSSA Pipeline Incidents	Y	0	2	2
PRT	Private and Retail Fuel Storage Tanks	Y	0	0	0
PTTW	Permit to Take Water	Y	0	0	0
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0
RSC	Record of Site Condition	Y	0	0	0
RST	Retail Fuel Storage Tanks	Y	0	0	0
SCT	Scott's Manufacturing Directory	Y	2	3	5
SPL	Ontario Spills	Y	0	7	7
SRDS	Wastewater Discharger Registration Database	Y	0	0	0
TANK	Anderson's Storage Tanks	Y	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	Y	0	0	0
VAR	TSSA Variances for Abandonment of Underground Storage Tanks	Y	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	Y	0	0	0
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	Y	0	1	1
WWIS	Water Well Information System	Y	0	0	0
	Total:		2	36	38

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev diff (m)	Page Number
1	SCT	PYRAMID PUMPS	1600 Kerns Rd Unit 3 Burlington ON L7P 3G9	-/0.0	0.28	18
1	SCT	PYRAMID PUMPS INC.	1600 KERNS RD UNIT 3 BURLINGTON ON L7P 3G9	-/0.0	0.28	18

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
2	SPL	The Regional Municipality of Halton	1856 Four Seasons Dr Burlington ON	WSW/28.0	-3.44	18
3	PES	GOLDEN HORSESHOE WILDLIFE CONTROL	1580 KERNS ROAD, #2, P.O. BOX 40548 BURLINGTON ON L7P3A7	SSE/51.4	-0.98	19
4	SCT	Electro-Pulse Enterprises Limited	1572 Kerns Rd Unit 2 Burlington ON L7P 3A7	ESE/73.5	-3.55	19
4	SCT	ELECTRO-PULSE ENTERPRISES	1572 KERNS RD UNIT 2 BURLINGTON ON L7P 3A7	ESE/73.5	-3.55	19
4	SCT	Electro-Pulse Enterprises Ltd	1572 Kerns Rd Unit 2 Burlington ON L7P 3A7	ESE/73.5	-3.55	20
4	SPL	Union Gas Limited	1572 Kearns Rd, Unit #7 Burlington ON	ESE/73.5	-3.55	20
5	SPL	BURLINGTON HYDRO-ELECTRIC COMM	1850 HEATHER HILLS TRANSFORMER BURLINGTON CITY ON L7P 2Y9	SW/120.7	0.66	20
6	PINC		1800 HEATHER HILLS DR, BURLINGTON ON	SSW/188.5	-3.54	21
6	PINC		1800 HEATHER HILLS DRIVE, BURLINGTON ON	SSW/188.5	-3.54	21
6	SPL	Union Gas Limited	1800 Heatherhills Burlington ON	SSW/188.5	-3.54	22
7	SPL	Burlington Hydro Inc.	1850 Green Meadow Road Burlington ON L7P 2Y8	SW/203.9	2.27	22
8	SPL	Union Gas Limited	1012 Dell Court Burlington ON	SW/279.7	6.39	23

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
9	WDSH		23 2 SDS BURLINGTON ON	SE/295.1	-15.70	23
10	GEN	AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	E/297.0	-8.77	24
10	GEN	AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	E/297.0	-8.77	24
10	GEN	AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	E/297.0	-8.77	25
10	GEN	STELCO INC.	RESEARCH & DEVELOPMENT CENTRE 1375 KERNS ROAD, P.O. BOX 2030 BURLINGTON ON L8N 3T1	E/297.0	-8.77	26
10	GEN	AIC LTD.	1375 KERNS ROAD BURLINGTON ON L7P 4V7	E/297.0	-8.77	26
10	GEN	AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	E/297.0	-8.77	27
10	GEN	STELCO INC.	TECHNOLOGY CENTER, 1375 KERNS ROAD C/O P.O.BOX 2030 HAMILTON ON L8N 3T1	E/297.0	-8.77	27
10	GEN	AIC LTD.	1375 KERNS ROAD BURLINGTON ON L7P 4V7	E/297.0	-8.77	28
10	GEN	STELCO INC.	TECHNOLOGY CENTER 1375 KERNS ROAD, P.O. BOX 2030 BURLINGTON ON L8N 3T1	E/297.0	-8.77	28
10	GEN	AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	E/297.0	-8.77	29
10	GEN	AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	E/297.0	-8.77	29

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
10	GEN	AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	E/297.0	-8.77	30
10	GEN	STELCO (OUT OF BUS) 36-214	TECHNOLOGY CENTER, 1375 KERNS ROAD BURLINGTON C/O PO BOX 2030 HAMILTON ON L8N 3T1	E/297.0	-8.77	30
10	GEN	STELCO INC. (OUT OF BUSINESS)	TECHNOLOGY CENTER 1375 KERNS ROAD BURLINGTON ON L7P 3H8	E/297.0	-8.77	31
10	GEN	STELCO INC. 36-214	TECHNOLOGY CENTER, 1375 KERNS ROAD BURLINGTON C/O PO BOX 2030 HAMILTON ON L8N 3T1	E/297.0	-8.77	32
10	GEN	AIC LTD.	1375 KERNS ROAD BURLINGTON ON L7P 4V7	E/297.0	-8.77	32
10	GEN	AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON	E/297.0	-8.77	33
10	NPCB	STEEL COMPANY OF CANADA	RESEARCH & DEVELOPMENT; 1375 KERNS ROAD BURLINGTON ON L7P 3H8	E/297.0	-8.77	34
10	NPCB	STEEL COMPANY OF CANADA	1375 KERNS ROAD KERNS ROAD BURLINGTON ON L7P 3H8	E/297.0	-8.77	34
10	NPCB	SELTECK(STELCO)	1375 KERNS ROAD BURLINGTON ON L7P 3H8	E/297.0	-8.77	34
10	OPCB	SELTECK(STELCO)	1375 KERNS ROAD BURLINGTON ON L7P 3H8	E/297.0	-8.77	34
10	SPL	Aic Group of Funds	1375 Kerns Road AIC GROUP OF FUNDS Burlington ON L7P 4V7	E/297.0	-8.77	35
11	NPCB	STEEL COMPANY OF CANADA	RESEARCH & DEVELOPMENT; KERNS ROAD BURLINGTON ON	E/300.0	-8.77	35

Executive Summary: Summary By Data Source

GEN - Ontario Regulation 347 Waste Generators Summary

A search of the GEN database, dated 1986-Jul 31, 2019 has found that there are 17 GEN site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON	297.0	10
AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	297.0	10
STELCO INC. 36-214	TECHNOLOGY CENTER, 1375 KERNS ROAD BURLINGTON C/O PO BOX 2030 HAMILTON ON L8N 3T1	297.0	10
STELCO INC. (OUT OF BUSINESS)	TECHNOLOGY CENTER 1375 KERNS ROAD BURLINGTON ON L7P 3H8	297.0	10
STELCO (OUT OF BUS) 36-214	TECHNOLOGY CENTER, 1375 KERNS ROAD BURLINGTON C/O PO BOX 2030 HAMILTON ON L8N 3T1	297.0	10
AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	297.0	10
AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	297.0	10
AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	297.0	10
STELCO INC.	TECHNOLOGY CENTER 1375 KERNS ROAD, P.O. BOX 2030 BURLINGTON ON L8N 3T1	297.0	10

Site	Address	Distance (m)	Map Key
AIC LTD.	1375 KERNS ROAD BURLINGTON ON L7P 4V7	297.0	10
STELCO INC.	TECHNOLOGY CENTER, 1375 KERNS ROAD C/O P.O.BOX 2030 HAMILTON ON L8N 3T1	297.0	10
AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	297.0	10
AIC LTD.	1375 KERNS ROAD BURLINGTON ON L7P 4V7	297.0	10
STELCO INC.	RESEARCH & DEVELOPMENT CENTRE 1375 KERNS ROAD, P.O. BOX 2030 BURLINGTON ON L8N 3T1	297.0	10
AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	297.0	10
AIC Global Holdings Inc	1375 KERNS ROAD BURLINGTON ON L7P 4V7	297.0	10
AIC LTD.	1375 KERNS ROAD BURLINGTON ON L7P 4V7	297.0	10

NPCB - National PCB Inventory

A search of the NPCB database, dated 1988-2008* has found that there are 4 NPCB site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
STEEL COMPANY OF CANADA	RESEARCH & DEVELOPMENT; 1375 KERNS ROAD BURLINGTON ON L7P 3H8	297.0	10
STEEL COMPANY OF CANADA	1375 KERNS ROAD KERNS ROAD BURLINGTON ON L7P 3H8	297.0	10

Site	Address	Distance (m)	Map Key
SELTECK(STELCO)	1375 KERNS ROAD BURLINGTON ON L7P 3H8	297.0	10
STEEL COMPANY OF CANADA	RESEARCH & DEVELOPMENT; KERNS ROAD BURLINGTON ON	300.0	11

OPCB - Inventory of PCB Storage Sites

A search of the OPCB database, dated 1987-Oct 2004; 2012-Dec 2013 has found that there are 1 OPCB site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
SELTECK(STELCO)	1375 KERNS ROAD BURLINGTON ON L7P 3H8	297.0	10

PES - Pesticide Register

A search of the PES database, dated 1988-Mar 2019 has found that there are 1 PES site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
GOLDEN HORSESHOE WILDLIFE CONTROL	1580 KERNS ROAD, #2, P.O. BOX 40548 BURLINGTON ON L7P3A7	51.4	3

PINC - TSSA Pipeline Incidents

A search of the PINC database, dated Feb 28, 2017 has found that there are 2 PINC site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	1800 HEATHER HILLS DR, BURLINGTON ON	188.5	6
	1800 HEATHER HILLS DRIVE, BURLINGTON ON	188.5	6

Site	Address	Distance (m)	Map Key

SCT - Scott's Manufacturing Directory

A search of the SCT database, dated 1992-Mar 2011* has found that there are 5 SCT site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
PYRAMID PUMPS INC.	1600 KERNS RD UNIT 3 BURLINGTON ON L7P 3G9	0.0	1
PYRAMID PUMPS	1600 Kerns Rd Unit 3 Burlington ON L7P 3G9	0.0	1
Electro-Pulse Enterprises Limited	1572 Kerns Rd Unit 2 Burlington ON L7P 3A7	73.5	4
ELECTRO-PULSE ENTERPRISES	1572 KERNS RD UNIT 2 BURLINGTON ON L7P 3A7	73.5	4
Electro-Pulse Enterprises Ltd	1572 Kerns Rd Unit 2 Burlington ON L7P 3A7	73.5	4

SPL - Ontario Spills

A search of the SPL database, dated 1988-Feb 2019 has found that there are 7 SPL site(s) within approximately 0.30 kilometers of the project property.

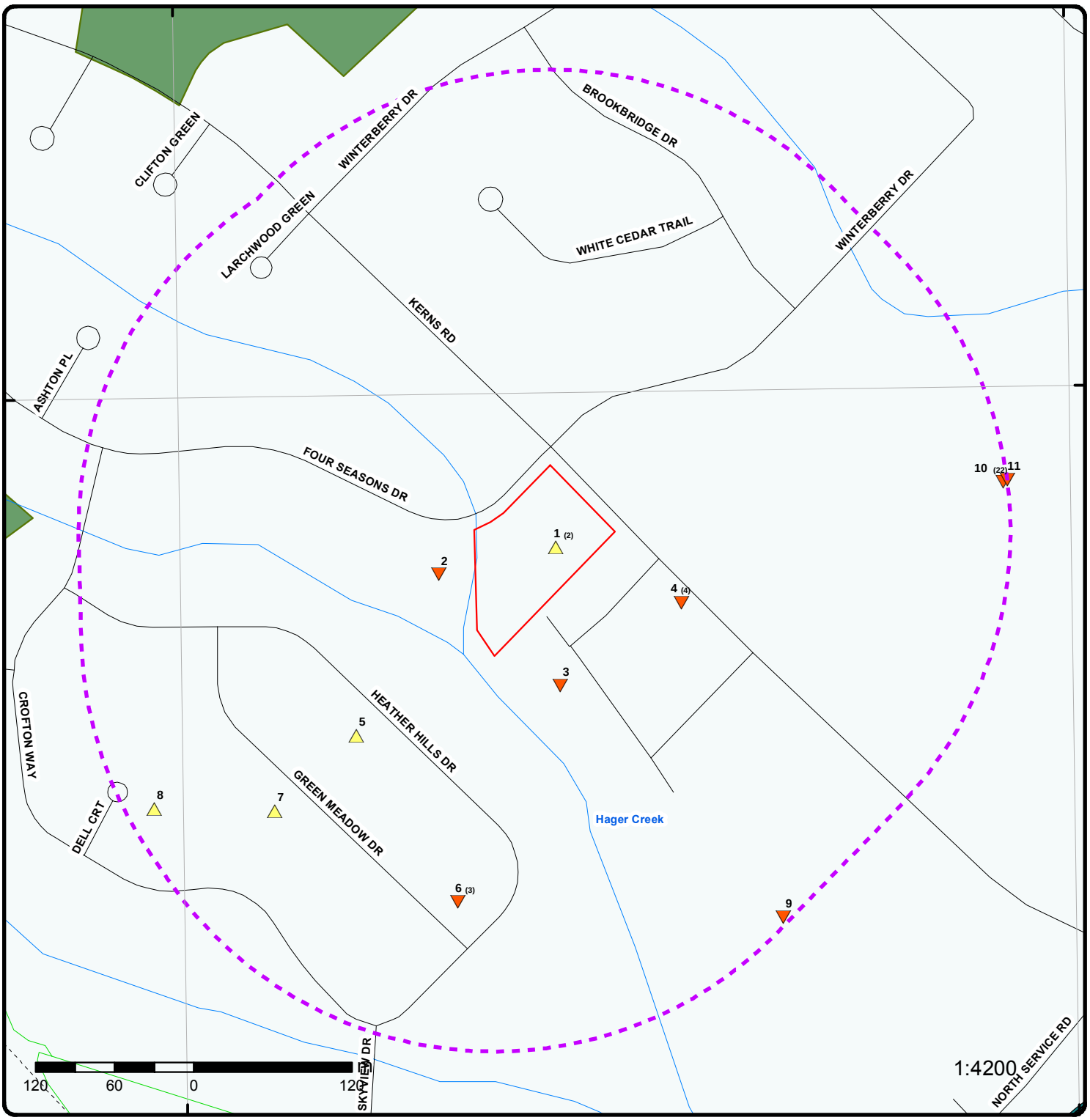
Site	Address	Distance (m)	Map Key
The Regional Municipality of Halton	1856 Four Seasons Dr Burlington ON	28.0	2
Union Gas Limited	1572 Kearns Rd, Unit #7 Burlington ON	73.5	4
BURLINGTON HYDRO-ELECTRIC COMM	1850 HEATHER HILLS TRANSFORMER BURLINGTON CITY ON L7P 2Y9	120.7	5

Site	Address	Distance (m)	Map Key
Union Gas Limited	1800 Heatherhills Burlington ON	188.5	6
Burlington Hydro Inc.	1850 Green Meadow Road Burlington ON L7P 2Y8	203.9	7
Union Gas Limited	1012 Dell Court Burlington ON	279.7	8
Aic Group of Funds	1375 Kerns Road AIC GROUP OF FUNDS Burlington ON L7P 4V7	297.0	10

WDSH - Waste Disposal Sites - MOE 1991 Historical Approval Inventory

A search of the WDSH database, dated Up to Oct 1990* has found that there are 1 WDSH site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	23 2 SDS BURLINGTON ON	295.1	9



Map : 0.3 Kilometer Radius

Order No: 20190821151

Address: 19-0087.01.01 1600 Kerns Road, Burlington, Ontario, Burlington, ON, L7P 3G9

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES

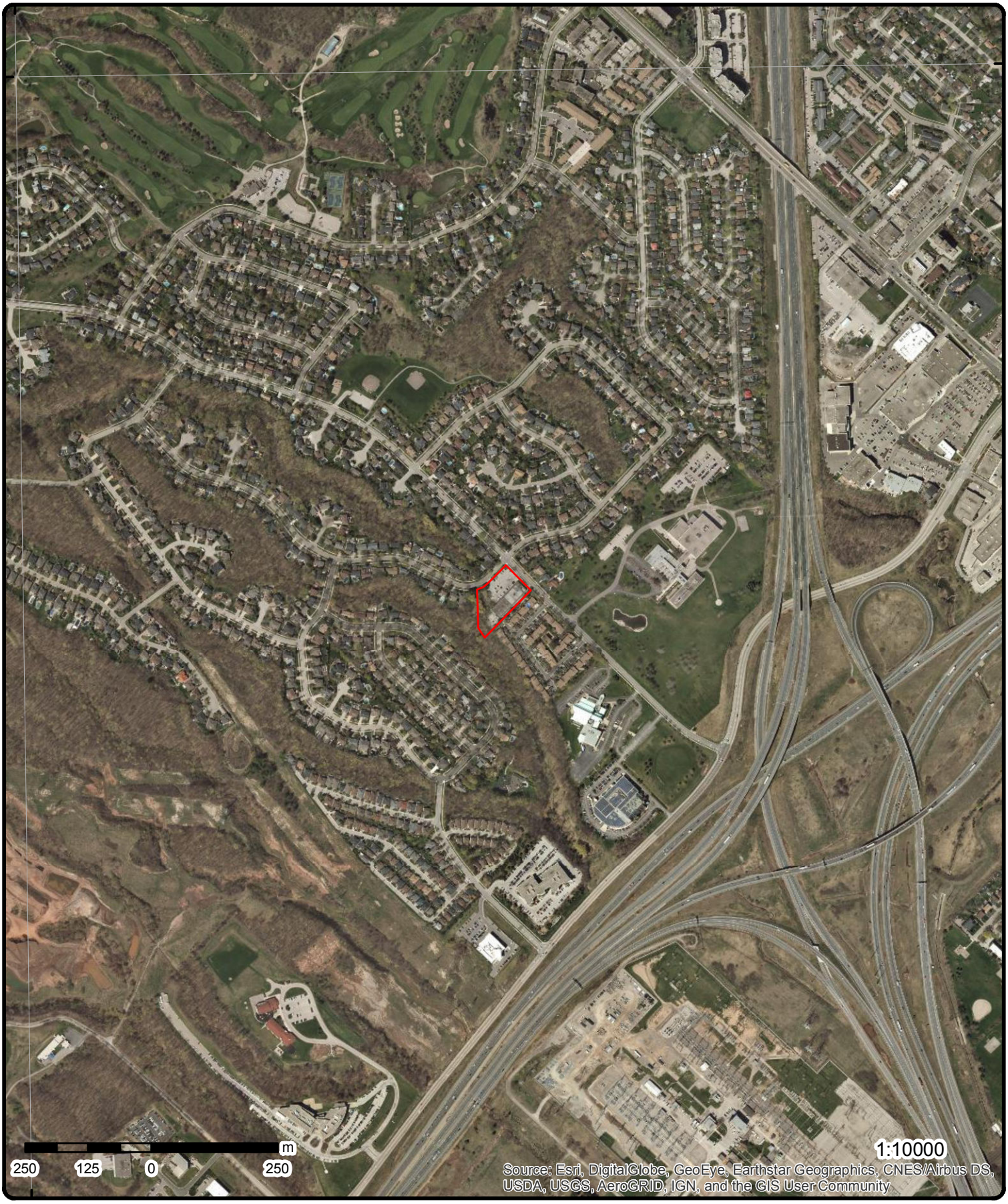
- Expressway
- Principal Highway
- Secondary Highway
- Major Road
- Local road
- Trail
- Proposed Road
- Ferry Route/Ice Road
- Industrial and Resource - Regions
- Main Line
- Sidetrack
- Transit Line
- Abandoned Line
- National Park
- Provincial or Territorial Park
- Other Park
- Golf Course or Driving Range
- Park or Sports Field
- Other Recreation Area

Source: © 2015 DMTI Spatial Inc.

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79°51'W

43°21'N



43°21'N

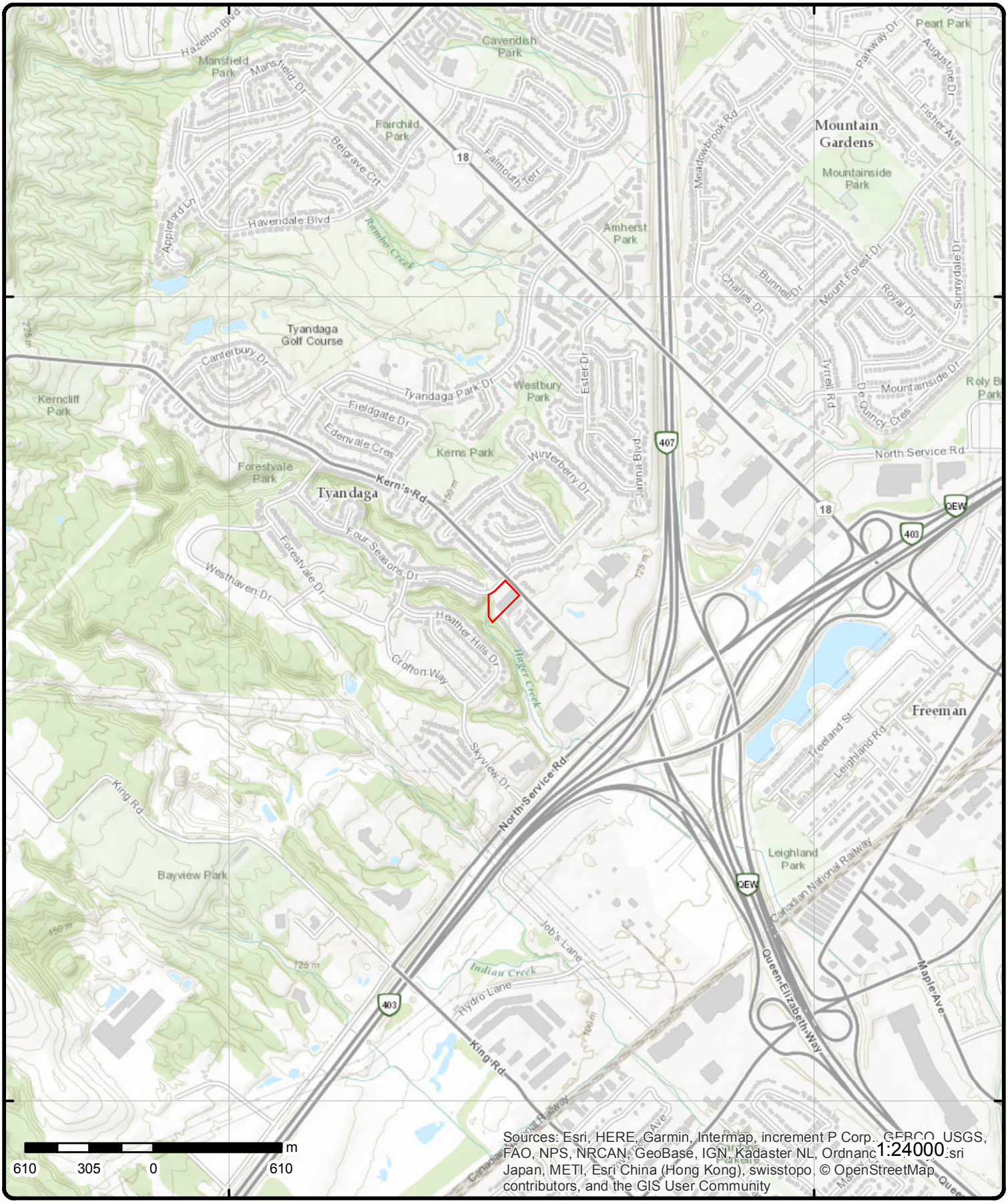
Aerial (2017)

Order No: 20190821151

Address: 19-0087.01.01 1600 Kerns Road, Burlington, Ontario, Burling

Source: ESRI World Imagery

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Topographic Map

Order No: 20190821151

Address: 19-0087.01.01 1600 Kerns Road, Burlington, Ontario, Burling

Source: ESRI World Topographic Map

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES
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Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	1 of 2	-/0.0	136.8 / 0.28	PYRAMID PUMPS 1600 Kerns Rd Unit 3 Burlington ON L7P 3G9	SCT

Established: 1983
Plant Size (ft²): 1100
Employment: 1

--Details--
Description: Pump and Compressor Manufacturing
SIC/NAICS Code: 333910

Description: Industrial Machinery, Equipment and Supplies Wholesaler-Distributors
SIC/NAICS Code: 417230

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	2 of 2	-/0.0	136.8 / 0.28	PYRAMID PUMPS INC. 1600 KERNS RD UNIT 3 BURLINGTON ON L7P 3G9	SCT

Established: 1983
Plant Size (ft²): 2000
Employment: 3

--Details--
Description: PUMPS AND PUMPING EQUIPMENT
SIC/NAICS Code: 3561

Description: INDUSTRIAL MACHINERY AND EQUIPMENT
SIC/NAICS Code: 5084

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
2	1 of 1	WSW/28.0	133.0 / -3.44	The Regional Municipality of Halton 1856 Four Seasons Dr Burlington ON	SPL

Ref No: 2862-9W9GZT
Site No: NA
Incident Dt: 5/6/2015
Year:
Incident Cause: Overflow/Surcharge
Incident Event:
Contaminant Code: 44
Contaminant Name: SEWAGE,RAW UNCHLORINATED
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Environment Impact:
Nature of Impact: Surface Water
Receiving Medium:
Receiving Env:
MOE Response: N
Dt MOE Arvl on Scn:

Discharger Report:
Material Group:
Health/Env Conseq:
Client Type:
Sector Type:
Agency Involved:
Nearest Watercourse: Lake Ontario
Site Address: 1856 Four Seasons Dr
Site District Office:
Site Postal Code:
Site Region:
Site Municipality: Burlington
Site Lot:
Site Conc:
Northing:
Easting:
Site Geo Ref Accu:

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

MOE Reported Dt:	5/6/2015	**Site Map Datum:**	
Dt Document Closed:	6/1/2015	**SAC Action Class:**	Watercourse Spills
Incident Reason:	Blockage	**Source Type:**	
Site Name:	Residence<UNOFFICIAL>		
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	Sewage backup into house due to blocked main		
Contaminant Qty:	0 other - see incident description		

---

3 | ***1 of 1*** | ***SSE/51.4*** | ***135.5 / -0.98*** | ***GOLDEN HORSESHOE WILDLIFE CONTROL***
1580 KERNS ROAD, #2, P.O. BOX 40548
BURLINGTON ON L7P3A7 | ***PES***

Detail Licence No:		**Operator Box:**	
Licence No:	04446	**Operator Class:**	
Status:		**Operator No:**	
Approval Date:		**Operator Type:**	
Report Source:	Legacy Licenses (Excluding TS)	**Oper Area Code:**	905
Licence Type:	Operator	**Oper Phone No:**	3326308
Licence Type Code:	01	**Operator Ext:**	
Licence Class:	05	**Operator Lot:**	
Licence Control:		**Oper Concession:**	
Latitude:		**Operator Region:**	
Longitude:		**Operator District:**	
Lot:		**Operator County:**	
Concession:		**Op Municipality:**	
Region:		**Post Office Box:**	
District:		**MOE District:**	
County:		**SWP Area Name:**	
Trade Name:			
PDF Link:			

---

4 | ***1 of 4*** | ***ESE/73.5*** | ***132.9 / -3.55*** | ***Electro-Pulse Enterprises Limited***
1572 Kerns Rd Unit 2
Burlington ON L7P 3A7 | ***SCT***

Established:	1991
Plant Size (ft²):	
Employment:	1

--Details--

Description:	Narrow Fabric Mills and Schiffli Machine Embroidery
SIC/NAICS Code:	313220
Description:	All Other Miscellaneous Chemical Product Manufacturing
SIC/NAICS Code:	325999
Description:	Electrical Wiring and Construction Supplies Wholesaler-Distributors
SIC/NAICS Code:	416110
Description:	General-Line Building Supplies Wholesaler-Distributors
SIC/NAICS Code:	416310
Description:	Chemical (except Agricultural) and Allied Product Wholesaler-Distributors
SIC/NAICS Code:	418410

---

4 | ***2 of 4*** | ***ESE/73.5*** | ***132.9 / -3.55*** | ***ELECTRO-PULSE ENTERPRISES***
1572 KERNS RD UNIT 2
BURLINGTON ON L7P 3A7 | ***SCT***

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

Established: 1991
Plant Size (ft²): 0
Employment: 1

--Details--
Description: NONCURRENT-CARRYING WIRING DEVICES
SIC/NAICS Code: 3644

Description: ROOFING, SIDING, AND INSULATION MATERIALS
SIC/NAICS Code: 5033

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
4	3 of 4	ESE/73.5	132.9 / -3.55	Electro-Pulse Enterprises Ltd 1572 Kerns Rd Unit 2 Burlington ON L7P 3A7	SCT

Established: 1/1/1991
Plant Size (ft²):
Employment:

--Details--
Description: Narrow Fabric Mills and Schiffli Machine Embroidery
SIC/NAICS Code: 313220

Description: Electrical Wiring and Construction Supplies Wholesaler-Distributors
SIC/NAICS Code: 416110

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
4	4 of 4	ESE/73.5	132.9 / -3.55	Union Gas Limited 1572 Kearns Rd, Unit #7 Burlington ON	SPL

Ref No: 4867-9PYMAS
Site No: NA
Incident Dt: 2014/10/17
Year:
Incident Cause: Leak/Break
Incident Event:
Contaminant Code: 35
Contaminant Name: NATURAL GAS (METHANE)
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Environment Impact: Confirmed
Nature of Impact: Air Pollution
Receiving Medium:
Receiving Env:
MOE Response: Referral to others
Dt MOE Arvl on Scn:
MOE Reported Dt: 2014/10/17
Dt Document Closed: 2014/12/20

Discharger Report:
Material Group:
Health/Env Conseq:
Client Type:
Sector Type: Pipeline/Components
Agency Involved:
Nearest Watercourse:
Site Address: 1572 Kearns Rd, Unit #7
Site District Office:
Site Postal Code:
Site Region:
Site Municipality: Burlington
Site Lot:
Site Conc:
Northing:
Easting:
Site Geo Ref Accu:
Site Map Datum:
SAC Action Class: TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill

Incident Reason: Operator/Human Error
Source Type:
Site Name: Line Damage Site<UNOFFICIAL>
Site County/District:
Site Geo Ref Meth:
Incident Summary: TSSA - 0.5 Inch Line Damage, made safe
Contaminant Qty: 0 other - see incident description

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
5	1 of 1	SW/120.7	137.2 / 0.66	BURLINGTON HYDRO-ELECTRIC COMM 1850 HEATHER HILLS TRANSFORMER	SPL

BURLINGTON CITY ON L7P 2Y9

Ref No:	168440	**Discharger Report:**	
Site No:		**Material Group:**	
Incident Dt:	//	**Health/Env Conseq:**	
Year:		**Client Type:**	
Incident Cause:	COOLING SYSTEM LEAK	**Sector Type:**	
Incident Event:		**Agency Involved:**	
Contaminant Code:		**Nearest Watercourse:**	
Contaminant Name:		**Site Address:**	
Contaminant Limit 1:		**Site District Office:**	
Contam Limit Freq 1:		**Site Postal Code:**	
Contaminant UN No 1:		**Site Region:**	
Environment Impact:	POSSIBLE	**Site Municipality:**	14101
Nature of Impact:	Soil contamination	**Site Lot:**	
Receiving Medium:	LAND	**Site Conc:**	
Receiving Env:		**Northing:**	
MOE Response:		**Easting:**	
Dt MOE Arvl on Scn:		**Site Geo Ref Accu:**	
MOE Reported Dt:	6/2/1999	**Site Map Datum:**	
Dt Document Closed:		**SAC Action Class:**	
Incident Reason:	EQUIPMENT FAILURE	**Source Type:**	
Site Name:			
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	BURLINGTON HYDRO - 126 L TRANSFORMER OIL TO FLOOR DRAIN DUE TO LEAK.		
Contaminant Qty:			

---

6 **1 of 3** **SSW/188.5** **133.0 / -3.54** **1800 HEATHER HILLS DR, BURLINGTON ON** **PINC**

Incident ID:		**Health Impact:**	
Incident No:	1133916	**Environment Impact:**	
Type:	FS-Pipeline Incident	**Property Damage:**	No
Status Code:	Pipeline Damage Reason Est	**Service Interupt:**	
Fuel Occurrence Tp:		**Enforce Policy:**	Yes
Fuel Type:		**Public Relation:**	
Tank Status:	RC Established	**Pipeline System:**	
Task No:	4526681	**Depth:**	
Spills Action Centre:		**Pipe Material:**	
Method Details:	E-mail	**PSIG:**	
Fuel Category:	Natural Gas	**Attribute Category:**	FS-Perform P-line Inc Invest
Date of Occurrence:		**Regulator Location:**	
Occurrence Start Date:	2014/04/07		
Operation Type:			
Pipeline Type:			
Regulator Type:			
Summary:	1800 HEATHER HILLS DR, BURLINGTON - 1/2" PIPELINE HIT		
Reported By:	Devay, Lori - ldevay@uniongas.com		
Affiliation:			
Occurrence Desc:			
Damage Reason:	Excavation practices not sufficient		
Notes:			

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6 **2 of 3** **SSW/188.5** **133.0 / -3.54** **1800 HEATHER HILLS DRIVE, BURLINGTON ON** **PINC**

Incident ID:		**Health Impact:**	
Incident No:	1109442	**Environment Impact:**	
Type:	FS-Pipeline Incident	**Property Damage:**	Yes
Status Code:	Pipeline Damage Reason Est	**Service Interupt:**	

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

Fuel Occurrence Tp:		**Enforce Policy:**	Yes
Fuel Type:		**Public Relation:**	
Tank Status:	RC Established	**Pipeline System:**	
Task No:	4491564	**Depth:**	
Spills Action Centre:		**Pipe Material:**	
Method Details:	E-mail	**PSIG:**	
Fuel Category:	Natural Gas	**Attribute Category:**	FS-Perform P-line Inc Invest
Date of Occurrence:		**Regulator Location:**	
Occurrence Start Date:	2014/01/23		
Operation Type:			
Pipeline Type:			
Regulator Type:			
Summary:	1800 HEATHER HILLS DRIVE, BURLINGTON - PIPELINE HIT - 1/2"		
Reported By:	John Blakely Union Gas		
Affiliation:			
Occurrence Desc:			
Damage Reason:	Excavation practices not sufficient		
Notes:			

6	3 of 3	SSW/188.5	133.0 / -3.54	**Union Gas Limited** **1800 Heatherhills** **Burlington ON**	SPL

Ref No:	7576-987MNM	**Discharger Report:**	
Site No:		**Material Group:**	
Incident Dt:	30-MAY-13	**Health/Env Conseq:**	
Year:		**Client Type:**	
Incident Cause:	Leak/Break	**Sector Type:**	Pipeline/Components
Incident Event:		**Agency Involved:**	
Contaminant Code:	35	**Nearest Watercourse:**	
Contaminant Name:	NATURAL GAS (METHANE)	**Site Address:**	1800 Heatherhills
Contaminant Limit 1:		**Site District Office:**	
Contam Limit Freq 1:		**Site Postal Code:**	
Contaminant UN No 1:		**Site Region:**	
Environment Impact:	Confirmed	**Site Municipality:**	Burlington
Nature of Impact:	Air Pollution	**Site Lot:**	
Receiving Medium:		**Site Conc:**	
Receiving Env:		**Northing:**	
MOE Response:	Referral to others	**Easting:**	
Dt MOE Arvl on Scn:		**Site Geo Ref Accu:**	
MOE Reported Dt:	30-MAY-13	**Site Map Datum:**	
Dt Document Closed:	26-JUN-13	**SAC Action Class:**	TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill
Incident Reason:	Operator/Human Error	**Source Type:**	
Site Name:	line strike<UNOFFICIAL>		
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	TSSA-FSB: 1/2" plastic line strike, repaired		
Contaminant Qty:	0 other - see incident description		

7	1 of 1	SW/203.9	138.8 / 2.27	**Burlington Hydro Inc.** **1850 Green Meadow Road** **Burlington ON L7P 2Y8**	SPL

Ref No:	8161-8WGAVH	**Discharger Report:**	
Site No:		**Material Group:**	
Incident Dt:	23-JUL-12	**Health/Env Conseq:**	
Year:		**Client Type:**	
Incident Cause:	Other Discharges	**Sector Type:**	Transformer
Incident Event:		**Agency Involved:**	
Contaminant Code:	15	**Nearest Watercourse:**	

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

Contaminant Name:	TRANSFORMER OIL (N.O.S.)	**Site Address:**	1850 Green Meadow Road
Contaminant Limit 1:		**Site District Office:**	
Contam Limit Freq 1:		**Site Postal Code:**	
Contaminant UN No 1:		**Site Region:**	
Environment Impact:	Not Anticipated	**Site Municipality:**	Burlington
Nature of Impact:	Soil Contamination	**Site Lot:**	
Receiving Medium:	Sewage - Municipal/Private and Commercial	**Site Conc:**	
Receiving Env:		**Northing:**	
MOE Response:	No Field Response	**Easting:**	
Dt MOE Arvl on Scn:		**Site Geo Ref Accu:**	
MOE Reported Dt:	23-JUL-12	**Site Map Datum:**	
Dt Document Closed:		**SAC Action Class:**	Primary Assessment of Spills
Incident Reason:	Weather	**Source Type:**	
Site Name:	road allowance<UNOFFICIAL>		
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	Burlington Hydro: ~ 60 L non PCB trmsfr oil; cntnd & clnd		
Contaminant Qty:			

---

8 | ***1 of 1*** | ***SW/279.7*** | ***142.9 / 6.39*** | ***Union Gas Limited 1012 Dell Court Burlington ON*** | ***SPL***

Ref No:	3883-98K2HK	**Discharger Report:**	
Site No:		**Material Group:**	
Incident Dt:	10-JUN-13	**Health/Env Conseq:**	
Year:		**Client Type:**	
Incident Cause:	Leak/Break	**Sector Type:**	Pipeline/Components
Incident Event:		**Agency Involved:**	
Contaminant Code:	35	**Nearest Watercourse:**	
Contaminant Name:	NATURAL GAS (METHANE)	**Site Address:**	1012 Dell Court
Contaminant Limit 1:		**Site District Office:**	
Contam Limit Freq 1:		**Site Postal Code:**	
Contaminant UN No 1:		**Site Region:**	
Environment Impact:	Confirmed	**Site Municipality:**	Burlington
Nature of Impact:	Air Pollution	**Site Lot:**	
Receiving Medium:		**Site Conc:**	
Receiving Env:		**Northing:**	
MOE Response:	Not MOE mandate	**Easting:**	
Dt MOE Arvl on Scn:		**Site Geo Ref Accu:**	
MOE Reported Dt:	10-JUN-13	**Site Map Datum:**	
Dt Document Closed:		**SAC Action Class:**	TSSA - Fuel Safety Branch - Hydrocarbon Fuel Release/Spill
Incident Reason:	Operator/Human Error	**Source Type:**	
Site Name:	1012 Dell Court<UNOFFICIAL>		
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	TSSA FSB: 1, 1/4" plastic linestrike		
Contaminant Qty:	0 other - see incident description		

---

9 | ***1 of 1*** | ***SE/295.1*** | ***120.8 / -15.70*** | ***23 2 SDS BURLINGTON ON*** | ***WDSH***

Site No.:	X7055
Region:	CENTRAL
County:	HALTON
Concession:	2 SDS
Lot:	23
Easting:	594350
Northing:	4798800
Zone:	17
Date Closed:	1957

Status:	CLOSED
Classification:	A5 - POTENTIAL HUMAN IMPACT-URBAN MUNICIPAL/DOMESTIC WASTE - CLOSED 10-20 YRS
%CommericialWste:	n/a
%DomesticWste Rec:	n/a
%LiquidWste Rec:	n/a
%HazardousWste Rec:	n/a
%Non-haz.Wste Rec:	n/a
%Sewage/Sludge Rec:	n/a
%Other Wste Rec:	n/a

---

10 **1 of 22** **E/297.0** **127.7 / -8.77** **AIC Global Holdings Inc** **GEN**
1375 KERNS ROAD
BURLINGTON ON L7P 4V7

Generator No:	ON2531700	**PO Box No:**	
Status:		**Country:**	Canada
Approval Years:	2014	**Choice of Contact:**	CO_OFFICIAL
Contam. Facility:	No	**Co Admin:**	
MHSW Facility:	No	**Phone No Admin:**	
SIC Code:	541620		
SIC Description:	ENVIRONMENTAL CONSULTING SERVICES		

Detail(s)

Waste Class:	251
Waste Class Desc:	OIL SKIMMINGS & SLUDGES
Waste Class:	122
Waste Class Desc:	ALKALINE WASTES - OTHER METALS
Waste Class:	145
Waste Class Desc:	PAINT/PIGMENT/COATING RESIDUES
Waste Class:	232
Waste Class Desc:	POLYMERIC RESINS
Waste Class:	212
Waste Class Desc:	ALIPHATIC SOLVENTS
Waste Class:	263
Waste Class Desc:	ORGANIC LABORATORY CHEMICALS
Waste Class:	148
Waste Class Desc:	INORGANIC LABORATORY CHEMICALS
Waste Class:	243
Waste Class Desc:	PCBS

---

10 **2 of 22** **E/297.0** **127.7 / -8.77** **AIC Global Holdings Inc** **GEN**
1375 KERNS ROAD
BURLINGTON ON L7P 4V7

Generator No:	ON2531700	**PO Box No:**	
Status:		**Country:**	
Approval Years:	2012	**Choice of Contact:**	
Contam. Facility:		**Co Admin:**	
MHSW Facility:		**Phone No Admin:**	
SIC Code:	541620		
SIC Description:	Environmental Consulting Services		

Detail(s)

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

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 232
Waste Class Desc: POLYMERIC RESINS

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 122
Waste Class Desc: ALKALINE WASTES - OTHER METALS

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 243
Waste Class Desc: PCBS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
10	3 of 22	E/297.0	127.7 / -8.77	AIC Global Holdings Inc 1375 KERNS ROAD BURLINGTON ON L7P 4V7	GEN

Generator No: ON2531700
Status: Registered
Approval Years: As of Jul 2019
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

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

Detail(s)

Waste Class: 122 L
Waste Class Desc: Alkaline slutions - containing other metals and non-metals (not cyanide)

Waste Class: 122 C
Waste Class Desc: Alkaline slutions - containing other metals and non-metals (not cyanide)

Waste Class: 252 L
Waste Class Desc: Waste crankcase oils and lubricants

Waste Class: 331 I
Waste Class Desc: Waste compressed gases including cylinders

Waste Class: 212 L
Waste Class Desc: Aliphatic solvents and residues

Waste Class: 148 L
Waste Class Desc: Misc. wastes and inorganic chemicals

Waste Class: 243 D
Waste Class Desc: PCB

Waste Class: 263 I
Waste Class Desc: Misc. waste organic chemicals

Waste Class: 269 T
Waste Class Desc: Organic non-halogenated pesticide and herbicide wastes

Waste Class: 145 I
Waste Class Desc: Wastes from the use of pigments, coatings and paints

Waste Class: 112 C
Waste Class Desc: Acid solutions - containing heavy metals

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10 | **4 of 22** | **E/297.0** | **127.7 / -8.77** | **STELCO INC.**
RESEARCH & DEVELOPMENT CENTRE 1375
KERNS ROAD, P.O. BOX 2030
BURLINGTON ON L8N 3T1 | **GEN**

Generator No: ON0009523
Status:
Approval Years: 86,87
Contam. Facility:
MHSW Facility:
SIC Code: 7759
SIC Description: OTHER SCI./TECH. OF.

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

Detail(s)

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Waste Class: 253
Waste Class Desc: EMULSIFIED OILS

---

10 | **5 of 22** | **E/297.0** | **127.7 / -8.77** | **AIC LTD.**
1375 KERNS ROAD
BURLINGTON ON L7P 4V7 | **GEN**

Generator No: ON2531700
Status:
Approval Years: 01,03,04,06,07,08
Contam. Facility:
MHSW Facility:
SIC Code: 4214
SIC Description: EXCAVAT. & GRADING

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

Detail(s)

Waste Class: 122
Waste Class Desc: ALKALINE WASTES - OTHER METALS

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 232
Waste Class Desc: POLYMERIC RESINS

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

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

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 243
Waste Class Desc: PCB'S

---

10 | **6 of 22** | **E/297.0** | **127.7 / -8.77** | **GEN**

AIC Global Holdings Inc
1375 KERNS ROAD
BURLINGTON ON L7P 4V7

Generator No: ON2531700
Status:
Approval Years: 2016
Contam. Facility: No
MHSW Facility: No
SIC Code: 541620
SIC Description: ENVIRONMENTAL CONSULTING SERVICES

PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 122
Waste Class Desc: ALKALINE WASTES - OTHER METALS

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Waste Class: 232
Waste Class Desc: POLYMERIC RESINS

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 243
Waste Class Desc: PCBS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

---

10 | **7 of 22** | **E/297.0** | **127.7 / -8.77** | **GEN**

STELCO INC.
TECHNOLOGY CENTER, 1375 KERNS ROAD C/O
P.O.BOX 2030
HAMILTON ON L8N 3T1

Generator No: ON0009523
Status:
Approval Years: 89,90
Contam. Facility:
MHSW Facility:
SIC Code: 7759
SIC Description: OTHER SCI./TECH. OF.

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

Detail(s)

Waste Class: 114

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

Waste Class Desc: OTHER INORGANIC ACID WASTES

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Waste Class: 253
Waste Class Desc: EMULSIFIED OILS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

---

10 ***8 of 22*** ***E/297.0*** ***127.7 / -8.77*** ***AIC LTD.***
1375 KERNS ROAD
BURLINGTON ON L7P 4V7 ***GEN***

Generator No: ON2531700
Status:
Approval Years: 2009
Contam. Facility:
MHSW Facility:
SIC Code: 541620
SIC Description: Environmental Consulting Services

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

Detail(s)

Waste Class: 232
Waste Class Desc: POLYMERIC RESINS

Waste Class: 243
Waste Class Desc: PCBS

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 122
Waste Class Desc: ALKALINE WASTES - OTHER METALS

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

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10 ***9 of 22*** ***E/297.0*** ***127.7 / -8.77*** ***STELCO INC.***
TECHNOLOGY CENTER 1375 KERNS ROAD,
P.O. BOX 2030
BURLINGTON ON L8N 3T1 ***GEN***

Generator No: ON0009523
Status:
Approval Years: 88

PO Box No:
Country:
Choice of Contact:

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

Contam. Facility:
MHSW Facility:
SIC Code: 7759
SIC Description: OTHER SCI./TECH. OF.
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Waste Class: 253
Waste Class Desc: EMULSIFIED OILS

---

10 | **10 of 22** | **E/297.0** | **127.7 / -8.77** | **AIC Global Holdings Inc**
1375 KERNS ROAD
BURLINGTON ON L7P 4V7 | **GEN**

Generator No: ON2531700
Status:
Approval Years: 2015
Contam. Facility: No
MHSW Facility: No
SIC Code: 541620
SIC Description: ENVIRONMENTAL CONSULTING SERVICES
PO Box No:
Country: Canada
Choice of Contact: CO_OFFICIAL
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 232
Waste Class Desc: POLYMERIC RESINS

Waste Class: 122
Waste Class Desc: ALKALINE WASTES - OTHER METALS

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 243
Waste Class Desc: PCBS

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

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10 | **11 of 22** | **E/297.0** | **127.7 / -8.77** | **AIC Global Holdings Inc**
1375 KERNS ROAD
BURLINGTON ON L7P 4V7 | **GEN**

Generator No: ON2531700
Status:
PO Box No:
Country:

Approval Years:	2011	**Choice of Contact:**	
Contam. Facility:		**Co Admin:**	
MHSW Facility:		**Phone No Admin:**	
SIC Code:	541620		
SIC Description:	Environmental Consulting Services		

Detail(s)

Waste Class:	232
Waste Class Desc:	POLYMERIC RESINS
Waste Class:	122
Waste Class Desc:	ALKALINE WASTES - OTHER METALS
Waste Class:	145
Waste Class Desc:	PAINT/PIGMENT/COATING RESIDUES
Waste Class:	243
Waste Class Desc:	PCBS
Waste Class:	251
Waste Class Desc:	OIL SKIMMINGS & SLUDGES
Waste Class:	148
Waste Class Desc:	INORGANIC LABORATORY CHEMICALS
Waste Class:	263
Waste Class Desc:	ORGANIC LABORATORY CHEMICALS
Waste Class:	212
Waste Class Desc:	ALIPHATIC SOLVENTS

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10 | ***12 of 22*** | ***E/297.0*** | ***127.7 / -8.77*** | ***AIC Global Holdings Inc***
1375 KERNS ROAD
BURLINGTON ON L7P 4V7 | ***GEN***

Generator No:	ON2531700	**PO Box No:**	
Status:	Registered	**Country:**	Canada
Approval Years:	As of Dec 2018	**Choice of Contact:**	
Contam. Facility:		**Co Admin:**	
MHSW Facility:		**Phone No Admin:**	
SIC Code:			
SIC Description:			

Detail(s)

Waste Class:	145 I
Waste Class Desc:	Wastes from the use of pigments, coatings and paints
Waste Class:	212 L
Waste Class Desc:	Aliphatic solvents and residues
Waste Class:	243 D
Waste Class Desc:	PCB
Waste Class:	252 L
Waste Class Desc:	Waste crankcase oils and lubricants
Waste Class:	263 I
Waste Class Desc:	Misc. waste organic chemicals

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10 | ***13 of 22*** | ***E/297.0*** | ***127.7 / -8.77*** | ***STELCO (OUT OF BUS) 36-214*** | ***GEN***

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				TECHNOLOGY CENTER, 1375 KERNS ROAD BURLINGTON C/O PO BOX 2030 HAMILTON ON L8N 3T1	

Generator No: ON0009523
Status:
Approval Years: 92,93,97
Contam. Facility:
MHSW Facility:
SIC Code: 7759
SIC Description: OTHER SCI./TECH. OF.

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

Detail(s)

Waste Class: 114
Waste Class Desc: OTHER INORGANIC ACID WASTES

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Waste Class: 243
Waste Class Desc: PCB'S

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Waste Class: 253
Waste Class Desc: EMULSIFIED OILS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
10	14 of 22	E/297.0	127.7 / -8.77	STELCO INC. (OUT OF BUSINESS) TECHNOLOGY CENTER 1375 KERNS ROAD BURLINGTON ON L7P 3H8	GEN

Generator No: ON0009523
Status:
Approval Years: 98
Contam. Facility:
MHSW Facility:
SIC Code: 7759
SIC Description: OTHER SCI./TECH. OF.

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

Detail(s)

Waste Class: 114
Waste Class Desc: OTHER INORGANIC ACID WASTES

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 243
Waste Class Desc: PCB'S

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Waste Class: 253
Waste Class Desc: EMULSIFIED OILS

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

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10 | **15 of 22** | **E/297.0** | **127.7 / -8.77** | **STELCO INC. 36-214**
TECHNOLOGY CENTER, 1375 KERNS ROAD
BURLINGTON C/O PO BOX 2030
HAMILTON ON L8N 3T1 | **GEN**

Generator No: ON0009523
Status:
Approval Years: 94,95,96
Contam. Facility:
MHSW Facility:
SIC Code: 7759
SIC Description: OTHER SCI./TECH. OF.

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

Detail(s)

Waste Class: 114
Waste Class Desc: OTHER INORGANIC ACID WASTES

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 241
Waste Class Desc: HALOGENATED SOLVENTS

Waste Class: 243
Waste Class Desc: PCB'S

Waste Class: 252
Waste Class Desc: WASTE OILS & LUBRICANTS

Waste Class: 253
Waste Class Desc: EMULSIFIED OILS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

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10 | **16 of 22** | **E/297.0** | **127.7 / -8.77** | **AIC LTD.**
1375 KERNS ROAD
BURLINGTON ON L7P 4V7 | **GEN**

Generator No: ON2531700
Status:
Approval Years: 2010
Contam. Facility:
MHSW Facility:
SIC Code: 541620
SIC Description: Environmental Consulting Services

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

Detail(s)

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 122
Waste Class Desc: ALKALINE WASTES - OTHER METALS

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 243
Waste Class Desc: PCBS

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 232
Waste Class Desc: POLYMERIC RESINS

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10 | ***17 of 22*** | ***E/297.0*** | ***127.7 / -8.77*** | ***AIC Global Holdings Inc***
1375 KERNS ROAD
BURLINGTON ON | ***GEN***

Generator No: ON2531700
Status:
Approval Years: 2013
Contam. Facility:
MHSW Facility:
SIC Code: 541620
SIC Description: ENVIRONMENTAL CONSULTING SERVICES

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

Detail(s)

Waste Class: 145
Waste Class Desc: PAINT/PIGMENT/COATING RESIDUES

Waste Class: 212
Waste Class Desc: ALIPHATIC SOLVENTS

Waste Class: 122
Waste Class Desc: ALKALINE WASTES - OTHER METALS

Waste Class: 148
Waste Class Desc: INORGANIC LABORATORY CHEMICALS

Waste Class: 251
Waste Class Desc: OIL SKIMMINGS & SLUDGES

Waste Class: 263
Waste Class Desc: ORGANIC LABORATORY CHEMICALS

Waste Class: 232
Waste Class Desc: POLYMERIC RESINS

Waste Class: 243

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Waste Class Desc:		PCBS			
10	18 of 22	E/297.0	127.7 / -8.77	STEEL COMPANY OF CANADA RESEARCH & DEVELOPMENT; 1375 KERNS ROAD BURLINGTON ON L7P 3H8	NPCB
Company Code:		O0292M			
Industry:		Iron/Steel			
Site Status:					
Transaction Date:		4/18/1994			
Inspection Date:		1/28/1992			
10	19 of 22	E/297.0	127.7 / -8.77	STEEL COMPANY OF CANADA 1375 KERNS ROAD KERNS ROAD BURLINGTON ON L7P 3H8	NPCB
Company Code:		O0292M			
Industry:					
Site Status:					
Transaction Date:					
Inspection Date:					
--Details--					
Label:					
Serial No.:					
PCB Type/Code:					
Location:					
Item/State:					
No. of Items:					
Manufacturer:					
Status:		In-Use			
Contents:					
10	20 of 22	E/297.0	127.7 / -8.77	SELTECK(STELCO) 1375 KERNS ROAD BURLINGTON ON L7P 3H8	NPCB
Company Code:		F1114			
Industry:					
Site Status:					
Transaction Date:		1/29/1996			
Inspection Date:					
--Details--					
Label:					
Serial No.:					
PCB Type/Code:		Askarel			
Location:					
Item/State:					
No. of Items:					
Manufacturer:					
Status:		Stored for Disposal			
Contents:		0.00 KG			
10	21 of 22	E/297.0	127.7 / -8.77	SELTECK(STELCO) 1375 KERNS ROAD BURLINGTON ON L7P 3H8	OPCB

Year: 1995
Site Number: 30290A009
Name Owner:
Additional Site Information:

--Details--
Quantity: 4.00
Address Site:
Description: Number of Drums of Ballasts with High Level PCBs (>1000 ppm)

Quantity: 800.00
Address Site:
Description: Weight of Drums of Ballasts with High Level PCBs (>1000 ppm) kg

Quantity: 40.00
Address Site:
Description: Number of Capacitors with High Level PCBs (>1000 ppm)

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10 | ***22 of 22*** | ***E/297.0*** | ***127.7 / -8.77*** | ***Aic Group of Funds***
1375 Kerns Road AIC GROUP OF FUNDS
Burlington ON L7P 4V7 | ***SPL***

Ref No: 6620-6LELEG
Site No:
Incident Dt: 1/26/2006
Year:
Incident Cause:
Incident Event:
Contaminant Code: 46
Contaminant Name: FIRE WATER (PARTICULATE CONTAMINANT)
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Environment Impact: Possible
Nature of Impact: Surface Water Pollution
Receiving Medium: Water
Receiving Env:
MOE Response:
Dt MOE Arvl on Scn:
MOE Reported Dt: 1/26/2006
Dt Document Closed:
Incident Reason:
Site Name: 1375 KERNS ROAD
Site County/District:
Site Geo Ref Meth:
Incident Summary: Fire in storage container, possible PCB contamination
Contaminant Qty: NOT SPECIFIED NOT SPECIFIED

Discharger Report:
Material Group: Wastes
Health/Env Conseq:
Client Type:
Sector Type: Other
Agency Involved:
Nearest Watercourse:
Site Address: 1375 KERNS ROAD
Site District Office: Halton-Peel
Site Postal Code:
Site Region:
Site Municipality: Burlington
Site Lot:
Site Conc:
Northing: NA
Easting: NA
Site Geo Ref Accu:
Site Map Datum:
SAC Action Class:
Source Type:

---

11 | ***1 of 1*** | ***E/300.0*** | ***127.7 / -8.77*** | ***STEEL COMPANY OF CANADA***
RESEARCH & DEVELOPMENT; KERNS ROAD
BURLINGTON ON | ***NPCB***

Company Code: O0292M
Industry: Iron/Steel
Site Status:
Transaction Date: 3/7/1991
Inspection Date:

Unplottable Summary

Total: 11 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
CA	BRANTHAVEN HOMES LTD. - SKYVIEW DR.	WITHIN SITE/SKYVIEW DR.	BURLINGTON CITY ON	
CA	BRANTHAVEN HOMES LTD. - SKYVIEW DR.	WITHIN SITE/SKYVIEW DRIVE.	BURLINGTON CITY ON	
CA	GENSTAR DEVELOPMENT CO.	WINTERBERRY DR.	BURLINGTON CITY ON	
CA	REIMER CONSTRUCTION LTD.	KERNS RD.	BURLINGTON ON	
NPCB	STEEL COMPANY OF CANADA	STELTECH FACILITY	Burlington ON	
NPCB	STEEL COMPANY OF CANADA	STELTECH FACILITY	BURLINGTON ON	
NPCB	STEEL COMPANY OF CANADA	STELTECH FACILITY STELTECH FACILITY	BURLINGTON ON	
NPCB		RESEARCH & DEVELOPMENT KERNS ROAD	BURLINGTON ON	
SPL	STELCO STEEL	MOTOR VEHICLE (OPERATING FLUID)	BURLINGTON CITY ON	
SPL	Shred-It Canada Corporation Inc.	KERNS ROAD, NEAR BRENT STREET (@ 1689 KERNS ROAD)<UNOFFICIAL>	Burlington ON	
SPL	BURLINGTON HYDRO-ELECTRIC COMM	SKYVIEW DRIVE TRANSFORMER	BURLINGTON CITY ON	

Unplottable Report

Site: ***BRANTHAVEN HOMES LTD. - SKYVIEW DR.***
WITHIN SITE/SKYVIEW DR. BURLINGTON CITY ON

Database: ***CA***

Certificate #: 7-1587-90-
Application Year: 90
Issue Date: 10/19/1990
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***BRANTHAVEN HOMES LTD. - SKYVIEW DR.***
WITHIN SITE/SKYVIEW DRIVE. BURLINGTON CITY ON

Database: ***CA***

Certificate #: 3-1936-90-
Application Year: 90
Issue Date: 10/19/1990
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***GENSTAR DEVELOPMENT CO.***
WINTERBERRY DR. BURLINGTON CITY ON

Database: ***CA***

Certificate #: 3-0925-87-
Application Year: 87
Issue Date: 6/10/1987
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***REIMER CONSTRUCTION LTD.***
KERNS RD. BURLINGTON ON

Database: ***CA***

Certificate #: 7-0240-85-006

Application Year: 85
Issue Date: 5/1/85
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: ***STEEL COMPANY OF CANADA***
STELTECH FACILITY Burlington ON

Database: ***NPCB***

Company Code: O0292M
Industry: Iron/Steel
Site Status: In- Use
Transaction Date: 1/28/1992
Inspection Date: 1/28/1992

--Details--
Label:
Serial No.:
PCB Type/Code: Askarel/Pyranol
Location: NORTH EAST CORNER OF BUILDING
Item/State:
No. of Items:
Manufacturer:
Status: In-Use
Contents:

Site: ***STEEL COMPANY OF CANADA***
STELTECH FACILITY BURLINGTON ON

Database: ***NPCB***

Company Code: O0292M
Industry: IRON/STEEL
Site Status: INSPECTED SITES (NON FEDERAL)
Transaction Date: 2/23/1996
Inspection Date: 1/28/1992

--Details--
Label: OR25341
Serial No.: 285756
PCB Type/Code: ASKAREL/PYRANOL
Location: NORTH EAST CORNER OF BUILDING
Item/State: TRANSFORMER/FULL
No. of Items: 1
Manufacturer: CGE
Status: IN-USE
Contents: 2389 L

Site: ***STEEL COMPANY OF CANADA***
STELTECH FACILITY STELTECH FACILITY BURLINGTON ON

Database: ***NPCB***

Company Code: O0292M
Industry:
Site Status:
Transaction Date:
Inspection Date:

--Details--
Label:
Serial No.:
PCB Type/Code:
Location:
Item/State:
No. of Items:
Manufacturer:
Status: In-Use
Contents:

Site: ***Database:*** ***NPCB***
RESEARCH & DEVELOPMENT KERNS ROAD BURLINGTON ON

Company Code: O0292M
Industry:
Site Status:
Transaction Date: 3/7/1991
Inspection Date:

--Details--
Label:
Serial No.:
PCB Type/Code: Pyranol
Location:
Item/State:
No. of Items:
Manufacturer:
Status: In-Use
Contents: 2389.00 L

Site: ***STELCO STEEL*** ***Database:*** ***SPL***
MOTOR VEHICLE (OPERATING FLUID) BURLINGTON CITY ON

Ref No:	45897	***Discharger Report:***	
Site No:		***Material Group:***	
Incident Dt:	1/21/1991	***Health/Env Conseq:***	
Year:		***Client Type:***	
Incident Cause:	TRUCK/TRAILER OVERTURN	***Sector Type:***	
Incident Event:		***Agency Involved:***	
Contaminant Code:		***Nearest Watercourse:***	
Contaminant Name:		***Site Address:***	
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site Postal Code:***	
Contaminant UN No 1:		***Site Region:***	
Environment Impact:	NOT ANTICIPATED	***Site Municipality:***	14101
Nature of Impact:		***Site Lot:***	
Receiving Medium:	LAND	***Site Conc:***	
Receiving Env:		***Northing:***	
MOE Response:		***Easting:***	
Dt MOE Arvl on Scn:		***Site Geo Ref Accu:***	
MOE Reported Dt:	1/21/1991	***Site Map Datum:***	
Dt Document Closed:		***SAC Action Class:***	
Incident Reason:	ERROR	***Source Type:***	

Site Name:
Site County/District:
Site Geo Ref Meth:
Incident Summary: STELCO- DIESEL LEAKING FROM SADDLE TANKS OF OVERTURNED TRANSPORT TRUCK
Contaminant Qty:

Site: ***Shred-It Canada Corporation Inc.*** ***Database:*** ***SPL***
KERNS ROAD, NEAR BRENT STREET (@ 1689 KERNS ROAD)<UNOFFICIAL> Burlington ON

Ref No:	0282-6MFVAT	***Discharger Report:***	
Site No:		***Material Group:***	Oils
Incident Dt:	2/28/2006	***Health/Env Conseq:***	
Year:		***Client Type:***	
Incident Cause:	Pipe Or Hose Leak	***Sector Type:***	Other Motor Vehicle
Incident Event:		***Agency Involved:***	
Contaminant Code:	15	***Nearest Watercourse:***	
Contaminant Name:	HYDRAULIC OIL	***Site Address:***	
Contaminant Limit 1:		***Site District Office:***	Halton-Peel
Contam Limit Freq 1:		***Site Postal Code:***	
Contaminant UN No 1:		***Site Region:***	
Environment Impact:	Possible	***Site Municipality:***	Burlington
Nature of Impact:	Surface Water Pollution	***Site Lot:***	
Receiving Medium:	Water	***Site Conc:***	
Receiving Env:		***Northing:***	
MOE Response:		***Easting:***	
Dt MOE Arvl on Scn:		***Site Geo Ref Accu:***	
MOE Reported Dt:	2/28/2006	***Site Map Datum:***	
Dt Document Closed:		***SAC Action Class:***	
Incident Reason:	Spill	***Source Type:***	
Site Name:			
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	Shred It Canada: 20-30gal hydraulic fluid to road		
Contaminant Qty:	113 L		

Site: ***BURLINGTON HYDRO-ELECTRIC COMM***
SKYVIEW DRIVE TRANSFORMER BURLINGTON CITY ON

Database: ***SPL***

Ref No:	156489	***Discharger Report:***	
Site No:		***Material Group:***	
Incident Dt:	6/5/1998	***Health/Env Conseq:***	
Year:		***Client Type:***	
Incident Cause:	COOLING SYSTEM LEAK	***Sector Type:***	
Incident Event:		***Agency Involved:***	
Contaminant Code:		***Nearest Watercourse:***	
Contaminant Name:		***Site Address:***	
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site Postal Code:***	
Contaminant UN No 1:		***Site Region:***	
Environment Impact:	NOT ANTICIPATED	***Site Municipality:***	14101
Nature of Impact:	Soil contamination	***Site Lot:***	
Receiving Medium:	LAND	***Site Conc:***	
Receiving Env:		***Northing:***	
MOE Response:		***Easting:***	
Dt MOE Arvl on Scn:		***Site Geo Ref Accu:***	
MOE Reported Dt:	6/5/1998	***Site Map Datum:***	
Dt Document Closed:		***SAC Action Class:***	
Incident Reason:	MATERIAL FAILURE	***Source Type:***	
Site Name:			
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	BURLINGTON HYDRO: 40 L TRANSFORMER OIL TO GRD, CLEANED AND TO BE TESTED		
Contaminant Qty:			

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-Oct 2018

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-Jan 31, 2019

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 2018

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*

Dry Cleaning Facilities: Federal CDRY

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 2017

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-Jan 31, 2019

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 - Mar 2019

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-Jul 2019

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-Jul 31, 2019

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 - Oct 2018

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-Jul 30, 2019

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-Jul 31, 2019

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-Jul 30, 2019

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-Apr 30, 2019

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

Environmental Penalty Annual Report: Provincial EPAR

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, 2018

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-May 2019

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 2018

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-Jul 31, 2019

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 2017

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: Feb 28, 2019

Canadian Mine Locations: Private MINE

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

Government Publication Date: 1998-2009*

Mineral Occurrences: Provincial MNR

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

Government Publication Date: 1846-Jan 2019

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, 2017

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-Dec 31, 2018

National Energy Board Wells: Federal NEBP

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 OGWE

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-May 31, 2019

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-Jun 2019

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-Jul 31, 2019

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 2019

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-Jul 31, 2019

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-Jul 2019

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-Jan 31, 2019

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-Feb 2019

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, 2017

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 2018

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-Jul 30, 2019

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: Feb 28, 2019

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.

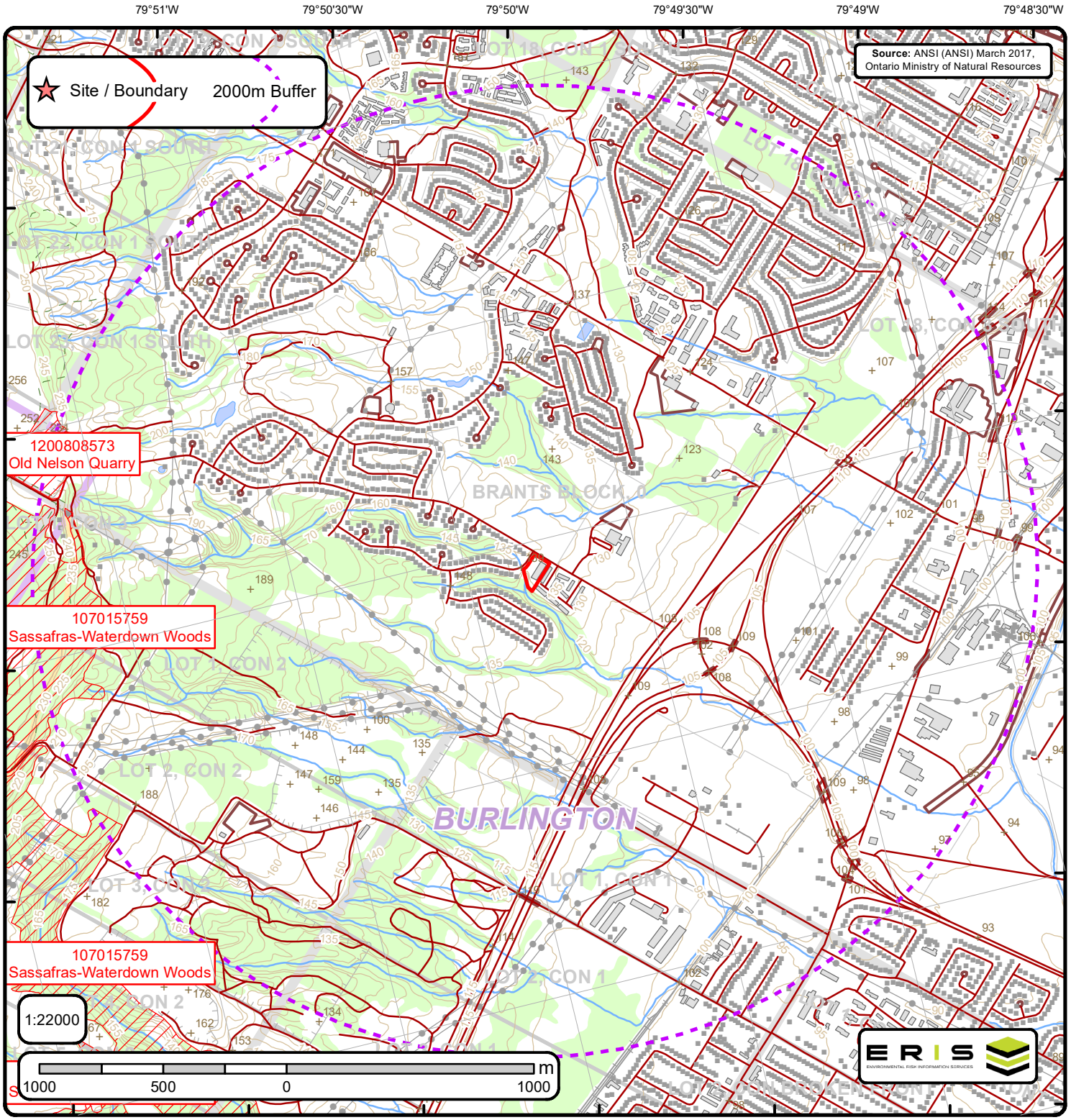
'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'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.



Area of Natural & Scientific Interest (ANSI) Order No. 20190821151

Spot Height	Transportation Structure	Contour Line	Wooded Area
Building Point	Utility Line	Pit or Quarry	Conservation Authority
Towers	Water Structure	Waterbody	Conservation Area
Utility Site Point	Drainage Line Feature	Wetlands	Municipal Park
Misc. Line	River or Stream	Concession	Provincial Park
Railroads	Airports	Lots	National Park
Roads	Tanks	Municipalitiy	Nature Reserve
Trail	Building to Scale	Land Ownership	ANSI Area

ANSI Report

ANSI Units Found within 2000 m of

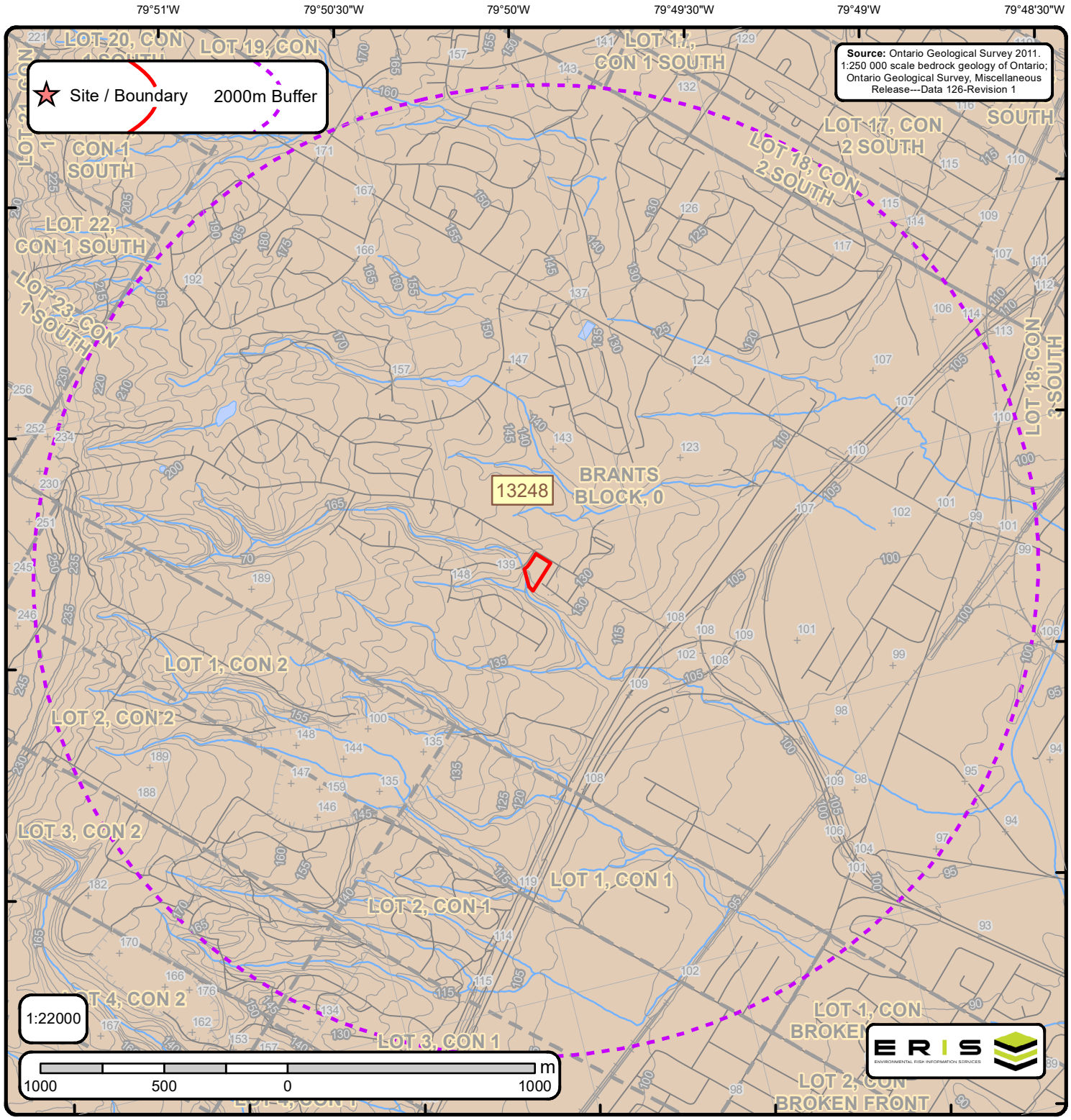
19-0087.01.01 1600 Kerns Road, Burlington, Ontario

Order No. 20190821151



ANSI Name: Sassafras-Waterdown Woods
ID: 107015759 | **Type:** ANSI, Life Science | **Significance:** Provincial | **Management Plan:** | **Area (sqm):** 2665583.619 | **Comments:**

ANSI Name: Old Nelson Quarry
ID: 1200808573 | **Type:** ANSI, Earth Science | **Significance:** Provincial | **Management Plan:** Yes | **Area (sqm):** 50184.847 | **Comments:** This mapping represents external boundries only. Reference should be made to the individual ANSI file for the ANSI inventory (planning section MNR Aurora). Less accurate mapping is available on 1:50,000 white prints?.followed by NHIC'S ANSI 'description'



Bedrock Geology of Ontario

Order No. 20190821151

Spot Height
Roads
Contour Lines
Streams
Railroads
Lots
Pit or Quarry
Airports
Waterbody
Wetlands

Bedrock Geology Lines

- CONTACT, GEOPHYSICAL, TREND, INTERPRETED
- CONTACT, SHARP, TREND, INTERPRETED
- CONTACT, SHARP, TREND, OBSERVED
- FAULT, DEXTRAL HORIZONTAL COMPONENT, TREND, INTERPRETED, UNKNOWN GENERATION
- FAULT, PROJECTED FAULT, INTERPRETED, UNKNOWN GENERATION
- FAULT, SINISTRAL HORIZONTAL COMPONENT, TREND, INTERPRETED, UNKNOWN GENERATION
- FAULT, SINISTRAL HORIZONTAL COMPONENT, TREND, OBSERVED, UNKNOWN GENERATION
- FAULT, UNKNOWN HORIZONTAL COMPONENT, INCLINED-REVERSE, INTERPRETED, UNKNOWN GENERATION
- FAULT, UNKNOWN HORIZONTAL COMPONENT, INCLINED-REVERSE, OBSERVED, UNKNOWN GENERATION
- FAULT, UNKNOWN HORIZONTAL COMPONENT, TREND, INTERPRETED, UNKNOWN GENERATION
- FAULT, UNKNOWN HORIZONTAL COMPONENT, TREND, OBSERVED, UNKNOWN GENERATION
- NEATLINE
- ONTARIO BORDER
- Marble, chert, iron formation, minor metavolcanic rocks

Dikes

- Abitibi mafic dike
- Biscotasing mafic dike
- Empey Lake mafic dike
- Felsic to intermediate intrusive rocks
- Fort Frances mafic dike
- Frontenac mafic dike
- Grenville mafic dike
- Logan and Nipigon mafic sills
- Mackenzie mafic dike
- Mafic dikes of uncertain age
- Mafic sills and dikes
- Marathon mafic dike
- Marathon, Kapuskasing or Biscotasing mafic dike
- Matachewan mafic dike
- Mine Centre mafic dike
- Molson mafic dike
- North Channel mafic dike
- Pickle Crow mafic dike (Molson swarm) normal
- Pickle Crow mafic dike (Molson swarm) reverse
- Rideau mafic dike
- Sudbury mafic dike
- Ultramafic, gabbroic and granophyric intrusions
- Unsubdivided mafic dike
- Unsubdivided mafic dike (Keweenawan age)
- unknown

C Lines

- FOLD, ANTICLINE, INTERPRETED, UNKNOWN GENERATION
- FOLD, ANTICLINE, OBSERVED, UNKNOWN GENERATION
- FOLD, ANTICLINE, SYNFORMAL, INTERPRETED, SECOND GENERATION
- FOLD, ANTIFORM, INTERPRETED, UNKNOWN GENERATION
- FOLD, SYNCLINE, INTERPRETED, UNKNOWN GENERATION
- FOLD, SYNCLINE, OBSERVED, UNKNOWN GENERATION
- FOLD, SYNFORM, INTERPRETED, UNKNOWN GENERATION

Kimberlite

Bedrock Geology Report

Bedrock Geology units found within 2000 m of

19-0087.01.01 1600 Kerns Road, Burlington, Ontario

Order No. 20190821151



ID: 13248 | **Unit Name:** |

Type (All): 55a | **Type (Primary):** 55a | **Type (Secondary):** | **Type (Tertiary):** | **Rock Type (Primary):** Shale, limestone, dolostone, siltstone | **Strata (Primary):** Queenston Formation | **Super Eon (Primary):** | **Eon (Primary):** PHANEROZOIC (Present to 542.0 Ma) | **Era (Primary):** PALEOZOIC (251.0 Ma to 542.0 Ma) | **Period (Primary):** ORDOVICIAN (443.7 Ma to 488.3 Ma) | **Epoch (Primary):** UPPER ORDOVICIAN | **Province (Primary):**

Bedrock Geology Report Metadata

Ontario Geological Survey 2011. 1:250 000 scale bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release-Data 126 Revision1

ONTARIO MINISTRY OF NORTHERN DEVELOPMENT, MINES AND FORESTRY



ID - Unit ID **Unit Name** - Generalized geological unit classification

Type (All) - The geological unit number(s) or code(s) for all rock types present in an individual polygon.

Type (Primary) - The primary geological unit number or code for the primary rock type in an individual polygon

Type (Secondary) - The secondary geological unit number or code for the secondary rock type, if present, in an individual polygon

Type (Tertiary) - The tertiary geological unit number or code for the tertiary rock type, if present, in an individual polygon

Rock Type (Primary) - Rock type or sub-unit description

Status (Primary) - The Stratigraphic unit. Divided into:

```
Supergroup (two or more groups and lone formations)
Group (two or more formations)
Formation (primary unit of lithostratigraphy)
Member (named lithologic subdivision of a formation)
Bed (named distinctive layer in a member or formation)
```

Super Eon (Primary) - A name given to the largest defined unit of geological time, divided into Eons. Unique values which this field may contain (Domains) are:

```
PRECAMBRIAN (0.542 Ga to <3.85 Ga)
```

Eon (Primary) - A name given to a defined unit of geological time, divided into Eras. Unique values which this field may contain (Domains) are:

```
ARCHEAN (2.5 Ga to <3.85 Ga)
PROTEROZOIC (0.542 Ga to 2.50 Ga)
PHANEROZOIC (Present to 542.0 Ma)
```

Era (Primary) - A name given to a defined unit of geological time, divided into Periods. Each era on the scale is separated from the next by a major event or change. Unique values which this field may contain (Domains) are:

```
MESOARCHEAN (2.8 Ga to 3.2 Ga)
NEO-TO MESOARCHEAN (2.5 Ga to 3.2 Ga)
NEOARCHEAN (2.5 Ga to 2.8 Ga)
PALEOPROTEROZOIC (1.6 Ga to 2.5 Ga)
MESO-TO PALEOPROTEROZOIC (1.0 Ga to 2.5 Ga)
MESOPROTEROZOIC (1.0 Ga to 1.6 Ga)
EARLY PALEOZOIC TO NEOPROTEROZOIC (443.7 Ma to 1.0 Ga)
NEO-TO MESOPROTEROZOIC (0.542 Ga to 1.6 Ga)
PALEOZOIC (251.0 Ma to 542.0 Ma)
MESOZOIC (65.5 Ma to 251.0 Ma)
```

Period (Primary) - A name given to a defined unit of geological time, divided into Epochs. Unique values which this field may contain (Domains) are:

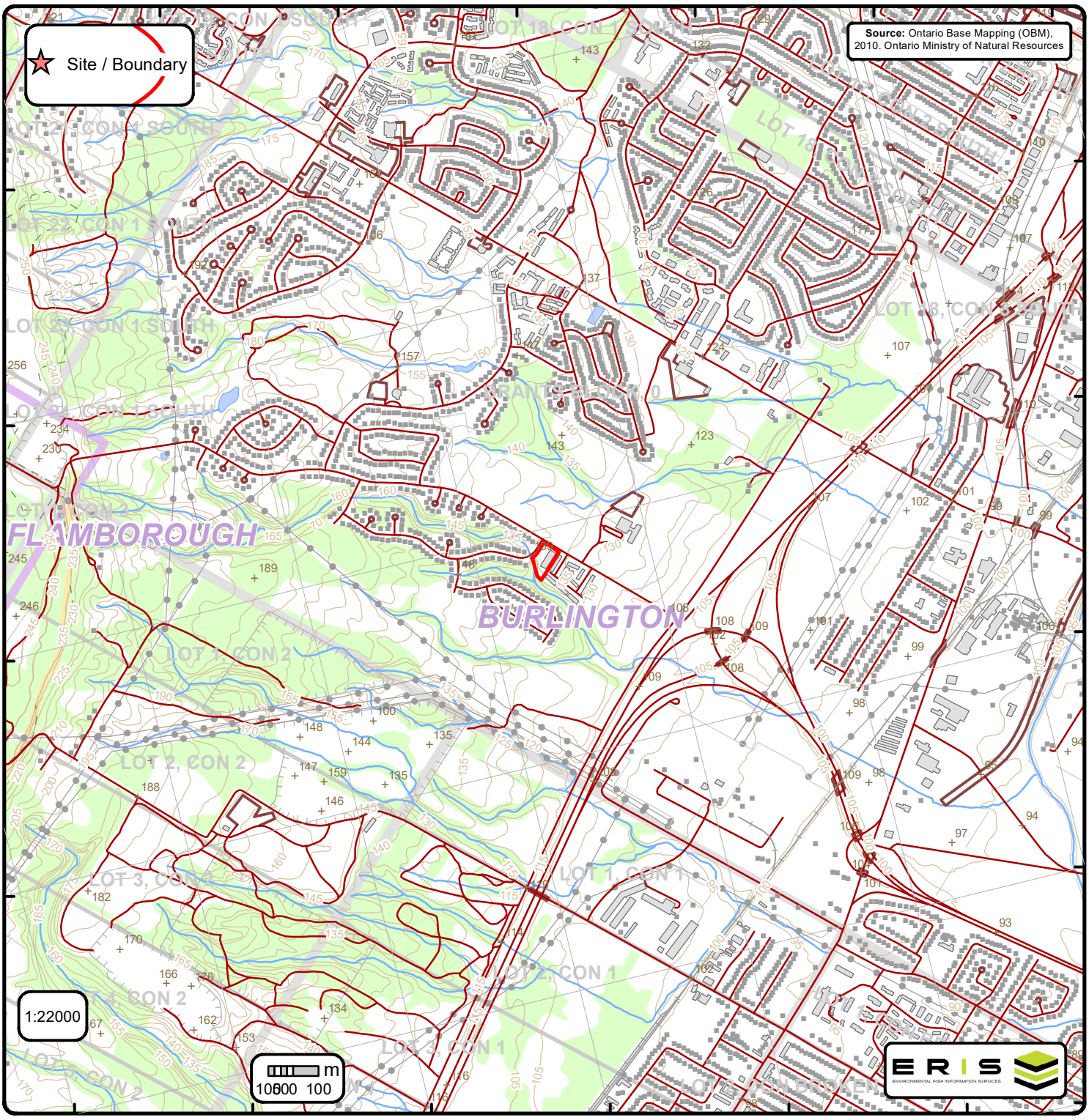
```
CAMBRIAN (488.3 Ma to 542.0 Ma)
ORDOVICIAN (443.7 Ma to 488.3 Ma)
SILURIAN (416.0 Ma to 443.7 Ma)
DEVONIAN (359.2 Ma to 416.0 Ma)
MISSISSIPPIAN TO DEVONIAN (318.1 Ma to 416.0 Ma)
JURASSIC (145.5 Ma to 199.6 Ma)
CRETACEOUS AND JURASSIC (65.5 Ma to 199.6 Ma)
```

Epoch (Primary) - A name given to a defined unit of geological time. Unique values which this field may contain (Domains) are:

```
LOWER ORDOVICIAN
MIDDLE ORDOVICIAN
UPPER ORDOVICIAN
MIDDLE AND LOWER SILURIAN
UPPER SILURIAN TO LOWER DEVONIAN
UPPER SILURIAN
LOWER DEVONIAN
MIDDLE DEVONIAN
UPPER DEVONIAN
LOWER CRETACEOUS AND MIDDLE JURASSIC
```

Province (Primary) - The Geological Province the geological unit is in. Unique values which this field may contain (Domains) are:

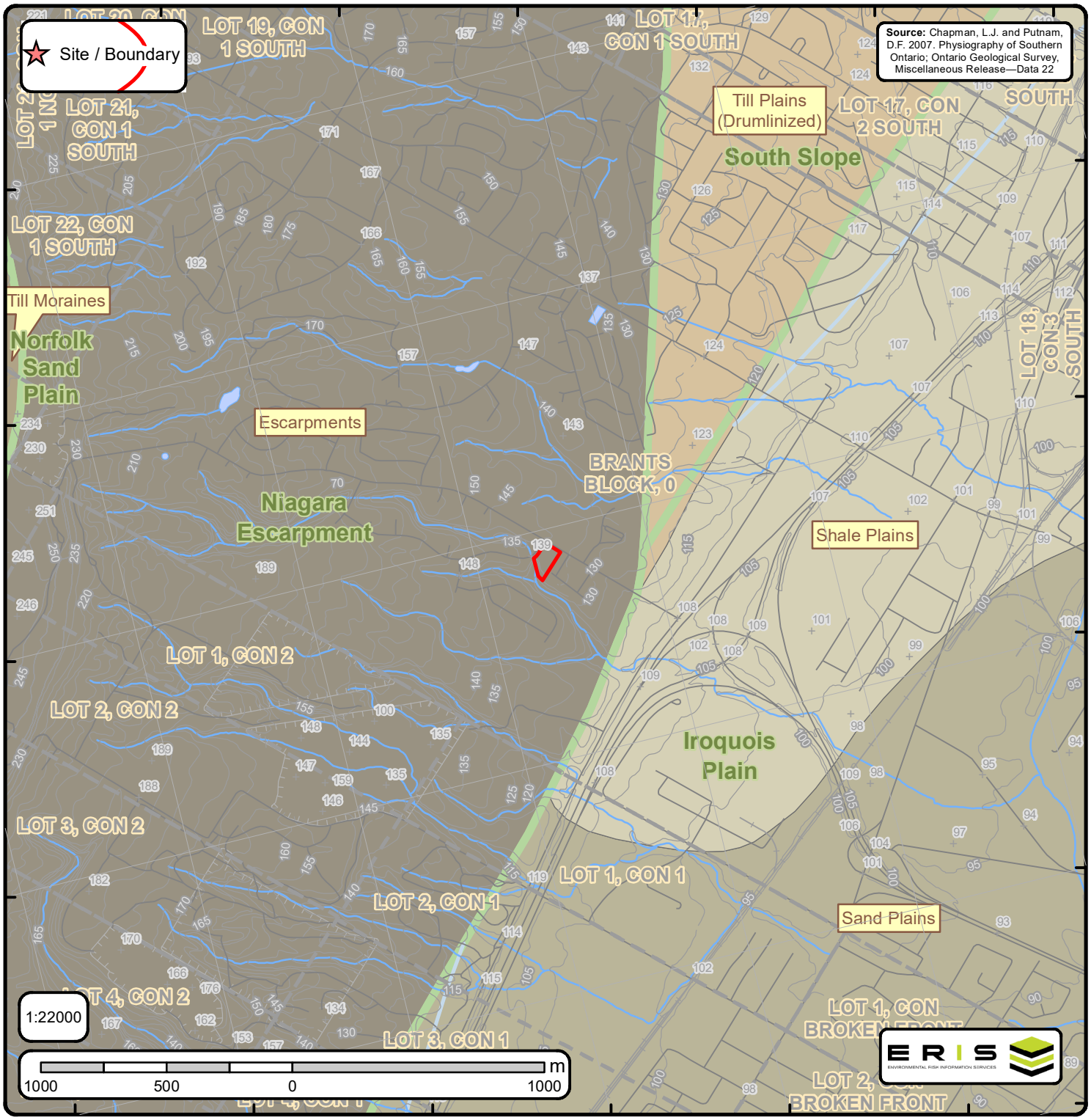
```
SUPERIOR
SOUTHERN
SUPERIOR
GRENVILLE
```



Ontario Base Mapping (OBM) Data

Order No. 20190821151

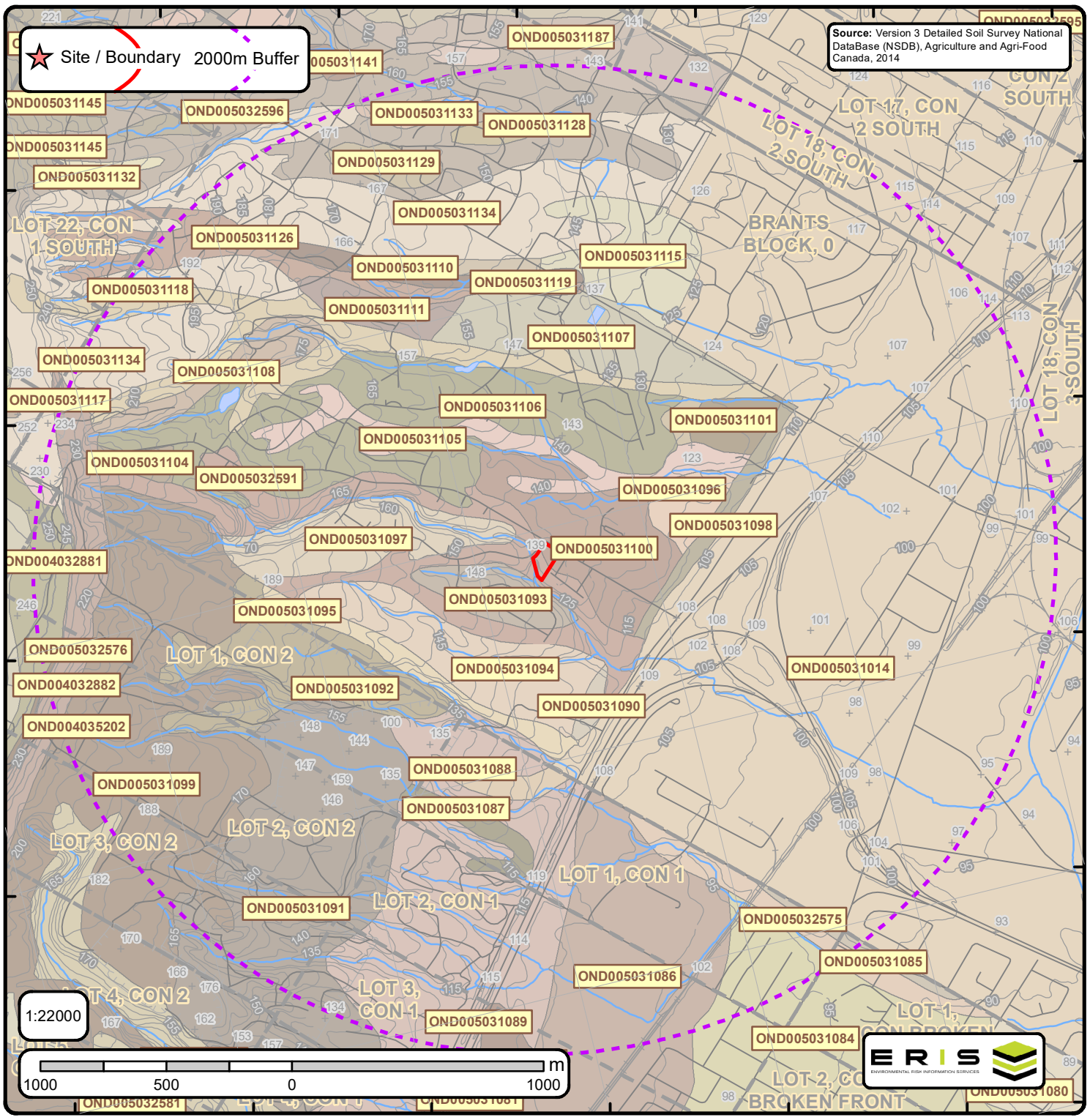
- Spot Height (metre)
- Building Point
- Towers
- Utility Site Point
- Misc. Line
- Railroads
- Roads
- Trail
- Transportation Structure
- Utility Line
- Water Structure
- Drainage Line Feature
- River or Stream
- Airports
- Tanks
- Building to Scale
- Contour Line
- Pit or Quarry
- Waterbody
- Wetlands
- Concession
- Lots
- Municipalitiy
- Land Ownership
- Wooded Area
- Conservation Authority
- Conservation Area
- Municipal Park
- Provincial Park
- National Park
- Nature Reserve



Physiography of Southern Ontario

Order No. 20190821151

- Spot Height
- Roads
- Railroads
- Contour Lines
- Streams
- Lots
- Pit or Quarry
- Airports
- Wetlands
- Waterbody
- Boulder Pavement
- Dissected Terrain
- Mud Flow Scars
- Sand Dunes
- escarpment
- shorecliff
- shorecliff (weakly developed)
- Physiography Regions
- Bare Rock Ridges And Shallow Till
- Beaches
- Bevelled Till Plains
- Clay Plains
- Drumlins
- Escarpments
- Eskers
- Kame Moraines
- Limestone Plains
- Peat And Muck
- Sand Plains
- Shale Plains
- Shallow Till And Rock Ridges
- Spillways
- Till Moraines
- Till Plains (Drumlinized)
- Till Plains (Undrumlinized)



Detailed Soil Survey (ON Soils)

Order No. 20190821151

- Spot Height
- Railroads
- Roads
- Contour Lines
- Streams
- Lots
- Pit or Quarry
- Airports
- Wetlands
- Waterbody

Soils Report

Soil Map Units Found within 2000 m of

19-0087.01.01 1600 Kerns Road, Burlington, Ontario

Order No.
20190821151



Soil ID: OND005031118

Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 37.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : Natural grazing only; no improvements feasible. | **First CLI Limitation Subclass** : Presence of adverse Topography | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031119

Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONJDD~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : moderately severe limitations on use for crops. | **First CLI Limitation Subclass** : Adverse soil structure (i.e. Depth of rooting zone is restricted) | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-13 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 7 | **Total Sand(%)** : 17 | **Total Silt(%)** : 49 | **Total Clay(%)** : 34 | **Organic Carbon(%)** : 2.6 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 0.385 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 13-24 | **Horizon** : Bg | **Layer No** : 2 | **Very Fine Sand(%)** : 4 | **Total Sand(%)** : 12 | **Total Silt(%)** : 42 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 6.3 | **Saturated Hydraulic Conductivity(cm/h)** : 0.207 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 24-49 | **Horizon** : Bg | **Layer No** : 3 | **Very Fine Sand(%)** : 4 | **Total Sand(%)** : 12 | **Total Silt(%)** : 43 | **Total Clay(%)** : 45 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 6.4 | **Saturated Hydraulic Conductivity(cm/h)** : 0.209 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 49-100 | **Horizon** : Ckg | **Layer No** : 4 | **Very Fine Sand(%)** : 4 | **Total Sand(%)** : 11 | **Total Silt(%)** : 50 | **Total Clay(%)** : 39 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.6 | **Saturated Hydraulic Conductivity(cm/h)** : 0.141 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031134

Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |



Soil ID: OND005031133
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 0.2 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031102
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONCGU~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Imperfectly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-27 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 11 | **Total Sand(%)** : 21 | **Total Silt(%)** : 50 | **Total Clay(%)** : 29 | **Organic Carbon(%)** : 1.9 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 0.368 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 27-40 | **Horizon** : Btgj | **Layer No** : 2 | **Very Fine Sand(%)** : 8 | **Total Sand(%)** : 21 | **Total Silt(%)** : 43 | **Total Clay(%)** : 36 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 0.228 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 40-100 | **Horizon** : Ckgj | **Layer No** : 3 | **Very Fine Sand(%)** : 7 | **Total Sand(%)** : 20 | **Total Silt(%)** : 49 | **Total Clay(%)** : 31 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.7 | **Saturated Hydraulic Conductivity(cm/h)** : 0.159 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031110
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |



Soil ID: OND005031111
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 0.2 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND004035202
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZES~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 22.5 | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : No capability for agriculture. | **First CLI Limitation Subclass** : Presence of consolidated bedrock within one metre of the soil surface | **Second CLI Limitation Subclass** : Presence of adverse Topography | **Depth(cm)** : 0-100 | **Horizon** : Ah | **Layer No** : 1 | **Very Fine Sand(%)** : 5 | **Total Sand(%)** : 15 | **Total Silt(%)** : 60 | **Total Clay(%)** : 25 | **Organic Carbon(%)** : 3.9 | **pH in Calc Chloride** : 6.4 | **Saturated Hydraulic Conductivity(cm/h)** : 0.589 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031115
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONCGU~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Imperfectly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-27 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 11 | **Total Sand(%)** : 21 | **Total Silt(%)** : 50 | **Total Clay(%)** : 29 | **Organic Carbon(%)** : 1.9 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 0.368 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 27-40 | **Horizon** : Btgj | **Layer No** : 2 | **Very Fine Sand(%)** : 8 | **Total Sand(%)** : 21 | **Total Silt(%)** : 43 | **Total Clay(%)** : 36 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 0.228 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 40-100 | **Horizon** : Ckgj | **Layer No** : 3 | **Very Fine Sand(%)** : 7 | **Total Sand(%)** : 20 | **Total Silt(%)** : 49 | **Total Clay(%)** : 31 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.7 | **Saturated Hydraulic Conductivity(cm/h)** : 0.159 | **Electrical Conductivity(dS/m)** : 0 |



Soil ID: OND005031012
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : No capability for agriculture. | **First CLI Limitation Subclass** : Presence of adverse Topography | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soil ID: OND005032576
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZES~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 22.5 | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : No capability for agriculture. | **First CLI Limitation Subclass** : Presence of consolidated bedrock within one metre of the soil surface | **Second CLI Limitation Subclass** : Presence of adverse Topography | **Depth(cm)** : 0-100 | **Horizon** : Ah | **Layer No** : 1 | **Very Fine Sand(%)** : 5 | **Total Sand(%)** : 15 | **Total Silt(%)** : 60 | **Total Clay(%)** : 25 | **Organic Carbon(%)** : 3.9 | **pH in Calc Chloride** : 6.4 | **Saturated Hydraulic Conductivity(cm/h)** : 0.589 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031095
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONJDD~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : moderately severe limitations on use for crops. | **First CLI Limitation Subclass** : Adverse soil structure (i.e. Depth of rooting zone is restricted) | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-13 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 7 | **Total Sand(%)** : 17 | **Total Silt(%)** : 49 | **Total Clay(%)** : 34 | **Organic Carbon(%)** : 2.6 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 0.385 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 13-24 | **Horizon** : Bg | **Layer No** : 2 | **Very Fine Sand(%)** : 4 | **Total Sand(%)** : 12 | **Total Silt(%)** : 42 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 6.3 | **Saturated Hydraulic Conductivity(cm/h)** : 0.207 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 24-49 | **Horizon** : Bg | **Layer No** : 3 | **Very Fine Sand(%)** : 4 | **Total Sand(%)** : 12 | **Total Silt(%)** : 43 | **Total Clay(%)** : 45 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 6.4 | **Saturated Hydraulic Conductivity(cm/h)** : 0.209 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 49-100 | **Horizon** : Ckg | **Layer No** : 4 | **Very Fine Sand(%)** : 4 | **Total Sand(%)** : 11 | **Total Silt(%)** : 50 | **Total Clay(%)** : 39 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.6 | **Saturated Hydraulic Conductivity(cm/h)** : 0.141 | **Electrical Conductivity(dS/m)** : 0 |



Soil ID: OND005031094
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 0.2 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031097
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031096
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : No capability for agriculture. | **First CLI Limitation Subclass** : Presence of consolidated bedrock within one metre of the soil surface | **Second CLI Limitation Subclass** : Presence of adverse Topography | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |



Soil ID: OND005031091
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : No capability for agriculture. | **First CLI Limitation Subclass** : Presence of consolidated bedrock within one metre of the soil surface | **Second CLI Limitation Subclass** : Presence of adverse Topography | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soil ID: OND005032575
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZST~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : None | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-100 | **Horizon** : ABh | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 10 | **Total Silt(%)** : 46 | **Total Clay(%)** : 44 | **Organic Carbon(%)** : 2.3 | **pH in Calc Chloride** : 6.5 | **Saturated Hydraulic Conductivity(cm/h)** : 0.228 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031093
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 0.2 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |



Soil ID: OND005031092
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : No capability for agriculture. | **First CLI Limitation Subclass** : Presence of adverse Topography | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soil ID: OND005031187
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031089
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 12.0 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Presence of adverse Topography | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |



Soil ID: OND005031099
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 12.0 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Presence of adverse Topography | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031098
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 12.0 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Presence of adverse Topography | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031090
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 12.0 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Presence of adverse Topography | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |



Soil ID: OND005031014
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : None | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soil ID: OND005031108
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 0.2 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031126
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |



Soil ID: OND005031129
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 0.2 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031128
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031101
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 0.2 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |



Soil ID: OND005031100
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 12.0 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031107
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 0.2 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031106
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 0.2 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |



Soil ID: OND005031105
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 22.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : Very severe limitations preclude annual cultivation; improvements feasible. | **First CLI Limitation Subclass** : Presence of adverse Topography | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031104
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 12.0 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Presence of adverse Topography | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND004032880
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Moderately stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |



Soil ID: OND004032881
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONFRM~~~~~N | **Surface Stoniness Class** : Moderately stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : Natural grazing only; no improvements feasible. | **First CLI Limitation Subclass** : Presence of consolidated bedrock within one metre of the soil surface | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-21 | **Horizon** : Ah | **Layer No** : 1 | **Very Fine Sand(%)** : 19 | **Total Sand(%)** : 44 | **Total Silt(%)** : 44 | **Total Clay(%)** : 12 | **Organic Carbon(%)** : 3.7 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 1.969 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 21-38 | **Horizon** : Bm | **Layer No** : 2 | **Very Fine Sand(%)** : 13 | **Total Sand(%)** : 49 | **Total Silt(%)** : 45 | **Total Clay(%)** : 6 | **Organic Carbon(%)** : 3.1 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 3.014 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-50 | **Horizon** : C | **Layer No** : 3 | **Very Fine Sand(%)** : 19 | **Total Sand(%)** : 57 | **Total Silt(%)** : 36 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 1.3 | **pH in Calc Chloride** : 7.0 | **Saturated Hydraulic Conductivity(cm/h)** : 1.979 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 50-100 | **Horizon** : R | **Layer No** : 4 | **Very Fine Sand(%)** : -9 | **Total Sand(%)** : -9 | **Total Silt(%)** : -9 | **Total Clay(%)** : -9 | **Organic Carbon(%)** : None | **pH in Calc Chloride** : None | **Saturated Hydraulic Conductivity(cm/h)** : None | **Electrical Conductivity(dS/m)** : None |

Soil ID: OND005031088
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : No capability for agriculture. | **First CLI Limitation Subclass** : Presence of adverse Topography | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soil ID: OND005032596
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONJDD~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : moderately severe limitations on use for crops. | **First CLI Limitation Subclass** : Adverse soil structure (i.e. Depth of rooting zone is restricted) | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-13 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 7 | **Total Sand(%)** : 17 | **Total Silt(%)** : 49 | **Total Clay(%)** : 34 | **Organic Carbon(%)** : 2.6 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 0.385 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 13-24 | **Horizon** : Bg | **Layer No** : 2 | **Very Fine Sand(%)** : 4 | **Total Sand(%)** : 12 | **Total Silt(%)** : 42 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 6.3 | **Saturated Hydraulic Conductivity(cm/h)** : 0.207 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 24-49 | **Horizon** : Bg | **Layer No** : 3 | **Very Fine Sand(%)** : 4 | **Total Sand(%)** : 12 | **Total Silt(%)** : 43 | **Total Clay(%)** : 45 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 6.4 | **Saturated Hydraulic Conductivity(cm/h)** : 0.209 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 49-100 | **Horizon** : Ckg | **Layer No** : 4 | **Very Fine Sand(%)** : 4 | **Total Sand(%)** : 11 | **Total Silt(%)** : 50 | **Total Clay(%)** : 39 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.6 | **Saturated Hydraulic Conductivity(cm/h)** : 0.141 | **Electrical Conductivity(dS/m)** : 0 |



Soil ID: OND005032591
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOID~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 22.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : clay loam | **Field Crops Capability** : Very severe limitations preclude annual cultivation; improvements feasible. | **First CLI Limitation Subclass** : Presence of adverse Topography | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-8 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.7 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.609 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 8-15 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 44 | **Total Clay(%)** : 26 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.348 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 30 | **Total Silt(%)** : 42 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.336 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-38 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 22 | **Total Silt(%)** : 32 | **Total Clay(%)** : 46 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.221 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-68 | **Horizon** : Bt | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 20 | **Total Silt(%)** : 32 | **Total Clay(%)** : 48 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 68-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 21 | **Total Silt(%)** : 39 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.215 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031083
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONSRI~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils that have a low runoff potential and high infiltration rate, as the soils typically are sands and gravel. | **Soil Texture of A Horizon** : moderately coarse sandy loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : Low inherent Moisture holding capacity | **Depth(cm)** : 0-21 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 8 | **Total Sand(%)** : 63 | **Total Silt(%)** : 27 | **Total Clay(%)** : 10 | **Organic Carbon(%)** : 1.0 | **pH in Calc Chloride** : 4.9 | **Saturated Hydraulic Conductivity(cm/h)** : 2.516 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 21-43 | **Horizon** : Bm | **Layer No** : 2 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 68 | **Total Silt(%)** : 24 | **Total Clay(%)** : 8 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 5.4 | **Saturated Hydraulic Conductivity(cm/h)** : 3.33 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 43-80 | **Horizon** : Bt | **Layer No** : 3 | **Very Fine Sand(%)** : 5 | **Total Sand(%)** : 71 | **Total Silt(%)** : 17 | **Total Clay(%)** : 12 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 6.5 | **Saturated Hydraulic Conductivity(cm/h)** : 1.953 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 80-110 | **Horizon** : Ck | **Layer No** : 4 | **Very Fine Sand(%)** : 3 | **Total Sand(%)** : 85 | **Total Silt(%)** : 11 | **Total Clay(%)** : 4 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 5.273 | **Electrical Conductivity(dS/m)** : 0 |

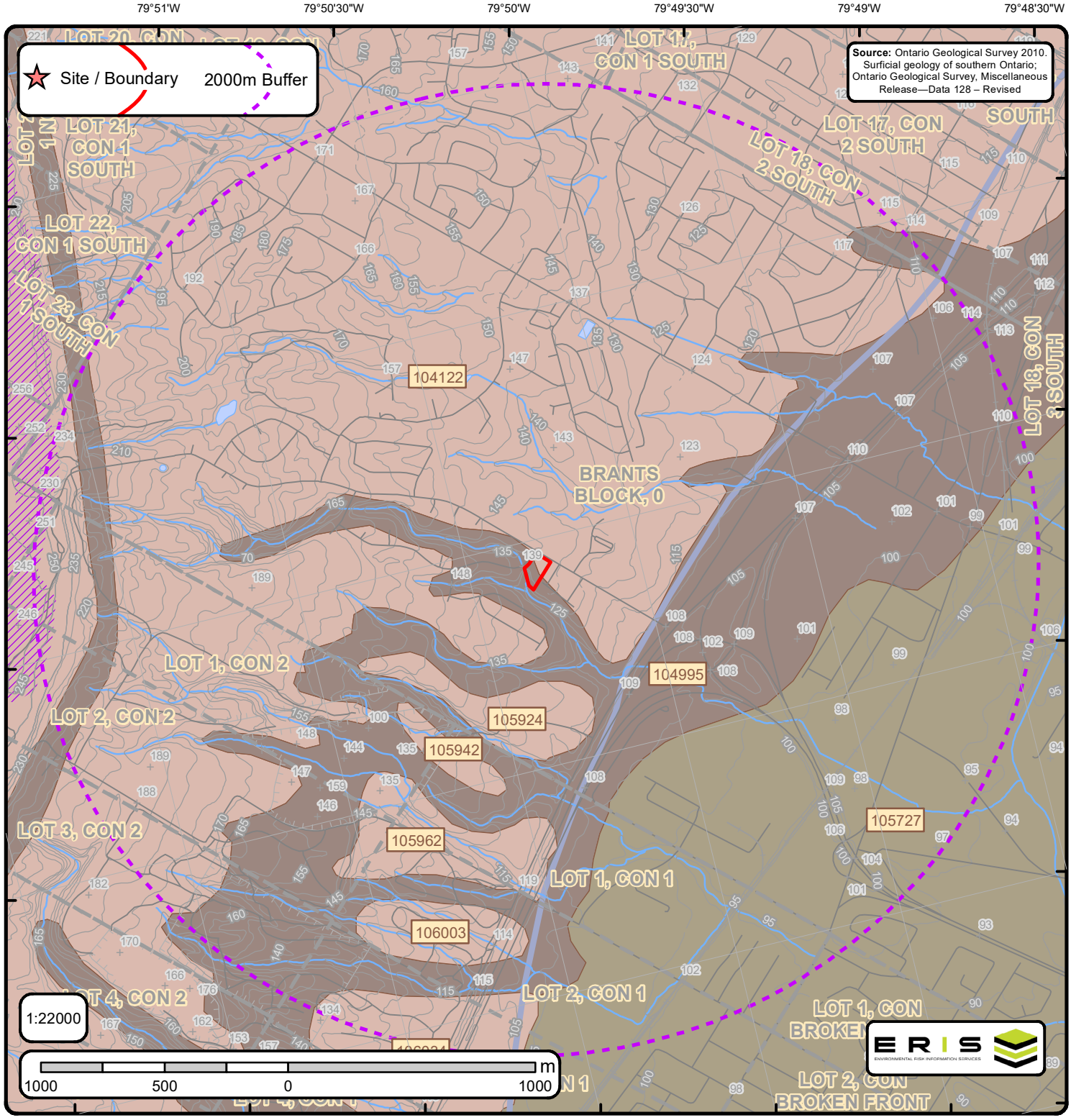
Soil ID: OND005031086
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONWIO~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Imperfectly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : moderately coarse sandy loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-24 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 55 | **Total Sand(%)** : 61 | **Total Silt(%)** : 30 | **Total Clay(%)** : 9 | **Organic Carbon(%)** : 1.3 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 2.83 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 24-50 | **Horizon** : Bmgj | **Layer No** : 2 | **Very Fine Sand(%)** : 50 | **Total Sand(%)** : 57 | **Total Silt(%)** : 34 | **Total Clay(%)** : 9 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 2.575 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 50-58 | **Horizon** : Btgj | **Layer No** : 3 | **Very Fine Sand(%)** : 16 | **Total Sand(%)** : 22 | **Total Silt(%)** : 61 | **Total Clay(%)** : 17 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 0.325 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 58-64 | **Horizon** : Btgj | **Layer No** : 4 | **Very Fine Sand(%)** : 14 | **Total Sand(%)** : 19 | **Total Silt(%)** : 53 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 0.237 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 64-83 | **Horizon** : BC | **Layer No** : 5 | **Very Fine Sand(%)** : 7 | **Total Sand(%)** : 18 | **Total Silt(%)** : 54 | **Total Clay(%)** : 28 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 7.6 | **Saturated Hydraulic Conductivity(cm/h)** : 0.237 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 83-103 | **Horizon** : Ckg | **Layer No** : 6 | **Very Fine Sand(%)** : 6 | **Total Sand(%)** : 20 | **Total Silt(%)** : 55 | **Total Clay(%)** : 25 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 8.3 | **Saturated Hydraulic Conductivity(cm/h)** : 0.237 | **Electrical Conductivity(dS/m)** : 0 |



Soil ID: OND005031087
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : No capability for agriculture. | **First CLI Limitation Subclass** : Presence of adverse Topography | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soil ID: OND005031084
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONGUP~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-25 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 22 | **Total Sand(%)** : 51 | **Total Silt(%)** : 36 | **Total Clay(%)** : 13 | **Organic Carbon(%)** : 1.5 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 1.54 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 25-40 | **Horizon** : Bt | **Layer No** : 2 | **Very Fine Sand(%)** : 18 | **Total Sand(%)** : 43 | **Total Silt(%)** : 37 | **Total Clay(%)** : 20 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 0.534 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 40-100 | **Horizon** : Ck | **Layer No** : 3 | **Very Fine Sand(%)** : 19 | **Total Sand(%)** : 57 | **Total Silt(%)** : 32 | **Total Clay(%)** : 11 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 7.5 | **Saturated Hydraulic Conductivity(cm/h)** : 1.22 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND005031085
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONGMY~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils that have a low runoff potential and high infiltration rate, as the soils typically are sands and gravel. | **Soil Texture of A Horizon** : moderately coarse sandy loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : Low inherent Moisture holding capacity | **Depth(cm)** : 0-23 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 33 | **Total Sand(%)** : 74 | **Total Silt(%)** : 20 | **Total Clay(%)** : 6 | **Organic Carbon(%)** : 1.5 | **pH in Calc Chloride** : 6.1 | **Saturated Hydraulic Conductivity(cm/h)** : 5.067 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-60 | **Horizon** : Bm | **Layer No** : 2 | **Very Fine Sand(%)** : 37 | **Total Sand(%)** : 76 | **Total Silt(%)** : 19 | **Total Clay(%)** : 5 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 5.5 | **Saturated Hydraulic Conductivity(cm/h)** : 5.252 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 60-95 | **Horizon** : Bt | **Layer No** : 3 | **Very Fine Sand(%)** : 35 | **Total Sand(%)** : 76 | **Total Silt(%)** : 13 | **Total Clay(%)** : 11 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 5.6 | **Saturated Hydraulic Conductivity(cm/h)** : 2.328 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 95-115 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 66 | **Total Sand(%)** : 68 | **Total Silt(%)** : 22 | **Total Clay(%)** : 10 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 5.9 | **Saturated Hydraulic Conductivity(cm/h)** : 2.288 | **Electrical Conductivity(dS/m)** : 0 |



The Surficial Geology of Southern Ontario

Order No. 20190821151

- Spot Height
- Waterbody
- Wetlands
- Airports
- Pit or Quarry
- Lots
- Streams
- Contour Lines
- Roads
- Railroads
- Morains
- Dune
- Lake
- Rib
- Scab
- Slide
- NOF Dune
- Beach
- Bluff
- Crevasse
- Crest
- End
- Escarpment
- Esker
- Esker ND
- Fluvial DL
- fluvndl
- iceberg
- icslope
- karst
- linfeat
- megarip
- mfluvdl
- mfluvndl
- moraine
- pitsg
- popup
- ribl
- slidel
- slumpb
- terrace

Surface Geology Report

Surface Geology units found within 2000 m of
19-0087.01.01 1600 Kerns Road, Burlington, Ontario

Order No. 20190821151



ID: 104122 | **Unit Name:** Halton Till |
Deposit Type Code: 10 | **Deposit Age:** Late Wisconsinan | **Map Number:** m2509 | **Map Name:** Hamilton | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** silty clay to clayey silt | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** Port Huron | **Stratus Modifier:** Surface | **Provenance:** Erie-Ontario | **Carbon Content:** medium | **Formation:** Halton Till | **Permeability:** Low | **Material Description:** Clay or silt till

ID: 104995 | **Unit Name:** Bedrock |
Deposit Type Code: 1 | **Deposit Age:** Ordovician and Silurian | **Map Number:** m2509 | **Map Name:** Hamilton | **Source Map Scale:** 1:50 000 | **Primary Material:** Paleozoic Bedrock | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** | **Primary General Modifier:** | **Veneer:** clay, silt, sand, gravel, diamicton | **Episode:** | **Sub Episode:** | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** Variable | **Material Description:** Shale and dolomite

ID: 105727 | **Unit Name:** Lacustrine and outwash sand |
Deposit Type Code: 12 | **Deposit Age:** Late Wisconsinan | **Map Number:** m2509 | **Map Name:** Hamilton | **Source Map Scale:** 1:50 000 | **Primary Material:** sand | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** glaciolacustrine | **Primary General Modifier:** foreshore/basinal | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Sand

ID: 105924 | **Unit Name:** Halton Till |
Deposit Type Code: 10 | **Deposit Age:** Late Wisconsinan | **Map Number:** m2509 | **Map Name:** Hamilton | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** silty clay to clayey silt | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** Port Huron | **Stratus Modifier:** Surface | **Provenance:** Erie-Ontario | **Carbon Content:** medium | **Formation:** Halton Till | **Permeability:** Low | **Material Description:** Clay or silt till

ID: 105942 | **Unit Name:** Halton Till |
Deposit Type Code: 10 | **Deposit Age:** Late Wisconsinan | **Map Number:** m2509 | **Map Name:** Hamilton | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** silty clay to clayey silt | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** Port Huron | **Stratus Modifier:** Surface | **Provenance:** Erie-Ontario | **Carbon Content:** medium | **Formation:** Halton Till | **Permeability:** Low | **Material Description:** Clay or silt till



ID: 105962 | **Unit Name:** Halton Till |
Deposit Type Code: 10 | **Deposit Age:** Late Wisconsinan | **Map Number:** m2509 | **Map Name:** Hamilton | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** silty clay to clayey silt | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** Port Huron | **Stratus Modifier:** Surface | **Provenance:** Erie-Ontario | **Carbon Content:** medium | **Formation:** Halton Till | **Permeability:** Low | **Material Description:** Clay or silt till

ID: 106003 | **Unit Name:** Halton Till |
Deposit Type Code: 10 | **Deposit Age:** Late Wisconsinan | **Map Number:** m2509 | **Map Name:** Hamilton | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** silty clay to clayey silt | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** Port Huron | **Stratus Modifier:** Surface | **Provenance:** Erie-Ontario | **Carbon Content:** medium | **Formation:** Halton Till | **Permeability:** Low | **Material Description:** Clay or silt till

ID: 106034 | **Unit Name:** Halton Till |
Deposit Type Code: 10 | **Deposit Age:** Late Wisconsinan | **Map Number:** m2509 | **Map Name:** Hamilton | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** silty clay to clayey silt | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** Port Huron | **Stratus Modifier:** Surface | **Provenance:** Erie-Ontario | **Carbon Content:** medium | **Formation:** Halton Till | **Permeability:** Low | **Material Description:** Clay or silt till

Surface Geology Report Metadata

Ontario Geological Survey 2010. Surficial geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release - Data 128 - Revised.

ONTARIO MINISTRY OF NORTHERN DEVELOPMENT, MINES AND FORESTRY



ID - ID applied to the Unit

Unit Name - Name of deposit

Deposit Type Code - The geological unit number taken from the original map legend.

Deposit Age - to show the age when the sediments were deposited, e.g., Wisconsinan, postglacial or recent.

Map Number - Original map series number, eg., 'M2402' or 'P1973'. Each sgu_point feature is tagged to its original map.

Map Name - Usually NTS area where mapping was completed, e.g., 'Golden Lake'

Source Map Scale - The scale at which the original map was captured, e.g., '1:50 000'

Primary Material - This attribute provides the user with information regarding the most prevalent material present within a given area.

Primary Material Modifier- This attribute provides the user with a more refined description of the lithological classification of the primary material.

Secondary Material - This attribute provides the user with information regarding subordinate materials present within a given area.

Primary General - This attribute provides the user with an interpretation of the depositional environment within which the primary material was deposited.

Primary General Modifier - This attribute provides the user with a refined interpretation of the primary genetic modifier.

Veneer - This attribute provides the user with information regarding the type of material that forms a thin, discontinuous veneer over the primary material.

Sub Episode - A diachronic stratigraphic unit in a lower order than Episode and the proposed sequence-stratigraphic classification, consists in descending order of Michigan, Elgin and Ontario in the eastern and northern Great Lakes area in the Wisconsin Episode (Johnson et al. 1997; Karrow et al. 2000).

Sub Episode - A diachronic stratigraphic unit in a lower order than Episode and the proposed sequence-stratigraphic classification, consists in descending order of Michigan, Elgin and Ontario in the eastern and northern Great Lakes area in the Wisconsin Episode (Johnson et al. 1997; Karrow et al. 2000).

Phase - A diachronic stratigraphic unit in a lower order than Subepisode, and the proposed sequence-stratigraphic classification is listed in the following table in the eastern and northern Great Lakes area (Karrow et al. 2000)

Stratus Modifier - This attribute provides the user information regarding the stratigraphic position of the mapped unit (i.e., whether the unit occurs primarily on the surface or in the subsurface).

Provenance - This attribute provides the user with information regarding the provenance of a particular till unit (i.e. direction or lobe from which the till is derived).

Carbon Content - This attribute provides the user with information regarding the carbonate content of till.

Formation - This attribute provides the user with information regarding the formation to which a given primary material belongs (e.g., Tavistock Till, Port Stanley Till, Scarborough Formation). This attribute is seamless and allows the user to create a map based on formation.

Permeability - This attribute provides the user with basic information about permeability of the sediments in a ranking of high, medium and low.

Material Description - Material or sediment description, e.g., 'sand and silty fine sand', 'silty sand and gravel' and 'silty till with low stone content'.

APPENDIX D

Correspondence with Regulatory Agencies

Brittany Pereira

From: Public Information Services <publicinformationservices@tssa.org>
Sent: August 22, 2019 7:37 AM
To: Brittany Pereira
Subject: RE: 19-0087.01.01 - 1600 Kerns Rd, Burlington, Ontario

Records Found

Hello,

Thank you for your request for confirmation of public information.

- We confirm that there are **fuel storage tanks records** in our database at the subject address(es).

Inst Number	Segment1	Address	City	Status
64700484	FS CYLINDER EXCHANGE	1600 KERNS RD	BURLINGTON	Active

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.

Kind regards,

Connie Hill | Public Information Agent
Facilities
345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel: +1-416-734-3383 | Fax: +1-416-231-6183 | E-Mail: publicinformationservices@tssa.org
www.tssa.org

From: Brittany Pereira <bpereira@wattersenvironmental.com>
Sent: August 21, 2019 1:47 PM
To: Public Information Services <publicinformationservices@tssa.org>
Subject: 19-0087.01.01 - 1600 Kerns Rd, Burlington, Ontario

Hello,

Can you please check your records for information regarding any historical or current ASTs or USTs or inspections conducted at 1600 Kerns Road, Burlington, Ontario?

Thank you,

Brittany Pereira
Director of First Impressions

Watters Environmental Group Inc.
9135 Keele Street, Unit A1
Concord, Ontario
L4K 0J4

Tel: (416) 361-2407 ext. 285
Fax: (416) 361-2410

http://www.wattersenvironmental.com

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Technical Standards and Safety Authority
345 Carlingview Drive
Toronto, Ontario M9W 6N9
Customer Service: 1.877.682.8772
Fax: 416.734.3568
Email:publicinformationservices@tssa.org
www.tssa.org

Application for Release of Public Information
Issued under the Access and Privacy Code

Clear Form | Print Form

A. REQUESTOR INFORMATION:

Your File/Project/Reference No: 19-0087.01.01 Date: August 22,2019

Requestor Name: Brittany Pereira		Organization: Watters Environmental Group Inc	**For Office Use Only**
Suite/Unit No: A1	Street No: 9135	Street Name: Keele St	Authorization No.
City: Vaughan	Province: Ontario	Postal Code: L4K 0J4	Account No.
Primary Phone: 416 361 2407	Secondary Phone:		SR No.
Email: bpereira@wattersenvironmental.cor	Fax: 416 361 2410		P.I No:

B. PROGRAM (check ALL that apply)

☐ Boilers & Pressure Vessels ☐ Elevating & Amusement Devices ☐ Fuels ☐ Upholstered and Stuffed Articles

C. DETAILS OF REQUEST (please list in detail the information you require)

D. PLEASE ANSWER ALL THAT APPLY:

Address of Subject Location (one address per form)
1600 Kerns Road, Burlington, Ontario

Device/equipment Type: _____ Owner: _____

Installation Number: _____

CRN: _____ OIN: _____ Serial #: _____

Victim Name (if applicable): _____

Certificate Holder Name (if applicable): _____ Certificate Holder Date of Birth: _____ (DD-MM-YYYY)

Date /period requested:

☐ From (date): _____ to (date) _____

☐ Most recent record

Technical Standards and Safety Authority
345 Carlingview Drive
Toronto, Ontario M9W 6N9
Fax: 416.734.3568
Customer Service: 1.877.682.8772
Email:publicinformationservices@tssa.org
www.tssa.org

Application for Release of Public Information
Issued under the Access and Privacy Code

E. REASON FOR REQUEST (please explain the reason for your request)

Detailed Report

F. TERMS AND CONDITIONS:

Please refer to the link for our Access and Privacy Code Access and Privacy Code.pdf. If this request includes a release of personal information, TSSA will require consent from the effected party.

Applicant Signature		Date
Brittany	**Please Print and sign before returning to TSSA**	22-Aug-2019

G. FEES & PAYMENT:

TSSA will provide a fee quote for multiple record requests, which must be approved by the Applicant before a record search commences. For fees for single searches, please refer to Fee Schedule Website Fee Schedule.pdf

Payment for single record search is attached (please check if payment attached)

Technical Standards and Safety Authority
345 Carlingview Drive
Toronto, Ontario M9W 6N9

COMPLETE FOR CREDIT CARD PAYMENTS

Card Type: ☑ VISA ☐ MASTERCARD

Amount of Payment $ 56.50

Card# X X X X X X X X X X X X X X X X

Expiry Date XX XX

In payment of TSSA Records

Name of Card Holder Robert (*First Name*) Watters (*Last Name*) Client Tel. No. 4163612407

Signature of Card Holder Robert Watters Date 08-22-2019 (DD-MM-YYYY)

345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel.: 416.734.3300
Fax: 416.231.1626
Toll Free: 1.877.682.8772

www.tssa.org

18 September 2019

Brittany Pereira
Watters Environmental Group Inc
A1-9135 Keele Street
Vaughan ON L4K 0J4

Subject: **1600 Kerns Road, Burlington**
Your File No.: **19-0087.01.01**
SR No.: **2670986**

Dear Madam/Sir:

We are in receipt of your correspondence wherein you requested information regarding the above noted subject.

A search of our records produced the attached Fuel Safety documents.

TSSA does not make any representations or warranties with respect to the accuracy or completeness of any records released. The requestor assumes all risk in using or relying on the information provided.

Trusting the attached satisfies your request; however, should you have any questions, please contact Public Information at publicinformationservices@tssa.org.

Yours truly,

Gaya Nair

Gaya Nair
Public Information Services

Installed Base

Navigator Favorites Home Profile Sign Out Help

Item Instances

Item Instances | Transactions | Systems

Quick Find Item Instance Go Advanced Search

Logged In As GNAIR

- General
- Additional Attributes
- Assets
- Party Relationships
  - Owner
  - Parties
  - Accounts
  - Contacts
  - Summary
- Pricing
- Counters
- Contracts
- Notes
- Transactions
- Service Requests
- Repair Orders
- History
- Operating Units
- Configuration

Item Instance Details

Item Instance: 64700484
Item: FS CYLINDER EXCHANGE
Item Description: FS Cylinder Exchange

General Attributes

Organization Name	TSSA Item Master	Instance Name	
Last Version Label	AS_CREATED	Version Label Date	02-SEP-2015 14:10
Revision		New Version Label	
System	Go	External Reference	
Item Instance Type		Accounting Classification	Customer Product
Operational Status	Not Used	Lot Number	: not lot-controlled
Status	Active	Condition	
Quantity	1	UOM	Each
Start Date	02-SEP-2015	Start Time	14:10
Shipped On Date		Shipped On Time	
End Date		End Time	
Return By Date		Return By Time	
Actual Return Date		Actual Return Time	

* Indicates required field.

Time format is HH24:MM

Note: You do not have permission to make updates in this page.

☑ Creation Completed

Owner

Party Type	Party		
Party Name:	2616745 ONTARIO INC. DBA TYANDAGA CORNER STORE	Party Number:	1273504
	482298	Account Name	

Account Number: 2616745 ONTARIO INC. DBA TYANDAGA CORNER STORE

Current Location

* Type: Party Site [Go]

Party Name: 2616745 ONTARIO [Go] Party Number: 1273504 [Go]

*Line 1: 1600 KERNS RD [Go] Site Number: 1084101 [Go]

Address: 1600 KERNS RD
BURLINGTON, L7P 3G9, CA

Installed At

Installed Date 02-SEP-2015 Installed Time 14:10

Time format is HH24:MM

Change in installed date does not change contract date.

Type: [Go]

Order

Sales Order Number | Sales Order Date

Sales Order Line

Purchase Order Number | Agreement Name

Item Flags

- [x] BOM Enabled
- [x] IB Trackable
- [ ] Inventory Trackable
- [x] Sellable
- [ ] Shippable

Item Views

- [ ] Merchant
- [x] Customer

Descriptive Flexfields

Context Value

Select Context Value and click 'Go' to show relevant fields.

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CITY OF Burlington

Phone: 905-335-7642
Fax: 905-335-7880

PLANNING DEPARTMENT

April 23, 2018

Mighty Flame Canada
ATTN: MIKE MARTIN
95 ST. CLAIR AVE W UNIT 1403
TORONTO ON M4V 1N6

SUBJECT: **Zoning Verification for 1600 Kern's Rd., Burlington**
Our File No.: **18-005839**

In response to your inquiry, the Planning and Building Department is able to provide the following information:

The subject property located at 1600 Kern's Rd., Burlington is zoned CN2, Neighbourhood Commercial, under Zoning By-Law 2020, as amended. The CN2 zone permits the use of a Convenience/Specialty Food Store.

Your letter indicates that you have an existing propane cylinder storage cabinet for the sale and exchange of pre-filled 20 lb propane cylinders. If the size of the cages (storage racks) used to house the propane cylinders are less than 10 sq m a building permit and zoning certificate will not be required.

The proposed use would be permitted on site as an incidental or accessory use to the existing Convenience/Specialty Food Store. The refilling of propane cylinders on site would not be permitted.

The actual location of the storage cabinets are subject to Provincial Propane Regulations and the regulations administered by the Technical Standard and Safety Authority. Please also note that the location of the cage that houses the propane cylinders cannot be located in a required parking space or required landscape areas or buffers.

Please note the subject lands are within the Conservation Halton Regulated Area and as such you may require their approval prior to any other approvals. Please contact them for any additional information.

I trust this satisfies your inquiry. Zoning By-Law 2020 is now online should you require additional information, please visit us at www.burlington.ca

Although to the best of our knowledge this information is correct, the Corporation of the City of Burlington, any of its servants or employees, any person making examinations or inspections upon which this information is based, accept no liability whatsoever for any errors, omissions or inaccuracies contained in this information or in respect of any said examinations or inspections, whether due to the negligence of said persons, or otherwise, or for any loss or damage arising from any such error, omission or inaccuracy.

Yours Sincerely,
Mark Dalrymple
Zoning Examiner
City of Burlington
Planning Department

Ministry of the Environment
Freedom of Information and Protection of Privacy Office
40 St. Clair Avenue West, 12th Floor
Toronto, ON M4V 1M2
Tel: 416-314-4075
Fax: 416-314-4285

Ontario

Use this form to request records that are in the Ministry's files on environmental concerns related to properties. Please refer to the guide on the completion and use of this form. Our fax no. is 416- 314-4285.

Requester Data	For Ministry Use Only
Brooklyn Espinola Name and Mailing Address of Requester Watters Environmental Group Inc. 9135 Keele Street, Unit A1 Concord, ON L4K 0J4 bvespinola@wattersenvironmental.com Tel: 416 361 2407 Fax: 416 361 2410	FOI Request No. / Date Request Received Fee Paid ☐ CHQ ☑ VISA/MC/AMEX ☐ CASH/MONEY ORDER ☐ CNR ☐ ER ☐ NOR ☐ SWR ☐ WCR ☐ IEB ☐ EAA ☐ EMR ☐ SCB ☐ SDW
Your Project/ Reference No.: 19-0087-01-01	Signature of Requester: BEspinola

Request Parameters

Municipal Address/Lot, Concession, Geographic Township **(Municipal address mandatory for cities, towns or regions)**

1600 KERNS RD, BURLINGTON, ONTARIO

Present Property Owner(s) and Date(s) of Ownership

FGL KERNS INC.

Previous Property Owner(s) and Date(s) of Ownership

Present/Previous Tenant(s) (if applicable)

Search Parameters Files older than 2 years may require $60.00 retrieval cost. There is no guarantee that records responsive to your request will be located.	Specify Year(s) Requested
Environmental concerns (General correspondence, occurrence reports, abatement)	All Years
Orders	
Spills	
Investigations/prosecutions ▸ ***Owner and tenant information must be provided***	
Waste Generator number/classes	

Certificates of Approval ▸ Proponent information must be provided and Certificates of Approval number(s) (if known). 1985 and prior records are searched manually. **Search fees in excess of $300.00** may be incurred, depending on the types and years of records to be searched. **If supporting documents are also required, mark SD box.**

	SD	Specify Year(s) Requested
Air - *emissions*		1985 - Present
Renewable Energy		
Water - *mains, treatment, ground level, standpipes & elevated storage, pumping stations (local & booster)*		
Sewage - *sanitary, storm, treatment, stormwater, leachate & leachate treatment & sewage pump stations*		
Waste water - *industrial discharge*		
Waste sites - *disposal, landfill sites, transfer stations, processing sites, incinerator sites*		
Waste systems - *haulers: sewage, non-hazardous & hazardous waste, mobile waste processing units, PCB destruction*		

RECEIVED AUG 2 6 2019

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

August 22, 2019

Brooklyn Espinola
Watters Environmental Group Inc.
9135 Keele St, Unit A1
Concord, ON L4K 0J4

Dear Brooklyn Espinola:

RE: ***Freedom of Information and Protection of Privacy Act* Request**
Our File # A-2019-05729, Your Reference 19-0087.01.01

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: 1600 Kerns Road, Burlington. 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 Victoria Partosa at victoria.partosa@ontario.ca.

Yours truly,
ORIGINAL SIGNED BY

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

RECEIVED SEP 0 6 2019

Ontario

September 3, 2019

Brooklyn Espinola
Watters Environmental Group Inc.
9135 Keele St, Unit A1
Concord, ON L4K 0J4

Dear Brooklyn Espinola:

RE: ***Freedom of Information and Protection of Privacy Act* Request**
Our File # A-2019-05729, Your Reference 19-0087.01.01

This letter is in response to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 1600 Kerns Road, Burlington.

After a thorough search through the files of the Ministry's Halton Peel District Office, Investigations and Enforcement Branch, Environmental Assessment and Permissions Branch, Environmental Monitoring and Reporting Branch, Sector Compliance Branch and Safe Drinking Water Branch, no records were located responsive to your request. To provide you with this response and in accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, the fee owed is $30.00 for 1 hour of search time @ $30.00 per hour. **We have applied the $30.00 for this request from your initial payment. This file is now closed.**

You may request a review of my decision by contacting the Information and Privacy Commissioner/Ontario, 2 Bloor Street East, Suite 1400, Toronto, ON M4W 1A8 (800-387-0073 or 416-326-3333). Please note that there is a $25.00 fee and you only have 30 days from receipt of this letter to request a review.

If you have any questions regarding this matter, please contact Sasha Naidu at 416-314-4075 or sasha.naidu@ontario.ca.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

$35.00

Ministry of the Environment
Freedom of Information and Protection of Privacy Office
40 St. Clair Avenue West, 12th Floor
Toronto, ON M4V 1M2
Tel: 416-314-4075
Fax: 416-314-4285

Ontario

Use this form to request records that are in the Ministry's files on environmental concerns related to properties. Please refer to the guide on the completion and use of this form. Our fax no. is 416- 314-4285.

Requester Data

Brittany Pereira — Name and Mailing Address of Requester
Watters Environmental Group Inc.
9135 Keele Street, Unit A1
Concord, ON
L4K 0J4
bvespinola@wattersenvironmental.com
Tel: 416 361 2407
Fax: 416 361 2410

Your Project/ Reference No.: 19-0087.0201

Signature of Requester: BPereira

For Ministry Use Only

FOI Request No.

Date Request Received

Fee Paid

☐ CHQ ☑ VISA/MC/AMEX ☐ CASH/MONEY ORDER

☐ CNR ☐ ER ☐ NOR ☐ SWR ☐ WCR

☐ IEB ☐ EAA ☐ EMR ☐ SCB ☐ SDW

Request Parameters

Municipal Address/Lot, Concession, Geographic Township (Municipal address mandatory for cities, towns or regions)

1600 Kerns Road, Burlington, Ontario

Present Property Owner(s) and Date(s) of Ownership

FGL Kerns Inc.

Previous Property Owner(s) and Date(s) of Ownership

Present/Previous Tenant(s) (if applicable)

Search Parameters Files older than 2 years may require $60.00 retrieval cost. There is no guarantee that records responsive to your request will be located.	Specify Year(s) Requested
Environmental concerns (General correspondence, occurrence reports, abatement)	
Orders	
Spills	
Investigations/prosecutions ▸ *Owner and tenant information must be provided*	
Waste Generator number/classes	

Certificates of Approval ▸ Proponent information must be provided and Certificates of Approval number(s) (if known). 1985 and prior records are searched manually. Search fees in excess of $300.00 may be incurred, depending on the types and years of records to be searched. If supporting documents are also required, mark SD box.

	SD	Specify Year(s) Requested
Air - *emissions*		
Renewable Energy		
Water - *mains, treatment, ground level, standpipes & elevated storage, pumping stations (local & booster)*		
Sewage - *sanitary, storm, treatment, stormwater, leachate & leachate treatment & sewage pump stations*		
Waste water - *industrial discharge*		
Waste sites - *disposal, landfill sites, transfer stations, processing sites, incinerator sites*		
Waste systems - *haulers: sewage, non-hazardous & hazardous waste, mobile waste processing units, PCB destruction*		

Waste Disposal Site Records related to Site 7055 located in the Old Waste Disposal Site Study binder

RECEIVED DEC 19 2019

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

December 16, 2019

Brittany Pereira
Watters Environmental Group Inc
9135 Keele Street, Unit A1
Concord, ON L4K 0J4

Dear Brittany Pereira:

RE: ***Freedom of Information and Protection of Privacy Act* Request**
Our File # A-2019-08639, Your Reference 19-0087.0201

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: 1600 Kerns Road, Burlington. 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 Eric Giang at eric.giang@ontario.ca.

Yours truly,

EG

Dalia Bouganim
Manager (A), 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

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12e étage
40, avenue St. Clair ouest
Toronto ON M4V 1M2
Tél. : (416) 314-4075

Ontario

January 30, 2020

Brittany Pereira
Watters Environmental Group Inc
9135 Keele Street, Unit A1
Concord, ON L4K 0J4

Dear Brittany Pereira:

RE: *Freedom of Information and Protection of Privacy Act* Request
Our File #: A-2019-08639, Your Reference #: 19-0087.0201

This letter is in response to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* for Waste Disposal Site records related to Site 7055 located in the Old Waste Disposal Site Study binder (by 1600 Kerns Road, Burlington).

After a thorough search of the Ministry's Halton Peel District Office, records were located in response to your request. It is my decision to provide full access to the attached information.

In accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, detailed below are our charges:

• Search Time 1 hour @ $30/hour	$30.00
• Copying 8 pages @ $0.20/page	$1.60
• **Total**	**$ 31.60**
• Deposit Received	- 30.00
• **BALANCE WAIVED (NOT REQUIRED)**	**$ 1.60**

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 Dawn Lewis at dawn.lewis@ontario.ca.

Yours truly,

Dawn Lewis

FOR
Noel Kent
Manager (Acting), Access and Privacy

Attachments

Ministry of the Environment
Ontario

OLD WASTE DISPOSAL SITE STUDY

Site Number... 7055

Location..... KERN'S ROAD
BURLINGTON
REGION OF HALTON

Morrison Beatty Limited | Gore & Storrie Limited

000008

Ministry of the Environment
Ontario

OLD WASTE DISPOSAL SITE STUDY

SITE NO. 7055
LOCATION
Kern's Road
Burlington

Background

Waste Disposal Practices

- Southern portion was operated originally as the Nelson Township Garbage disposal site and then taken over by the City of Burlington.
- The site is believed to have operated in the 1960's and closed in early 1970.
- A study for the subdivision development found that the wastes were up to 13 metres deep.
- The fill is municipal with organics, glass, wood and metal wastes.
- Information sources included a local resident and the firm of William Trow & Associates' foundation investigation study for the proposed homes.

Land Uses

Original - Open space farmland.

Present Development

On-site
- A low density residential subdivision which includes Village Green, Clifton Green and Larchwood Green Crescents.
- A portion of Four Seasons Drive and Kern's Road intersection.
- Residential development on Kern's Road and south to include the small plaza parking lot.

Abutting

North - Bush covered land and residential houses along Kern's Road.
West - Hager Creek and bush area.
East - Kern's Road and undeveloped land.
South - Residential houses along Kern's Road.

Present Site Owner

- The land is owned by the private homeowners.
- The road allowances are owned by the City of Burlington.

Hydrogeologic Setting

Geology

- the general area is underlain by Queenston shale; however, thin deposits of glacial till may be present locally

Regional Drainage

- the site abuts Hager Creek, which flows in a deep ravine immediately west of the residential development at the site
- the internal portions of the subdivision is served by storm sewers

Disposal Site Detail

M-141279

Fill Characteristics

- the refuse at this site appears to have been dumped into roadside ravines
- test drilling by Wm. Trow Associates (in 1974) shows refuse depths up to 10 m; the Trow report recommended pile foundations for homes built on the Kern's Road fill area; no information was obtained for the foundation design of homes on the 3 cul-de-sac subdivisions

Topography and Drainage

- the properties around each cul-de-sac development have been graded inward to the storm sewer catchments
- drainage appears to be good

Identified Impact

Settlement & Erosion

- settlement of the fill has caused irregular depressions in the pavement at the three cul-de-sacs, especially Larchwood Green

Vegetation Stress

- there were no apparent signs of vegetation stress anywhere on this site; however, most property owners maintain high-quality lawns

Leachate

- no leachate seepage was observed at the site
- the conductivity of the nearby stream increased downstream from the site; the other parameters did not change significantly

Methane Gas

- four barholes placed in the site did not produce methane readings
- methane gas was not detected in any of the monitored homes on Larchwood Green, Clifton Green and Village Green
- soil testing on Lots 42 to 49 (on Kern's Road, south of Larchwood Green) by Wm. Trow Associates in 1974 showed no methane in that area of the fill (at depths of 7-10 m)

M-14127

Potential Impacts

- the distribution of waste at this site is very uncertain; a potential for gas migration into house basements exists at any location where the homes are constructed on fill material

Recommendations

1. The disposal site and future uses should be permanently identified as follows:

   (a) identify the "limits of fill" on the Official Plan,
   (b) amend the Zoning By-law for the disposal site to restrict future uses,
   (c) register a Notice on the title of the property with the Land Registrar which identifies the disposal site, the potential impacts and the restricted future uses,
   (d) prohibit future residential development on the disposal site and a limited buffer zone around this site.

2. The Part II study should be carried out to assess the potential impacts. The study should include the following:

   i) installation of multi-depth gas probes as set out in the Table below,
   ii) monitoring of gas probes for methane concentration and ground and atmospheric air pressure every two weeks from November to May, and
   iii) monitoring of methane gas in abutting buildings if the concentration in the ground outside the foundation exceeds 5% by volume.

3. The results of the monitoring program should be assessed to determine:

   i) if monitoring can be terminated, in the event of no apparent hazard,
   ii) if monitoring should be continued, in the event of an identified potential hazard,
   iii) if permanent gas controls should be installed, in the event of a hazardous impact, and
   iv) minimum buffer zones for future development around the site.

LOCATION	ESTIMATED NUMBER
- properties where soil investigations or foundation excavations verified the presence of refuse	2 per lot

Ministry of the Environment
Ontario

OLD WASTE DISPOSAL SITE STUDY

SITE NO.
7055

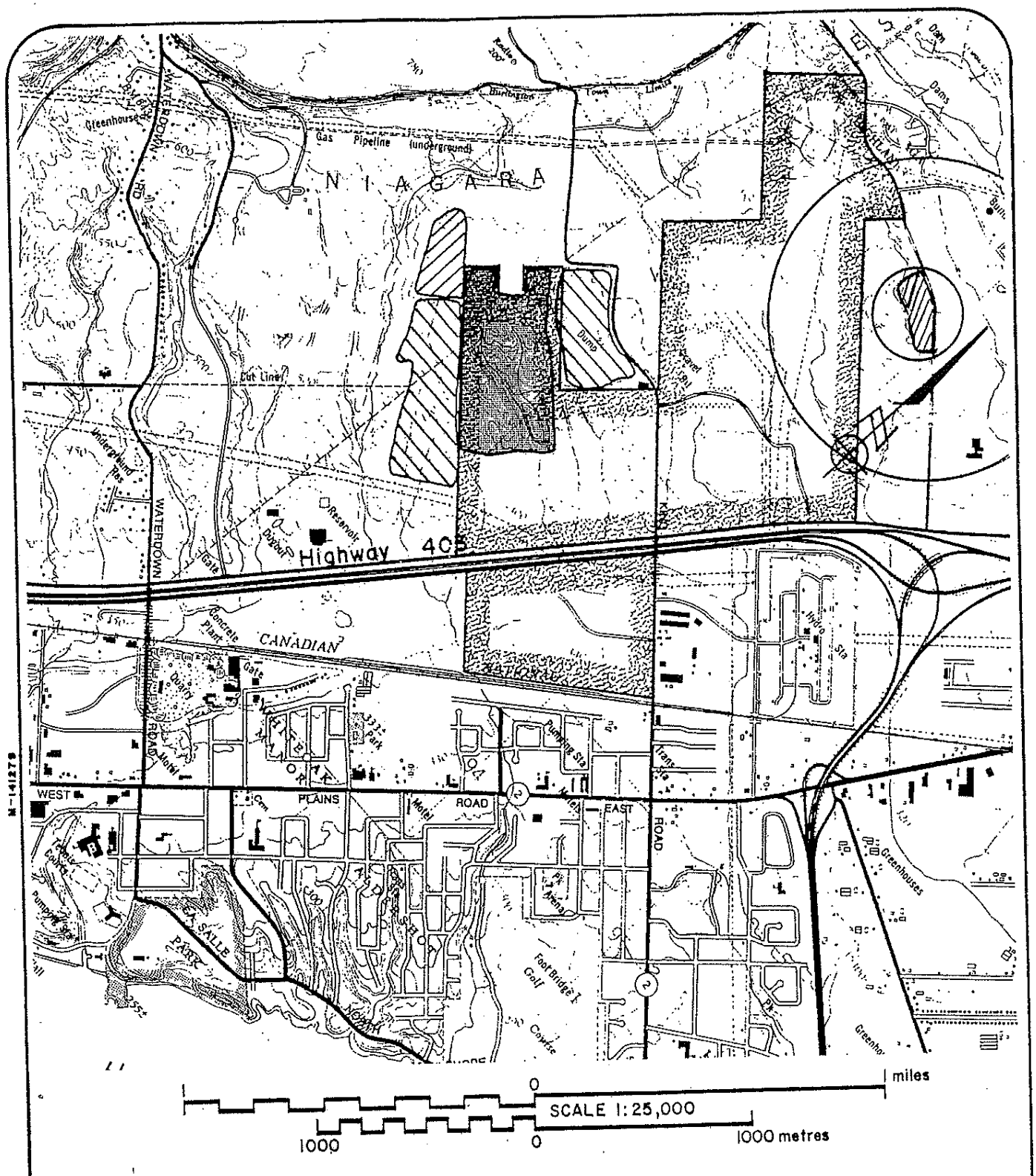


Morrison Beatty Limited

Gore & Storrie Limited

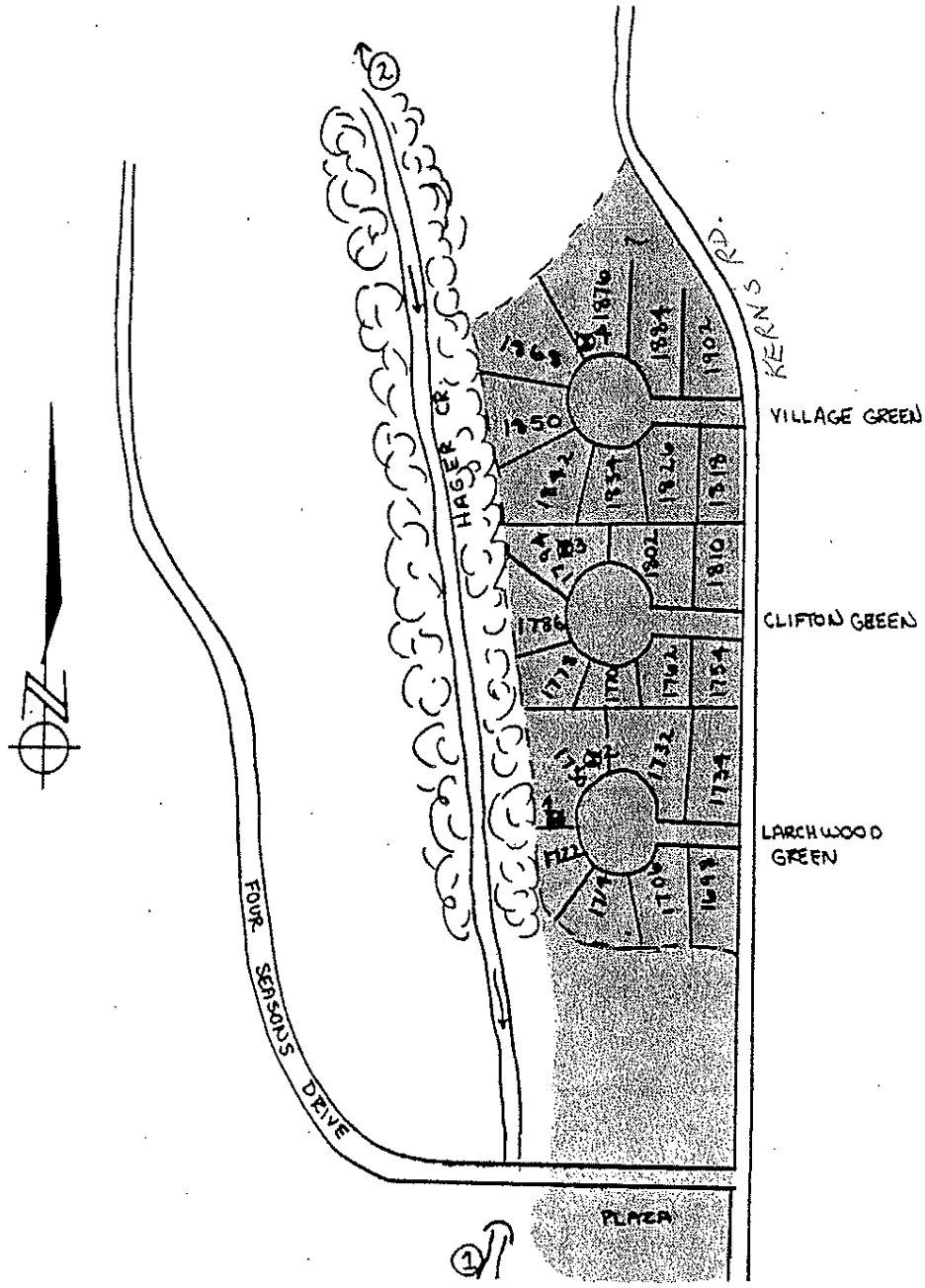
DISPOSAL AREA

SCALE 1:6670



SITE NO. 7055
KERN'S RD., BURLINGTON

Morrison Beatty Limited
Gore & Storrie Limited



M-250780

LEGEND

WASTE DISPOSAL SITE	
WATER SAMPLE LOCATIONS	①
GAS SAMPLE LOCATIONS	
- in field	⊠ 2
- in buildings	× 2

NOT TO SCALE

SITE NO. 7055
KERN'S RD., BURLINGTON

Morrison Beatty Limited
Gore & Storrie Limited

APPENDIX E

Qualifications of Watters Environmental and Key Personnel Involved with this Phase I ESA

QUALIFICATIONS OF WATTERS ENVIRONMENTAL AND KEY PERSONNEL INVOLVED WITH THIS PHASE ONE ESA

E-1 WATTERS ENVIRONMENTAL

Watters Environmental Group Inc. (Watters Environmental) offers a strategic business-focused approach in assisting our clients to proactively manage environmental issues, and to find practical solutions when environmental issues arise.

We are an employee-owned environmental consulting company that prides itself on uncompromising dedication to service quality and client satisfaction. We understand our client's needs for timeliness of response, and innovative, technically-sound solutions to their problems.

Watters Environmental brings together a team of experts in the related technical disciplines of environmental due diligence, environmental Site assessment, environmental management systems, and environmental permitting. In addition, the team offers specialty-consulting services including technical peer review, litigation support, environmental risk assessment, and forensic environmental investigations.

Our team consists of recognized leaders in their disciplines, with real-world industry experience that allows Watters Environmental to provide cost-effective solutions to our clients. Our executive team has built lasting relationships with loyal, repeat clients who have come to rely upon us for our spirit of working closely with them to resolve their issues as if they were our own. Senior staff members are some of the most experience individuals in the industry, most with 15 to 20 years of environmental consulting experience. Our employees are highly motivated and pride themselves in being innovative and client focused.

Major corporations, law firms, lending institutions, investors and municipalities routinely call upon us to assist them with complex real estate transactions, or to help manage complicated environmental issues.

E-2 BASIL WONG, M.ENG., P.ENG. – VICE PRESIDENT, TECHNICAL SERVICES

Mr. Basil Wong, M.Eng., P.Eng. is the Vice President, Technical Services with Watters Environmental Group Inc. and is a QP_{ESA}. Mr. Wong obtained his B.A.Sc. in Civil Engineering (Water Resources Option) at the University of Waterloo in 1992. In the course of obtaining this degree, he studied hydrogeology and contaminant transport in the Waterloo Earth Sciences Department (Institute for Groundwater Research). Mr. Wong furthered his studies in hydrogeology and other aspects of environmental engineering, and obtained a Master of Engineering at the University of Guelph in 1998. He has been a Professional Engineer in Ontario for over 24 years, and is also licensed in British Columbia, Alberta, Nova Scotia, and New Brunswick. Mr. Wong has over 27 years of environmental consulting experience in Phase I and II ESAs, hydrogeological assessments, soil and groundwater remediation, asbestos surveys, designated substances surveys, asbestos abatement, mould assessments, mould abatement, human health and ecological risk assessments and environmental compliance audits. Basil has conducted or managed hundreds of these projects in various land uses, such as hotels, commercial buildings, large industrial properties, residential dwellings, federally-owned properties and First Nation reserves.

E-3 KEVIN SUE, B.ENG. – PROJECT MANAGER

Kevin is a Project Manager with Watters Environmental and holds a Bachelor of Engineering from the University of Guelph. Kevin has over 11 years of consulting experience in areas of Phase I and II ESAs and provides technical support on environmental site assessments, asbestos and mould management for a variety of properties, including industrial, commercial, office, hotel and residential properties across Canada.