FISHER ENVIRONMENTAL LTD.

ENGINEERING & LABORATORY

Professional Engineers Ontario

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PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

MAYFIELD STATION DEVELOPMENT INC. PROPERTY

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Prepared for:

Mayfield Station Development Inc.

Fisher Project No. FE-P 18-9184-C

December 12, 2018

Issued to:	Mayfield Station Development Inc.
Contact:	Steven Silverberg 124 Merton St., Unit 502 Toronto, Ontario M4S 2Z2
Project Name:	Phase One Environmental Site Assessment (ESA)
Project Address:	2068 Mayfield Road, Caledon, Ontario L7C 0Y9
Project Number:	FE-P 18-9184-C
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TABLE OF CONTENTS

GLOSSARY OF ACRONYMS

ACM:	Asbestos-Containing Material
asl:	Above Sea Level
AST:	Aboveground Storage Tank
bgs:	Below Ground Surface
BTEX:	Benzene, Toluene, Ethylbenzene and Xylenes
CPC:	Contaminants of Potential Concern
CSA:	Canadian Standards Association
EC:	Electrical Conductivity
EPA:	Environmental Protection Act
ESA:	Environmental Site Assessment
FIP:	Fire Insurance Plan
MNR:	Ministry of Natural Resources
MOE:	Ministry of the Environment
MOECC:	Ministry of the Environment and Climate Change
MOL:	Ministry of Labour
ODS:	Ozone Depleting Substance
OHSA:	Occupational Health and Safety Act
Phase One ESA:	Phase One Environmental Site Assessment
Phase II ESA:	Phase Two Environmental Site Assessment
PAH:	Polycyclic Aromatic (Polyaromatic) Hydrocarbons
PCA:	Potentially Contaminating Activity
PCB:	Polychlorinated Biphenyls
pH:	potential of Hydrogen
PHC (F1-F4):	Petroleum Hydrocarbons (Fractions 1 to 4)
ppm:	Parts Per Million
RSC:	Record of Site Condition
TSSA:	Technical Safety and Standards Association
UFFI:	Urea Formaldehyde Foam Insulation
UST:	Underground Storage Tank
VOC:	Volatile Organic Compounds

1. EXECUTIVE SUMMARY

Fisher Environmental Ltd. was retained by Mayfield Station Development Inc. to conduct a Phase One Environmental Site Assessment (Phase One ESA) of the property addressed 2068 Mayfield Road, Caledon, Ontario, herein referred to as the “Site”.

The scope of work included records review, interviews, site reconnaissance, review and evaluation of information collected, preparation of tables with Current and Past Uses of the Site and Areas of Potential Environmental Concern (APECs), a Conceptual Site Model (CSM), preparation of a written report with conclusions and recommendations.

The applicable search distance for the phase one study area records review included the Site, properties located, wholly or partly, within 250 m from the nearest point on a boundary of the Site, and other neighboring properties where activities considered being Potentially Contaminating Activities (PCAs) were apparent or anticipated.

The Site is utilized for agricultural use. Historically, the Site was residentially utilized, with one dwelling located at the centre south portion. Prior to the residential use, no developed use, other than agriculture, is expected to have existed at the Site. The records review, interviews and site reconnaissance conducted as part of the present Phase One ESA have identified no PCAs within phase one study area that may contribute to APECs at the phase one property, and no further investigation is required.

Considering the findings of the current Phase One ESA, it is concluded that a Phase Two Environmental Site Assessment is not required for the phase one property.

Filing of a Record of Site Condition with the Environmental Site Registry is mandatory when there is a change (in all or in part of the property) from an industrial, commercial or community property use to residential, institutional, parkland or agricultural or other property use.

2. INTRODUCTION

Fisher Environmental Ltd. (Fisher) conducted a Phase One Environmental Site Assessment (Phase One ESA) of the property addressed 2068 Mayfield Road, Caledon, Ontario, herein referred to as the Site or Phase One Property.

Fisher received authorization to carry out the Phase One ESA from Mr. Steven Sliverberg of Mayfield Station Development Inc., whose address is 124 Merton Street, Unit 502, Toronto, Ontario, and can be contacted at (416) 306-9900. Mayfield Station Development Inc. are also the current Owner of the Site.

2.1. Site Information

2.1.1. Site Location

The Phase One Property consists of an agricultural lot located on the north side of Mayfield Road and east side of Chinguacousy Road. The Site has an area of 40.06 hectares (99 acres).

The Site in situated in a primarily agricultural area, with residential properties adjacent to the northwest property corner. The Site is bounded by agricultural and undeveloped lots to the east and north, and Mayfield Road and Chingacousy Road to the south and west, respectively. Please refer to Appendix A for Site Location Map.

2.1.2. Legal Description

The Site is legally described as Part of Lot 18, Concession 2, West of Hurontario Street, designated as Part 1 on Plan 43R-30852, in the Town of Caledon, Ontario (PIN 14252-0941).

3. SCOPE OF INVESTIGATION

3.1. Objectives

The Phase One ESA was conducted for Mayfield Station Development Inc. in support of the application of future residential use at the Site.

The purpose of the Phase One ESA was to develop a preliminary determination of the likelihood that one or more contaminants have affected any land or water on, in or under the Site, and to determine the need and provide the basis for carrying out any Phase Two Environmental Site Assessment (Phase Two ESA).

3.2. Regulatory Framework

The roles and powers of the Ontario Ministry of the Environment and Climate Change (MOECC) when dealing with contaminated sites are outlined primarily in the Environmental Protection Act (EPA) (R.S.O 1990). The MOECC has a mandate to address conditions where there is an adverse effect, or the likelihood of an adverse effect, associated with the presence or discharge of a contaminant.

The Phase One ESA was conducted in accordance with Part VII and Schedule D of the Ontario Regulation 153/04 (Records of Site Condition – Part XV.1 of the EPA), as amended as of July 1, 2011.

The amended Ontario Regulation 153/04 (Records of Site Condition – Part XV.1 of the EPA) provides roles and responsibilities to property owners and consultants to use when assessing the environmental condition of a property, when determining whether or not restoration is required, and in determining the kind of restoration needed to allow continued use or reuse of the site.

3.3. Scope of Work

A Phase One Environmental Site Assessment (Phase One ESA) is the systematic preliminary process by which an assessor seeks to determine whether a particular property is subject to actual or potential contamination. A Phase One ESA does not involve the investigative procedures of sampling, analyzing, and measuring, unless enhancements are agreed upon between the client and the assessor.

The principal components of this Phase One ESA consisted of the following:

1. A records review;
2. Interviews;
3. Site reconnaissance;
4. Review and evaluation of collected information;
5. Preparation of tables with Current and Past Uses of the Site and Areas of Potential Environmental Concern (APECs);
6. Preparation of a Conceptual Site Model (CSM);
7. Preparation of a written report; and
8. Submission of the report to the Client.

4. RECORDS REVIEW

4.1. General

The specific objectives of a records review are to obtain information on the current and past uses of, and activities at, or affecting the Site in order to determine if an Area of Potential Environmental Concern (APEC) exists at the Site and to interpret any potential environmental concern. Additionally, a review of records that relate to properties in the phase one study area, other than the Site, determines if a Potentially Contaminating Activity may be contributing to an APEC at the Site.

4.1.1. Phase One Study Area Determination

The applicable search distance for the phase one study area records review included the Site, properties located, wholly or partly, within 250 m from the nearest point on a boundary of the Site, and other neighboring properties where activities considered being potential sources of environmental contamination, were apparent or anticipated.

4.1.2. Municipal Property Use Directories for Phase One Study Area

A review of municipal directories was conducted in order to obtain a listing of previous occupants for the subject property and relevant properties located, wholly or partly, within 250 m from the boundaries of the Site. This information is useful in determining the past and/or present uses and associated environmental risks at properties within the phase one study area.

As the Site was unaddressed, no on-Site occupants were listed.

4.1.3. First Developed Use Determination for Site

The date of the first developed use of the Site was determined based on the results of the Chain of Title search and the 1946 aerial photograph, to be 1946 or earlier. At that time, the Site was residentially utilized, with one dwelling located at the centre south portion. Prior to the residential use, no developed use, other than agriculture, is expected to have existed at the Site.

4.1.4. Fire Insurance Plans

Fire Insurance Plans (FIPs) were originally created to provide insurance companies with detailed information so that they could assess insurance risks as a fire hazard.

A search was conducted at the Toronto Reference Library and the catalogue of Canadian Fire Insurance Plans 1875-1975, and no FIP was available for the phase one study or surrounding areas.

4.1.5. Chain of Title and Assessment Rolls for Site

An up-to-date title search for the Site was carried out at the time of this study by Mr. Dominic Bertucci of Domson's Title Search Inc., and reviewed by Fisher. A review of the Land Registry document indicated the chronology of ownership for all four (4) on-Site PINs, which have been individually summarized as part of Table 2, as follows:

TABLE 2

Reg. Date (dd/mm/year)	Parties From	Parties To
2068 Mayfield Road - PIN 14252-0941(LT)		
10/01/1828	Crown	David Craig
11/03/1848	David Craig	James Drinkwater
24/07/1864	James Drinkwater	William Dunn Dolson
08/09/1870	William Dunn Dolson	John Dolson
05/07/1874	John Dolson	Jonathan Rice
27/12/1890	Jonathan Rice	Isabella Craig
30/05/1918	Isabella Craig	William & John Craig
11/07/1930	William & John Craig	James R. & John S. Craig
13/09/1960	James R. & John S. Craig	James R. Craig
15/12/1960	James R. Craig	Benjamin & Charles Groat
30/04/1969	Benjamin & Charles Groat	Leading Investments Ltd.
07/10/1969	Leading Investments Ltd.	Isbigger Developments Ltd. (foreclosure)
01/09/1972	Isbigger Developments Ltd. (foreclosure)	Leading Investments Ltd.
11/08/1987	Leading Investments Ltd.	Minna Daniels
05/06/2001	Minna Daniels	Esther B.L., Kenneth J., Rose & Irving Daniels
16/01/2003	Esther B.L., Kenneth J., Rose & Irving Daniels	Walness Devbelopments Inc. [sic]
13/06/2005	Walness Devbelopments Inc.	Mayfield Caledon Investments Inc.
05/07/2010	Mayfield Caledon Investments Inc.	Mayfield Station Developments Inc.

N/A: Not Available.

Refer to copies of the title search reports attached in Appendix A.

4.1.6. Previous Environmental Reports for Site

Four (4) previous reports were reviewed by Fisher Environmental and were used as a source of background information.

TABLE 3: Previous Reports

Report Title	Phase I Environmental Assessment, Part of West Half of Lot 18, Concession 2, Caledon, Ontario
Prepared By/For	TRY Environmental services Inc., for Laurier Group
Date	May 19, 2010
Scope and Conclusions	
The report was conducted for the east-centre on-Site portion of the property. The subject property was agricultural land located on the north side of Mayfield Road, and comprised of agricultural land. Based on the information gathered and observations made during this investigation, the report revealed no evidence of potential environmental contamination associated with on-site activities.	
Report Title	Phase One Environmental Site Assessment, Part of Lot 18, Concession 2 (W.H.S.), Caledon, ON
Prepared By/For	Fisher Environmental Ltd. for Cedar City Developments
Date	April 3, 2017
Scope and Conclusions	
The scope of work included records review, interviews, site reconnaissance, review and evaluation of information collected, preparation of tables with Current and Past Uses of the Site and Areas of Potential Environmental Concern (APECs), a Conceptual Site Model (CSM), preparation of a written report with conclusions and recommendations. This Phase One ESA (2017) was for a larger parcel of land which included the current Phase One Property. As part of the current Phase One ESA, Fisher has relied on information gleaned from this investigation, including records review, interviews, and site reconnaissance, to evaluate the presence of an APEC on-Site. The investigation identified five (5) APECs, including one (1) APEC located within the current Phase One Property area, as follows: *"APEC E – The APEC constitutes an area that historically contained a building based on aerial photographs. The building was decommissioning between 1965 and 2009. No records associated with the building's decommissioning were available for review. It is anticipated, based on the current understanding of surficial geology and hydrogeology at the location of the APEC, that groundwater will not be impacted by contaminants within fill materials unless the fill comes in direct contact with groundwater to facilitate leaching of contaminants, which is not expected to be the case."* A Phase Two ESA was recommended to determine impacts within the aforementioned APEC.	

Report Title	Phase II Environmental Site Assessment, Part of Lot 18, Concession 2 (W.H.S.), Caledon, ON
Prepared By/For	Fisher Environmental Ltd. for Cedar City Developments
Date	May 3, 2017
Scope and Conclusions	
This Phase II ESA was for a larger parcel of land which included the current Phase One Property. As part of the current Phase One ESA, Fisher has relied on information gleaned from this investigation, including records review, interviews, and site reconnaissance, to evaluate the presence of an APEC on-Site. The subsurface soil and groundwater investigation was carried out between March 1 and 20, 2017. At the current Phase One Property, two (2) boreholes were advanced from assess soil condition at the area of the former residential building, associated with the aforementioned APEC E. No significant importation of fill materials was encountered during the intrusive investigation. It was concluded that no evidence of soil contamination had occurred at the selected sampling locations. No further investigation is recommended at the time.	
Report Title	Results of Chemical Analyses of Topsoil/Soil Samples - Proposed Residential Development, Mayfield West Phase 2, Part of Lot 18, Con. 2
Prepared By/For	Soil Engineers Ltd. for Cedar City Developments
Date	January 18, 2018
Scope and Conclusions	
The soil investigation included testing surface soil (0-0.3 m depth) for organochlorine pesticides which may have been utilized during historical agricultural operations. The results of analysis were compared to the MECP Table 1: Full Depth Background Site Condition Standards. No exceedances of Table 1 SCS were found. As Table 1 SCS are supposed to represent background conditions, i.e. pre-exposure condition of soil to anthropogenic contaminants, the subject letter report provided confirmation that no organochlorine pesticides were utilized at the Site.	

4.2. Environmental Source Information

Reasonable ascertainable environmental information associated with the Site and other properties within the phase one study area was collected by EcoLog ERIS Ltd., and provided to Fisher in the form of an “ERIS Report”.

A listing of all searchable databases, with descriptions, is provided at the end of the ERIS Report. In addition, other environmental source information, including available natural heritage

information for the Site and surrounding areas, was researched by Fisher. Significant findings, based on property location by address are provided in Table 4.

TABLE 4: Environmental Source Information Search

Address	Description of Findings
Site	
Not addressed	No findings relevant to Site area were revealed.
Surrounding Properties	
2069 Mayfield Road	The property, located approximately 110 m west of the Site, was listed under Hydro One Inc. for a transformer oil spill in 2006, of 10 L of oil to land. Environmental impact was not anticipated.
Natural Heritage Information	
According to the MNRF map, no provincial or federal conservation or natural heritage area was located in the phase one study area. A tributary of Etobicoke Creek is located approximately 600 m north of the north Site boundary. According to the Credit Valley Watershed map, the Site falls within the Fletcher's Creek Subwatershed of the Credit River Watershed System. According to the Credit Valley Source Protection Area map, maintained by Credit Valley Conservation Authority, no portion of the Site or phase one study area falls within a wellhead drawing zone.	

Refer to Appendix B for ERIS Report, MNRF Map, Credit Valley Source Protection Area Map and Credit Valley Watershed Map.

4.3. Physical Setting Sources

4.3.1. Aerial Photographs

The earliest aerial photograph available for the phase one study area was dated 1946, and a digital copy was obtained from the National Air Photo Library, along with a copy of the 1965 aerial photograph. Aerial photographs dated 2009 and 2016 were obtained from Google Earth to corroborate any changes occurred within the phase one study area with information gathered from other records review. The selected photographs were examined stereoscopically to assess site conditions. Description of the photographs is provided as Table 5 on the following page.

TABLE 5: Description of Aerial Photographs

Year	Description	
	Site	Surrounding Area
1946	The Site was utilized primarily for agricultural activities. A residential type dwelling was noted at the Site.	Surrounding area was utilized primarily for agricultural activities. Residential dwellings were noted adjacent to the northwest of the Site.

Year	Description	
	Site	Surrounding Area
	No PCA(s) was noted at the Site in the aerial photograph.	No PCA(s) was noted at surrounding properties in the aerial photograph.
1965	No on-Site changes were noted from the 1946 aerial photograph. No PCA(s) was noted at the Site in the aerial photograph.	No changes were noted at surrounding properties from the 1946 aerial photograph. No PCA(s) was noted at surrounding properties in the aerial photograph.
2009	The residential type dwelling was demolished, and the Site was vacant at the time. No PCA(s) was noted at the Site in the aerial photograph.	Surrounding area remained primarily agricultural. No PCA(s) was noted at surrounding properties in the aerial photograph.
2016	No on-Site changes were noted from the 2009 aerial photograph. No PCA(s) was noted at the Site in the aerial photograph.	No changes were noted at surrounding properties from the 2009 aerial photograph. No PCA(s) was noted at surrounding properties in the aerial photograph.

4.3.2. Topography, Geology and Hydrogeology of Phase One Study Area

Regional Topographical, Geological and Hydrogeological Conditions are presented in the following table:

TABLE 6: Topographical, Geological and Hydrogeological Sources

Topography and Drainage	
Source:	Ministry of Natural Resources, Google Earth
Phase One Study Area Conditions:	Grade elevation along Chinguacousy Road slopes also southwards from 260 m asl to 252 m asl, from 250 m north and south from the nearest Site boundaries. Grade elevation along Mayfield Road, from 250 m east and west from the nearest Site boundaries, are 257 m asl and 256 m asl, respectively, and do not exhibit sloping. Generally, the phase one study area slopes in a southeast direction, towards tributaries within the Credit River watershed.
Site Conditions:	Site topography is very flat given the agricultural use, with the on-Site agricultural plots sloping mainly south. Storm water is drained via infiltration within the agricultural area.

	No topographic markers e.g. mounds suggestive of fill material deposits were noted.
Overburden Geology	
Source:	OGS Surficial Geology of Southern Ontario Map, MOECC Well Records
Phase One Study Area Conditions:	Till: Clay to silt-textured till (derived from glaciolacustrine deposits or shale)
Site Conditions:	Soils stratigraphy descriptions obtained from a review of MOECC Well Records available for the Site indicated that the overburden consisted of brown/red, changing to grey, clay, with occasional sand and silty sand seams.
Bedrock Geology	
Source:	OGS Bedrock Geology of Ontario Map, MOECC Well Records
Phase One Study Area Conditions:	Queenston Formation: Shale, limestone, dolostone, siltstone Bedrock descriptions obtained from a review of MOECC Well Records available for the phase one study area, and assessed for accuracy by comparison with regional bedrock information, indicated that blue shale was encountered from 19.2 m below grade.
Site Conditions:	It is expected that bedrock conditions underlying the Site approach regional stratigraphic conditions.
Hydrogeology	
Source:	Freeze and Cherry 1979 and Holtz and Kovacs 1981
Phase One Study Area Conditions:	The surficial deposits within the study area consist mainly of clay, having a typical range of hydraulic conductivity of 10^{-7} – 10^{-9} cm/sec. Coarse seams within the overburden (sand/gravel) however, would exponentially increase the conductivity within the aquifer zone.
Site Conditions:	It is expected that hydrogeological conditions underlying the Site approach regional conditions. Approximate depth to water table is between 1.5 m bgs and 4 m bgs.
Nearest Open Water Body:	A tributary of Etobicoke Creek is located approximately 600 m north of the Site.
Inferred GW Flow Direction:	Groundwater flow direction is expected to be southeast, based on regional topography.

Regional Topographical and Geological Maps that include the phase one study area are attached in Appendix C.

4.3.3. Fill Materials

The grade surface at the Site was generally flat and primarily used for agriculture. Imported fill materials are likely present at the locations of the former on-Site residential dwellings.

4.3.4. Water Bodies and Areas of Natural Significance

No part of the phase one study area is located within or in the vicinity of an area of natural significance.

According to the Wellhead Protection Areas map, the zone of influence of the nearest wellhead to the Site was approximately 5 km northeast from the nearest Site boundary. The Site falls within the Credit Valley Watershed (Sub-zone 5: Fletchers Creek). A creek, which is a tributary of Etobicoke Creek, was the nearest water body to the Site, located approximately 600 m north of the nearest Site boundary.

4.3.5. Well Records

For the purpose of the previous Phase One ESA (2017), Fisher researched MOECC's Well Records database for all historic well listings within the phase one study area. A copy of the well records print-out is included in Appendix C.

The search returned results indicating the presence of thirteen (13) water wells constructed between 1964 and 2007, within a 250 to 500 m around the Site, with pertinent geological and hydrogeological information. The findings have been summarized with Table 7, as follows.

TABLE 7: MOECC Water Well Records within Phase One Study Area

Item No.	MOECC Well ID	Location	Water Level	Well Depth	Water Use	Overburden Description	Bedrock Description
1.	4905251	On-Site	8'	38'	Domestic	Clay, brown/red, 0-36'	Shale, red, 36'-38'
2.	4905550	On-Site	13'	79'	Domestic	Clay, brown/blue/ grey, 0-79'	Not encountered
3.	7265667	On-Site	NP	35'	Observation	Silty clay to clayey silt, brown, 0-30'; sand, grey, 30-35'	Not encountered

Item No.	MOECC Well ID	Location	Water Level	Well Depth	Water Use	Overburden Description	Bedrock Description
4.	4907821	On-Site	5’	22’	Domestic	Sand, brown, 1-20’; clay, grey, 20-22’	Not encountered
5.	4905551	Off-Site	12’	67’	Domestic	Clay, brown/grey, 1-67’	Not encountered
6.	4907105	Off-Site	20’	100’	Domestic	Clay, brown/grey, 0-90’; sand, grey, 90-100’	Not encountered
7.	4908331	Off-Site	18’	53’	Domestic	Clay, brown, 2-24’; clay/sand, grey, 24-36’; sand/gravel, red, 36-53’	Not encountered
8.	4905535	Off-Site	5’	86’	Domestic	Clay, brown, 0-28’	Shale, red, 28’-86’
9.	4901747	Off-Site	NP	NP	NP	Clay, 1-20’; Sand w/ gravel, 20-34’; Silt w/ fine sand, 34-49’; fine sand, 49-54’, clay/sand, 54-103’; clay, red, 103-152’	Shale, 152’-160’
10.	7052303	Off-Site	NP	20’	Observation	Silt, 0-20’	Not encountered
11.	4904660		4’	80’	Domestic	Sand, grey/ brown, 0-63’	Shale, blue, 63’-80’
12.	4907003	Off-Site	11’	65’	Domestic	Clay, brown/grey, 0-60’; sand and gravel, 60-62’, clay, grey, 62-65’	Not encountered
13.	4905741	Off-Site	10’	60’	Domestic	Clay, brown/grey, 1-50’; sand/stones, grey, 50-60’	Not encountered

NP: Not Provided

4.3.6. Site Operating Records

Steven Silverberg of Mayfield Station Development Inc., representative of the current property Owners, indicated that no site operating records are available for review.

4.4. Enhanced Investigation Property Due to Previous Use

Based on a review of records regarding historical property use, it is concluded that the Site is not an enhanced investigation property.

5. INTERVIEWS

Interviews with persons relevant to the objectives of the phase one environmental site assessment are conducted to obtain information determining if an area of potential environmental concern exists at the Site, and to identify details of potentially contaminating activities or potential contaminant pathways in, on or under the Site.

5.1. Methodology

Interviews with persons relevant to the objectives of the phase one environmental site assessment are conducted to obtain information determining if an area of potential environmental concern exists at the Site, and to identify details of potentially contaminating activities or potential contaminant pathways in, on or under the Site.

5.2. Methodology

Fisher Environmental's Standard Questionnaire was used to conduct an interview with the current Owner of the Site, as well as the farmer operating the Site, regarding the current and historic Site condition and activities. Both parties were interviewed via telephone.

5.3. Limitations

All interview participants answered the asked questions to the best of their knowledge.

5.4. Interview Participants

a. Property Owners' Representative: Mr. Steven Silverberg, President, Mayfield Station Development Inc.

b. Property Farming Tenant: Mr. Bryan Cook (co-farmer at Site with father, Mr Lloyd Cook)

Written summary of each interview, with the date, time, duration, method and place of the interview, name of interviewed person and reason for person selection, key questions and answers for each of the topics of the interview, and comparison of info from interviews to other data sources to assess validity of interview info, are included in Documentation of Interviews forms in Appendix B.

6. SITE RECONNAISSANCE

A visit at the Site, and at remaining publicly accessible phase one study area, was conducted by Mr. Arij Alam of Fisher Environmental Ltd. on October 30, 2018. The Site conditions and observations were compared to those encountered and photographed as part of the previous Phase One ESA (2017).

6.1. General Requirements

The objectives of the site reconnaissance are to determine if Areas of Potential Environmental Concern exist through observations about current and past uses and Potentially Contaminating Activity on, in or under the Site, and where practicable, current and past uses and Potentially Contaminating Activities at the remaining phase one study area.

Additionally, the objective of the site reconnaissance is to identify details of potential contaminant transport pathways on, in or under the Site and contaminants of potential concern.

6.1.1. Methodology

TABLE 8: Site Reconnaissance Methodology

Date and Time of Investigation:	October 30, 2018, 10:30 a.m.
Weather Conditions:	Cloudy, 7˚C
Duration of the Investigation:	2.5 hours
Operational Industrial or Commercial Facility:	No
Enhanced Investigation Property:	No (based on current property use)
Observation Methods:	Visual assessment of the Site's features. Visual confirmation of property use within the phase one study area
Name and Qualifications of Assessor:	Arij Alam, MEnvSc

6.1.2. Limitations

Fisher Environmental was permitted access to all areas of the Site.

6.1.3. Current Property Use and Activities

No current Site operations, representing Potentially Contaminating Activities, were identified at the Site at the time of the site visit. No changes were noted at the Site from the previous Phase One ESA (2017).

6.2. Written Description of Specific Observations at Site

TABLE 9: Summary of Property Description

Property Area:	40.06 hectares (99 acres)
Utility Providers:	Not present
Number of Buildings & Area:	No current on-Site buildings
Number of Levels:	N/A
Basement:	N/A
Year Built:	N/A
General Construction:	N/A
Building Use:	N/A

6.2.1. Exterior Aboveground and Underground Structures

No exterior structures were noted at the time of Site visit.

6.2.2. Underground Utility and Service Corridors

No current active underground utilities were located on-Site at the time of Site visit.

6.2.3. Potable Water Supply

The Site has no water service. Properties within the phase one study area rely on water obtained from private and municipal water wells, as a source of drinking water.

6.2.4. Wells, Pits, Lagoons, Watercourses, Ditches or Standing Water

No evidence of water wells, ditches, pits, lagoons or standing water was identified on the Site.

6.2.5. Stained Materials, Stressed Vegetation and Fill Materials

No stained surficial materials or stressed vegetation were observed at the Site.

No evidence of imported fill materials was noted.

6.2.6. Interior of Buildings or Structures

No buildings or structures were located on-Site.

6.2.7. Enhanced Investigation Property Due to Current Use

Based on interviews and site reconnaissance conducted as part of the present Phase One ESA, it is concluded that the current operations conducted at the Site are not consistent with those that define an enhanced investigation property.

6.3. Written Description of Investigation of Phase One Study Area, other than Site

The phase one study area, defined as an area that includes all properties that the wholly or partially within a 250 m distance from the nearest Site boundary, was visually inspected during the site reconnaissance.

Based on visual evidence, areas surrounding the Site to the north and east and west, were primarily agricultural, with residential dwellings northwest of the site. All areas south of Mayfield Road within the phase one study area were either developed, or under-construction at the time of the visit, with residential subdivisions.

No potentially contaminating activities (PCAs) were encountered at neighbouring properties during Site Reconnaissance.

6.4. Findings relevant to the existence of Areas of Potential Environmental Concern on, in or under Site

No APECs were identified at the Site.

7. REVIEW AND EVALUATION OF INFORMATION

The review of information is conducted to evaluate and interpret the data obtained from the records review, the interviews and the site reconnaissance, in order to achieve the general and specific objectives of the Phase One ESA.

Identification of current and past uses of the Site, existence and location of any Areas of Potential Environmental Concern (APECs) on, in or under the Site and description of any Potentially Contaminating Activity (PCA) at the Site and within the phase one study area, that may be contributing to an APEC at the Site, is presented in the following sections.

7.1. Current and Past Uses of the Site

TABLE 10

Year	Name of Owners	Description of Property Use	Property Use	Other Observations
2068 Mayfield Road - PIN 14252-0941(LT)				
Before 1828	Crown	Undeveloped or agricultural	Agricultural Or Other	No information was available for this period in any record other than the Title Search. It is expected based on available information that the lot maintained an agricultural use for the duration of this period.
1828	David Craig	Undeveloped or agricultural	Agricultural Or Other	
1848	James Drinkwater	Undeveloped or agricultural	Agricultural Or Other	
1864	William Dunn Dolson	Undeveloped or agricultural	Agricultural Or Other	
1870	John Dolson	Undeveloped or agricultural	Agricultural Or Other	
1874	Jonathan Rice	Undeveloped or agricultural	Agricultural Or Other	
1890	Isabella Craig	Undeveloped or agricultural	Agricultural Or Other	
1918	William & John Craig	Undeveloped or agricultural	Agricultural Or Other	
1930	James R. & John S. Craig	Agricultural and residential	Agricultural Or Other	As observed in the 1946 and 1965 aerial photographs, a small portion of the lot was developed with a residential dwelling along Mayfield Road.
1960	James R. Craig	Agricultural and residential	Agricultural Or Other	
1960	Benjamin & Charles Groat	Agricultural and residential	Agricultural Or Other	
1969	Leading Investments Ltd.	Agricultural	Agricultural Or Other	As observed in the 2009 aerial photograph, the residential dwelling was demolished at the time.
1969	Isbigger Developments Ltd. (foreclosure)	Agricultural	Agricultural Or Other	
1972	Leading Investments Ltd.	Agricultural	Agricultural Or Other	

Year	Name of Owners	Description of Property Use	Property Use	Other Observations
1987	Minna Daniels	Agricultural	Agricultural Or Other	
2001	Esther B.L., Kenneth J., Rose & Irving Daniels	Agricultural	Agricultural Or Other	
2003	Walness Devbelopments Inc. [sic]	Agricultural	Agricultural Or Other	
2005	Mayfield Caledon Investments Inc.	Agricultural	Agricultural Or Other	
2010	Mayfield Station Developments Inc. (current owner)	Agricultural	Agricultural Or Other	

7.2. Potentially Contaminating Activities at the Site

Based on the interviews conducted with the property owner and the current farmer operating on-site, Organochlorine Pesticides were not applied historically or currently with respect to farming operations. In addition, as part of the records review, no listings were identified for the Site and neighbouring properties in the Ontario Pesticide Register. However, the current farmer operating on-site, Mr. Bryan Cook, revealed that Roundup (glycophosphate) agricultural herbicide is utilized as required during his farming seasons. Glycophosphate is not a prescribed contaminant under Ontario Regulation 153/04 as amended, Part XV.1 of the Environmental Protection Act thus no standard is available. The application of Glycophosphate is not likely to have an adverse effect or interfere with the current agricultural property use and proposed residential property use. In addition, a report prepared by Soil Engineers Ltd. (Ref. No. 1708-E057, dated January 8, 2018) was reviewed as part of the Phase One ESA and concluded that no exceedances of the applicable Site Condition Standards (SCS) from the analysis of Organochlorine Pesticides in the topsoil was identified. Based on the information above, PCA 40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications was not identified for the Site

A former residential dwelling was located at the Phase One Property between 1930 and 1969. The footprint As part of an existing Phase II ESA works performed at the Phase One Property in 2017, two (2) boreholes were advanced at the location of the former on-Site residential dwelling to evaluate the potential historical importation of fill materials of unknown quality (PCA-30) associated with property development and demolition activities. Neither evidence of PCA-30 nor Contaminants of Potential Concern (CPCs) associated with PCA-30 were encountered.

7.3. Potentially Contaminating Activities at the Remaining Phase One Study Area that may contribute to an APEC at the Site

No properties off-Site within 250 m of the nearest Site boundary were noted with PCAs that may contribute to an APEC at the Site.

7.4. Areas of Potential Environmental Concern

No APECs were determined at the Phase One Property.

7.5. Phase One Conceptual Site Model

This Phase One Conceptual Site Model (CSM), as part of a Phase One Environmental Site Assessment (ESA), synthesizes relevant information gathered as part of records review, interviews and reconnaissance pertaining to the Phase One and RSC Property (the Site) and properties which constitute the phase one study area; associates the Site features and geological/hydrogeological conditions in the area with on-Site and/or off-Site Potentially Contaminating Activities (PCAs); and, identifies transport pathways and Contaminants of Potential Concern (CPCs) within phase one study area that may contribute to one or more Areas of Potential Environmental Concern (APECs) on, in or under the Site.

The graphic form of the Phase One CSM includes:

- A Site Plan of the Phase One Study Area (**Fig. 1**) that shows (where present) existing buildings and surface and sub-surface structures, water bodies and areas of natural significance located in whole or in part on the phase one study area, roads, uses of properties adjacent to the Phase One Property, areas where off-site PCAs have occurred, including tanks in such areas, and off-site transport pathways.
- A Site Plan of the Phase One and RSC Property (**Fig. 2**) that, in addition to Fig. 1, presents (where present) APECs, on-site PCAs and tanks in such areas, transport pathways and inferred groundwater flow direction.

The narrative form of the Phase One CSM presented below is prepared on the assumption that the Site will adopt a less sensitive Residential/Parkland/Institutional use in the future, from a more sensitive use of Agricultural or Other.

TABLE 11: Phase One CSM Narrative

Phase One & RSC Property Description:
The Phase One and RSC Property, addressed 2068 Mayfield Road, consists of an agricultural lot located on the northeast corner of Chinguacousy Road and Mayfield Road, legally described as Part of Lot 18, Concession 2, West of Hurontario Street, designated as Part 1 on Plan 43R-30852, in the Town of Caledon, Ontario (PIN 14252-0941). The Site has an area of 40.06 hectares (99 acres) and is currently owned by Mayfield Station Developments Inc. UTM coordinates for the centroid of the Site are 17T 592957.4 E 4841266.9 N. As part of the Phase One ESA, agricultural and residential use was historically identified. Based on the interviews conducted with the property owner and the current farmer operating on-site, Organochlorine Pesticides were not applied historically or currently with respect to farming operations. In addition, as part of the records review, no listings were identified for the Site and neighbouring properties in the Ontario Pesticide Register. However, the current farmer operating on-site, Mr. Bryan Cook, revealed that Roundup (glycophosphate) agricultural herbicide is utilized as required during his farming seasons. Glycophosphate is not a prescribed contaminant under Ontario Regulation 153/04 as amended, Part XV.1 of the Environmental Protection Act thus no standard is available. The application of Glycophosphate is not likely to have an adverse effect or interfere with the current agricultural property use and proposed residential property use. In addition, a report prepared by Soil Engineers Ltd. (Ref. No. 1708-E057, dated January 8, 2018) was reviewed as part of the Phase One ESA and concluded that no exceedances of the applicable Site Condition Standards (SCS) from the analysis of Organochlorine Pesticides in the topsoil was identified. Based on the information above, PCA 40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications was not identified for the Site A former residential dwelling was located at the Phase One Property between 1930 and 1969. The footprint As part of an existing Phase II ESA works performed at the Phase One Property in 2017, two (2) boreholes were advanced at the location of the former on-Site residential dwelling to evaluate the potential historical importation of fill materials of unknown quality (PCA-30) associated with property development and demolition activities. Neither evidence of PCA-30 nor Contaminants of Potential Concern (CPCs) associated with PCA-30 were encountered. No drinking water wells are located at the Phase One Property. No water bodies or areas of natural significance are located within the phase one study area. As part of the Phase One ESA, no PCAs were identified at the Phase One Property or within the phase one study area.
Potentially Contaminating Activities on-Site or off-Site Affecting the Phase One Property
None identified.

Contaminants of Potential Concern

None identified.

Underground Utilities/Transport Pathways Affecting Contaminant Transport & Distribution

No underground utilities or subsurface structures were present on-Site. Off-Site underground utilities were present along the south boundary of the Site (T-1).

No underground utilities or transport pathways were identified that may assist contaminant transport to the Site, or distribution within the Site area, from on-Site and off-Site PCAs.

Geological & Hydrogeological Information Description & Assessment:

Site topography is very flat given the agricultural use, with the Site plots sloping gently in the southeast direction towards Mayfield Road. Surface elevation at the centre point of the Site is approximately 258 m above sea level (asl).

Based on the Ontario Geological Survey's (OGS) Surficial Geology of Southern Ontario and Bedrock Geology of Ontario maps, surficial geology was classified as Till: Clay to silt-textured till (derived from glaciolacustrine deposits or shale). Boreholes advanced at the Site in 2017 encountered native soil consisting of brown silty sand till. Bedrock is expected to be present between 6 m and 7 m below ground surface (bgs), and consisting of red shale of the Queenston Formation.

Groundwater flow direction was inferred to be southeast, based on regional topography. The regional hydrogeological conditions indicate a typical range of hydraulic conductivity for the encountered overburden soils of 10^{-4} – 10^{-6} cm/sec.

Based on the inferred geology and hydrogeology of the Site, CPCs from up-gradient areas (north and west) within the phase one study area may migrate on-Site via groundwater flow.

Uncertainty or Absence of Information:

Limited Site specific information on soil and groundwater conditions was available for review.

This Phase One Conceptual Site Model represents current understanding of the Site in terms of the relevant potentially contaminating sources, subsurface materials and processes, serves as the basis for further site characterization, and will ultimately support the evaluation of various remedial alternatives, if necessary. Because of the limited intrusive and/or non-intrusive investigations data on the phase one study area, the site conceptual model can only provide an approximation to the real world. At the early stages of site conceptual model development, it is possible that several realizations will be tenable however, as more monitoring and other data become available, the subsequent site conceptual models should provide a more detailed picture of fluid flow and material transport, and transformation processes.

8. CONCLUSIONS

8.1. Requirement for Phase Two Environmental Site Assessment

Considering the findings of the current Phase One ESA, it is concluded that a Phase Two Environmental Site Assessment is not required for the phase one property. The rationale for this conclusion is presented in the following section.

8.2. Record of Site Condition Based on Phase One ESA Alone

The records review, interviews and site reconnaissance conducted as part of the present Phase One ESA have identified no PCAs within phase one study area that may contribute to APECs at the phase one property, and no further investigation is required.

8.3. Signatures

Fisher Environmental Ltd. carried out the present Phase One Environmental Site Assessment at the request of Mayfield Station Development Inc., and by signing below the qualified person confirms the findings and conclusions of this report.

Respectfully submitted,

David Fisher, P. Eng., C. Chem.

Principal

Fisher Environmental Ltd.

9. REFERENCES

- *Ontario Regulation 153/04 (Records of Site Condition – Part XV.1 of the EPA), Part VII and Schedule D of the Amended Regulation;*
- *Occupational Health and Safety Act (OHSA), R.S.O. 1990, Ministry of Labour;*
- *Catalogue of Canadian Fire Insurance Plans 1875-1975;*
- *Surficial Geology of Southern Ontario, Ontario Geological Survey (OGS);*
- *Bedrock Geology of Ontario, OGS;*
- *Google Earth;*
- *Make a Topographic Map, Ministry of Natural Resources and Forestry (MNRF);*
- *Natural Heritage Areas, MNRF;*
- *(Figure 13) Wellhead Protection Areas in Peel Region (October 2014), ArcGIS, Region of Peel;*
- *Map: Well Records, Ontario.ca, MOECC;*
- *ERIS Report, Ecolog ERIS Ltd..*

10. QUALIFICATIONS OF THE ASSESSOR

The records review and Site visit for this assessment were conducted by Mr. Arij Alam, who has been trained and has over five years experience in conducting Phase One ESAs in accordance with the CSA Standard. Mr. Alam has conducted numerous Phase One ESAs for commercial/industrial/residential clients and government agencies and is routinely engaged in this field.

As a Qualified Person who conducts and supervises Phase One ESAs, Mr. David Fisher, president of Fisher Environmental Ltd., is a senior Managerial and Environmental Engineering Specialist with over 30 years of progressive, innovative experience in the Petrochemical and Environmental Engineering Industry. Mr. Fisher is responsible for the development and management of a progressive environmental consulting engineering company specializing in environmental site assessments and remediation, geotechnical and hydrogeological investigations, tank removals, PCB waste treatment, land reclamation, recycling, hazardous waste disposal, and associated laboratory analytical practices.

Fisher Environmental Ltd. has been established as a team of engineers and consultants since 1989, and continues to develop a strong, wide client base. The company is staffed with personnel holding graduate or postgraduate qualifications at the Markham headquarters, as well as specialist associates offering a broad range of expertise and knowledge in environmental consulting. With a background in the petroleum industry, extensive experience has been gained in the prevention and cleanup of contamination in air, water and soil.

11. LIMITATIONS

This report was prepared for use by Mayfield Station Development Inc., and is based on the work as described in the Scope of Work. The conclusions presented in this report reflect existing Site conditions within the scope of this assignment.

Some information presented in this report was provided through existing documents and interviews. Although attempts were made, whenever possible, to consult alternative sources of information, in certain cases Fisher Environmental Ltd. has been required to assume that the information provided is accurate. The findings and conclusions presented in this report are based predominately on interpretation of data obtained from visual observations, records review at publicly accessible areas, as conducted. Considering the uncertainties or absence of information noted in the report, there is no warranty, expressed or implied, by Fisher Environmental that this assessment has identified all Potential Contaminating Activities or Contaminants of Potential Concern at the phase one study area, or that the subject site is free from any and all contamination from past or current practices other than that noted, nor that all issues of environmental compliance have been addressed.

No investigation method can eliminate the possibility of obtaining partially imprecise or incomplete information; it can only reduce the possibility to an acceptable level. Professional judgment was exercised in gathering and analyzing the information obtained and the formulation of the conclusions and recommendations. Like all professional persons rendering advice, we do not act as absolute insurers of the conclusions reached, but commit ourselves to care and competence in reaching those conclusions. No warranty, whether expressed or implied, is included or intended in this report.

The scope of services performed may not be appropriate for the purposes of any other users. This report should not be used in contexts other than pertaining to the evaluation of the property at the current time. Written authorization must be obtained from Fisher Environmental Ltd. prior to use by any other parties, or any future use of this document or its findings, conclusions, or recommendations represented herein. Any use that a third party makes of this report, or any reliance on or decisions made on the basis of it, are the responsibility of the third party. Fisher Environmental Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

APPENDIX A – SITE LOCATION MAP AND PLAN OF SURVEY

MINISTRY OF NATURAL RESOURCES AND FORESTRY

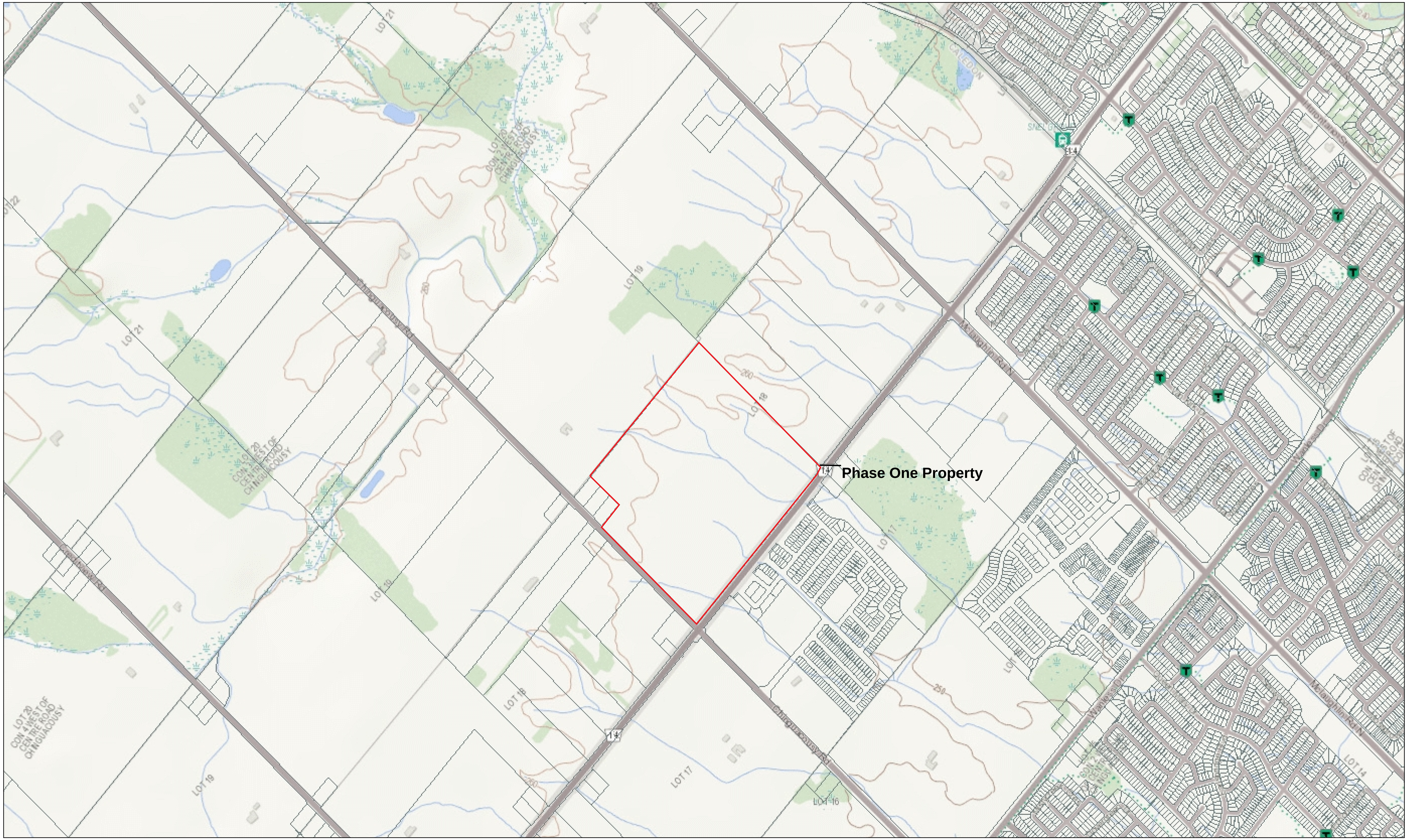
Ontario

Make a Topographic Map

Site Location Map

Notes:

FISHER ENVIRONMENTAL LTD.



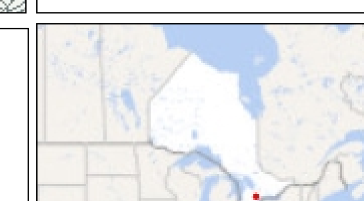
Legend

- Building as Symbol
- Building to Scale
- Airport
- Heliport \ Hospital Heliport
- Seaplane Base
- Ferry Route
- Trail Head \ Trail
- Railway \ Train Station
- Railway with Bridge
- Railway with Tunnel
- Road (Major → Minor)
- Winter Road
- Road with Bridge
- Road with Tunnel
- Primary, Kings or 400 Series Highway
- Secondary Highway
- Tertiary Highway
- District, County, Regional or Municipal Road
- Toll Highway
- One Way Road
- Road with Permanent Blocked Passage
- Road with Address Ranges
- Hydro Line, Communication Line or Unknown Transmission Line
- Natural Gas Pipeline, Water Pipeline or Unknown Pipeline
- Spot Height
- Index Contour
- Contour
- Wooded Area
- Wetland
- Waterbody
- Waterbody Elevation
- Watercourse
- Falls
- Rapids
- Rapids \ Falls
- Rapids
- Rocks
- Lock Gate
- Dam \ Hydro Wall
- Dam \ Hydro Wall
- Provincial \ State Boundary
- International Boundary
- Upper Tier \ District Municipal Boundary
- Lower Tier \ Single Tier Municipal Boundary
- Lot Line
- Indian Reserve
- Provincial Park
- National Park
- Conservation Reserve
- Military Lands

SCALE 0 — 0.7 km

Projection: Web Mercator

N



PART 1, PLAN 43R -- 37089

LOT P.I.N. 14252 -- 0972

PHASE ONE & RSC PROPERTY

CHINGUACOUSY ROAD

DETAIL (NOT TO SCALE)

PART 1, PLAN 43R-6054
P.I.N. 14252-0069

PART 2, PLAN 43R-6054
P.I.N. 14252-0070

PART 1, PLAN 43R-15641
P.I.N. 14252-0071

PART 2, PLAN 43R-15641
(DEDICATED AS A PUBLIC HIGHWAY BY BY-LAW 45-74 (UNREGISTERED))
SUBJECT TO AN EASEMENT AS SET OUT IN INST. No. CH27913
P.I.N. 14252-0125

LIMIT BETWEEN LOTS 18 AND 19, CONCESSION 2, WEST OF HURONTO STREET

LIMIT OF ORIGINAL ROAD ALLOWANCE

EXPROPRIATION PLAN 30500

UTM CENTROID
N: 4841266.9
E: 592957.4

CONCESSION 2 & 3, WEST OF HURONTARIO STREET

PART 1, PLAN 43R-37046
SUBJECT TO AN EASEMENT IN GROSS AS SET OUT IN INST. No. PR2947880

PART 4, PLAN 43R-37499
SUBJECT TO AN EASEMENT IN GROSS AS SET OUT IN INST. No. PR3767268

PART 3, PLAN 43R-37499
SUBJECT TO AN EASEMENT AS SET OUT IN INST. No. CH27913

PART 2, PLAN 43R-36003

KNOWN AS MAYFIELD ROAD, REGIONAL ROAD No. 14
(ROAD ALLOWANCE BETWEEN LOTS 17 AND 18, CONCESSION 2 WEST OF HURONTARIO STREET)
(DESIGNATED A REGIONAL ROAD BY BY-LAW 179-83 (UNREGISTERED))
P.I.N. 14252 -- 0125

PLAN OF SURVEY OF PART OF LOT 18 CONCESSION 2 WEST OF HURONTARIO STREET
(GEOGRAPHIC TOWNSHIP OF CHINGUACOUSY)
TOWN OF CALEDON
REGIONAL MUNICIPALITY OF PEEL

SCALE 1:1000

10m 0m 10m 20m 30m 40m 50m 60m 70m 80m 90m 100metres

R-PE SURVEYING LTD., O.L.S.

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

NOTES

■	DENOTES MONUMENT FOUND
RIB	DENOTES ROUND IRON BAR
SSIB	DENOTES SHORT STANDARD IRON BAR
SIB	DENOTES STANDARD IRON BAR
IB	DENOTES IRON BAR
P.I.N.	DENOTES PROPERTY IDENTIFIER NUMBER
PL1	DENOTES PLAN 43R-30852
PL2	DENOTES EXPROPRIATION PLAN 30500
(865)	DENOTES DONALD PETER McLEAN, O.L.S.
(1254)	DENOTES ROBERT ESMOND CLIPSHAM, O.L.S.
(1211)	DENOTES PETER JOHN WILLIAMS, O.L.S.
(1509)	DENOTES DUNCAN ASHWORTH, O.L.S.
(1857)	DENOTES THARMARAJAH SHANMUGARAJAH, O.L.S.
(WIT)	DENOTES WITNESS
(NI)	DENOTES NOT IDENTIFIED
(SCP)	DENOTES SPECIFIED CONTROL POINT

BEARING NOTE

BEARINGS ARE UTM GRID, DERIVED FROM SPECIFIED CONTROL POINTS 01019840166 AND 01019840167, UTM ZONE 17 (NAD-1983:CSRS:CBN-V6-2010.0).

COORDINATES ARE UTM ZONE 17 (NAD-1983:CSRS:CBN-V6-2010.0), TO URBAN ACCURACY PER SEC. 14 (2) OF O.REG. 216/10, AND CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

POINT ID	NORTHING	EASTING
SCP 01019840166	4841480.91	593517.98
SCP 01019840167	4840745.81	592953.24

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999676.

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 LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.

2. THE SURVEY WAS COMPLETED ON THE 22ND DAY OF NOVEMBER 2018.

DATE DECEMBER 06 ,2018

PHILLIP STEVEN SWIFT
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
2072344
THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29(3)

R-PE SURVEYING LTD.
ONTARIO LAND SURVEYORS
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Woodbridge, Ontario L4L 8A3
Tel.(416)635-5000 Fax (416)635-5001
Tel.(905)264-0881 Fax (905)264-2099
Website: www.r-pe.ca

DRAWN: A.K. CHECKED: P.S.S.
JOB No. 15-021 CAD FILE No.15021-RSC-3

APPENDIX B –DOCUMENTATION OF INTERVIEWS AND OTHER SOURCE INFORMATION

Phase I ESA Documentation of Interviews

1. Interview Design

The scope of the phase one environmental site assessment interview(s) was to:

a. Obtain information to assist in determining if an area of potential environmental concern (APEC) exists.
b. Identify details of potentially contaminating activities (PCA) or potential contaminant pathways in, on or under the phase one property.

Questions requesting availability or knowledge of site operating records and physical settings in the phase one study area since the first developed use of the site were directed at, and/or have aimed at making all reasonable efforts to inquire about, the current property owner(s) of the phase one property, or at least one owner or occupant of a property in the phase one study area and one provincial or municipal government official, where each party is reasonably familiar with the phase one property and its history.

The Qualified Person and the person that conducted the interview(s) have made all reasonable efforts to ensure that at least one person with detailed knowledge of site activities identified above is present during the site reconnaissance component of the phase one environmental site assessment.

The interview questions noted in the following tables were designed by the Qualified Person identified in this report.

2. Information Gleaned, Compared and Validated through Interviews with the

a) Property Owner Representative – Mayfield Station Development Inc.

Interview Date:	October 30, 2018		
Method and Place of Interview:	Via telephone.		
Person Details:	Steven Silverberg , President, Mayfield Station Development Inc.		
Reason for Person Selection:	Person with detailed knowledge of current and historic site activities		
Key Questions:		**Answers:**	**Comparison to other Information Sources and Validity of Information:**
1.	**Have a Phase I ESA, Phase II ESA, Site Remediation and/or other environmental audit reports been previously conducted for the Site, when, and are they available for review?**	Yes, a Phase I ESA report has been provided to Fisher by us. In addition, we have provided a soil investigation report for pesticides and metals.	Previous reports were reviewed as part of the current investigation.
2.	**What is the main current activity conducted at the Site? Since when?**	The Site is utilized for agricultural use.	The Site is currently agricultural.
3.	**What were the main past activities conducted at the Site? During what periods?**	The Site has historically been agricultural and residential.	Aerial photographs show the Site was historically agricultural, with a residential type dwelling historically present.

4.	**Was there any construction activity conducted at the site in the past years?**	No construction activities have occurred at the Site within the past years.	The residential dwelling was demolished, according to the 2006 aerial photograph.
5.	**Are there any site operating records available for review concerning current and/or past Site operations?**	No.	Not Applicable.
6.	**Do you have knowledge of any current or former underground or aboveground storage tanks, and their location at the site?**	No.	No tanks were encountered at the Site as part of the current investigation.
7.	**Do you have knowledge of any activities and events occurred at neighboring properties that may have affected their environmental condition?**	No.	No PCAs were encountered within 250 m of the nearest Site boundary.
8.	**Do you have knowledge of presence or location of on-site or off-site operating or abandoned water wells or monitoring wells?**	No water well is located on-Site. Some observation well may be present.	No water wells were found at the Site, other than observation wells.

b) Farming Tenant – Mayfield Station Development Inc.

Interview Date:	October 26, 2018		
Method and Place of Interview:	Via telephone.		
Person Details:	Mr. Brian Cook (son of and co-farmer with Mr. Lloyd Cook)		
Reason for Person Selection:	Person with detailed knowledge of current and historic site activities		
Key Questions:		**Answers:**	**Comparison to other Information Sources and Validity of Information:**
1.	**Do you utilize organochlorine pesticides at the Site as part of your farming operation?**	No. We only use Round-up weed killer (Glyphospate) and Round-up ready seeds only. No additional pesticides are used.	Glyphospate is not a prescribed contaminant under Ontario Regulation 153/04
8.	**Do you have knowledge of presence or location of on-site or off-site potentially contaminating activities?**	No.	No PCAs were encountered within 250 m of the nearest Site boundary.

ENVIRONMENTAL RISK INFORMATION SERVICES

DATABASE REPORT

Project Property:	*Phase I ESA - Part of Lot 18, Concession 2 (W.H.S.), Caledon, ON* *Mayfield Rd Mclaughlin Rd* *Caledon ON*
Project No:	*FE-P 16-7992*
Report Type:	*Quote - Custom-Build Your Own Report*
Order No:	*20161122129*
Requested by:	*Fisher Environmental*
Date Completed:	*December 13, 2016*

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

www.erisinfo.com

Table of Contents

Executive Summary

Property Information:

Project Property:	*Phase I ESA - Part of Lot 18, Concession 2 (W.H.S.), Caledon, ON* *Mayfield Rd Mclaughlin Rd Caledon ON*
Project No:	*FE-P 16-7992*

Order Information:

Order No:	*20161122129*
Date Requested:	*November 22, 2016*
Requested by:	*Fisher Environmental*
Report Type:	*Quote - Custom-Build Your Own Report*

Additional Products:

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.25km	Total
AAGR	*Abandoned Aggregate Inventory*	N	-	-	-
AGR	*Aggregate Inventory*	N	-	-	-
AMIS	*Abandoned Mine Information System*	N	-	-	-
ANDR	*Anderson's Waste Disposal Sites*	N	-	-	-
AUWR	*Automobile Wrecking & Supplies*	N	-	-	-
BORE	*Borehole*	N	-	-	-
CA	*Certificates of Approval*	N	-	-	-
CFOT	*Commercial Fuel Oil Tanks*	N	-	-	-
CHEM	*Chemical Register*	N	-	-	-
COAL	*Inventory of Coal Gasification Plants and Coal Tar Sites*	N	-	-	-
CONV	*Compliance and Convictions*	N	-	-	-
CPU	*Certificates of Property Use*	N	-	-	-
DRL	*Drill Hole Database*	N	-	-	-
EASR	*Environmental Activity and Sector Registry*	N	-	-	-
EBR	*Environmental Registry*	N	-	-	-
ECA	*Environmental Compliance Approval*	N	-	-	-
EEM	*Environmental Effects Monitoring*	N	-	-	-
EHS	*ERIS Historical Searches*	N	-	-	-
EIIS	*Environmental Issues Inventory System*	N	-	-	-
EMHE	*Emergency Management Historical Event*	N	-	-	-
EXP	*List of TSSA Expired Facilities*	N	-	-	-
FCON	*Federal Convictions*	N	-	-	-
FCS	*Contaminated Sites on Federal Land*	N	-	-	-
FOFT	*Fisheries & Oceans Fuel Tanks*	N	-	-	-
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	0	0
GHG	*Greenhouse Gas Emissions from Large Facilities*	N	-	-	-
HINC	*TSSA Historic Incidents*	N	-	-	-
IAFT	*Indian & Northern Affairs Fuel Tanks*	N	-	-	-
INC	*TSSA Incidents*	N	-	-	-
LIMO	*Landfill Inventory Management Ontario*	N	-	-	-
MINE	*Canadian Mine Locations*	N	-	-	-
MNR	*Mineral Occurrences*	N	-	-	-
NATE	*National Analysis of Trends in Emergencies System (NATES)*	N	-	-	-
NCPL	*Non-Compliance Reports*	N	-	-	-

Database	Name	Searched	Project Property	Boundary to 0.25km	Total
NDFT	National Defense & Canadian Forces Fuel Tanks	N	-	-	-
NDSP	National Defense & Canadian Forces Spills	N	-	-	-
NDWD	National Defence & Canadian Forces Waste Disposal Sites	N	-	-	-
NEBW	National Energy Board Wells	N	-	-	-
NEES	National Environmental Emergencies System (NEES)	N	-	-	-
NPCB	National PCB Inventory	N	-	-	-
NPRI	National Pollutant Release Inventory	N	-	-	-
OGW	Oil and Gas Wells	N	-	-	-
OOGW	Ontario Oil and Gas Wells	N	-	-	-
OPCB	Inventory of PCB Storage Sites	N	-	-	-
ORD	Orders	N	-	-	-
PAP	Canadian Pulp and Paper	N	-	-	-
PCFT	Parks Canada Fuel Storage Tanks	N	-	-	-
PES	Pesticide Register	Y	0	0	0
PINC	TSSA Pipeline Incidents	N	-	-	-
PRT	Private and Retail Fuel Storage Tanks	Y	0	0	0
PTTW	Permit to Take Water	N	-	-	-
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0
RSC	Record of Site Condition	N	-	-	-
RST	Retail Fuel Storage Tanks	N	-	-	-
SCT	Scott's Manufacturing Directory	Y	0	0	0
SPL	Ontario Spills	Y	0	1	1
SRDS	Wastewater Discharger Registration Database	N	-	-	-
TANK	Anderson's Storage Tanks	N	-	-	-
TCFT	Transport Canada Fuel Storage Tanks	N	-	-	-
VAR	TSSA Variances for Abandonment of Underground Storage Tanks	N	-	-	-
WDS	Waste Disposal Sites - MOE CA Inventory	N	-	-	-
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	N	-	-	-
WWIS	Water Well Information System	N	-	-	-
	Total:		0	1	1

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev diff (m)	Page Number

No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

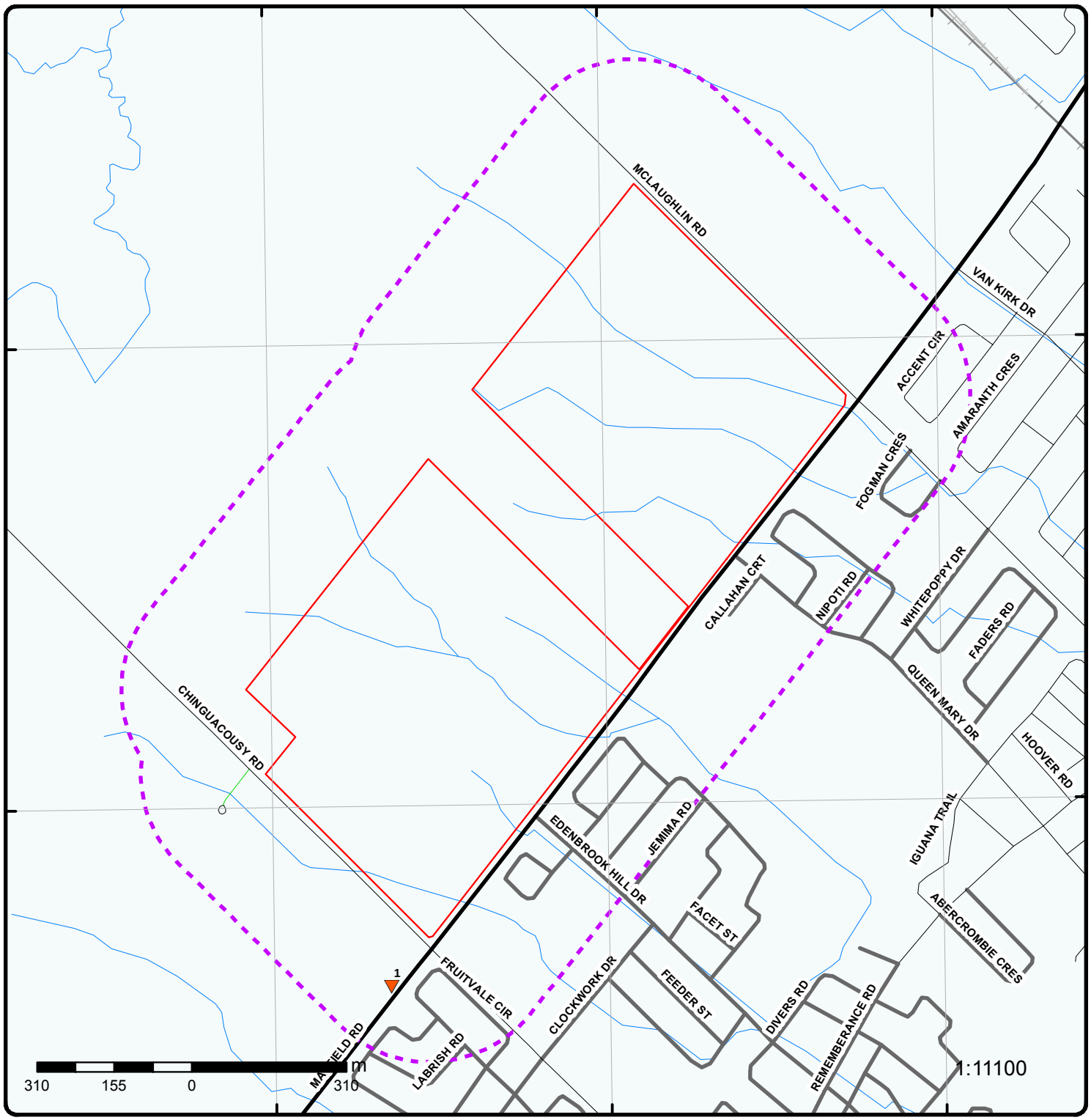
Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
1	SPL	Hydro One Inc.	2069 Mayfield Rd. TRANSFORMER<UNOFFICIAL> Caledon ON	S/123.7	-0.97	12

Executive Summary: Summary By Data Source

SPL - Ontario Spills

A search of the SPL database, dated 1988-Jan 2016 has found that there are 1 SPL site(s) within approximately 0.25 kilometers of the project property.

Site	Address	Distance (m)	Map Key
Hydro One Inc.	2069 Mayfield Rd. TRANSFORMER<UNOFFICIAL> Caledon ON	123.7	1



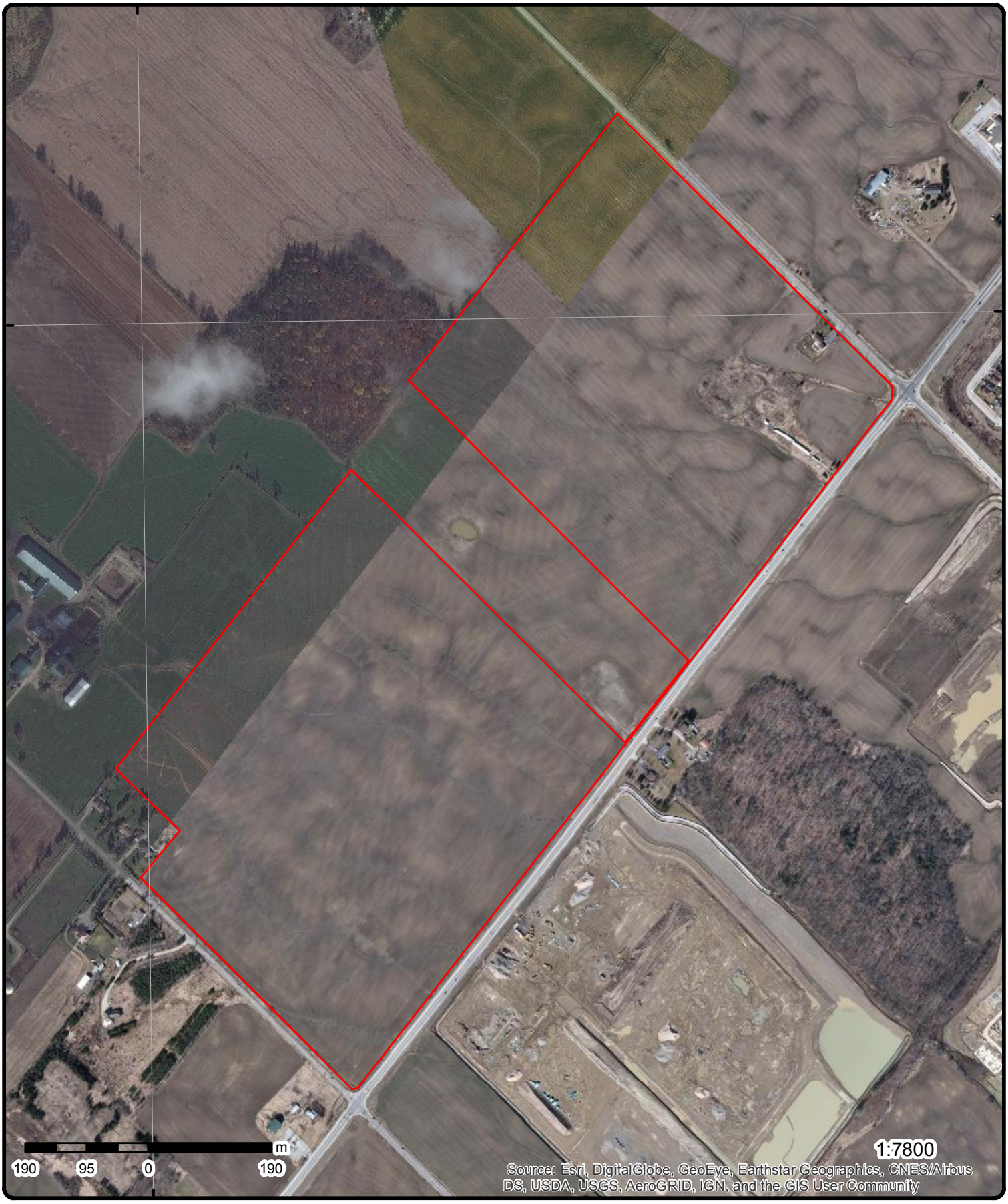
Map : 0.25 Kilometer Radius

Address: Mayfield Rd Mclaughlin Rd, Caledon, ON
Order No: 20161122129

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- Expressway
- Principal Highway
- Secondary Highway
- Major Road
- Local road
- Trail
- Proposed Road
- Ferry Route/Ice Road
- Industrial and Resource - Regions
- Main Line
- Sidetrack
- Transit Line
- Abandoned Line
- National Park
- Provincial or Territorial Park
- Other Park
- Golf Course or Driving Range
- Park or Sports Field
- Other Recreation Area

Source: © 2015 DMTI Spatial Inc.



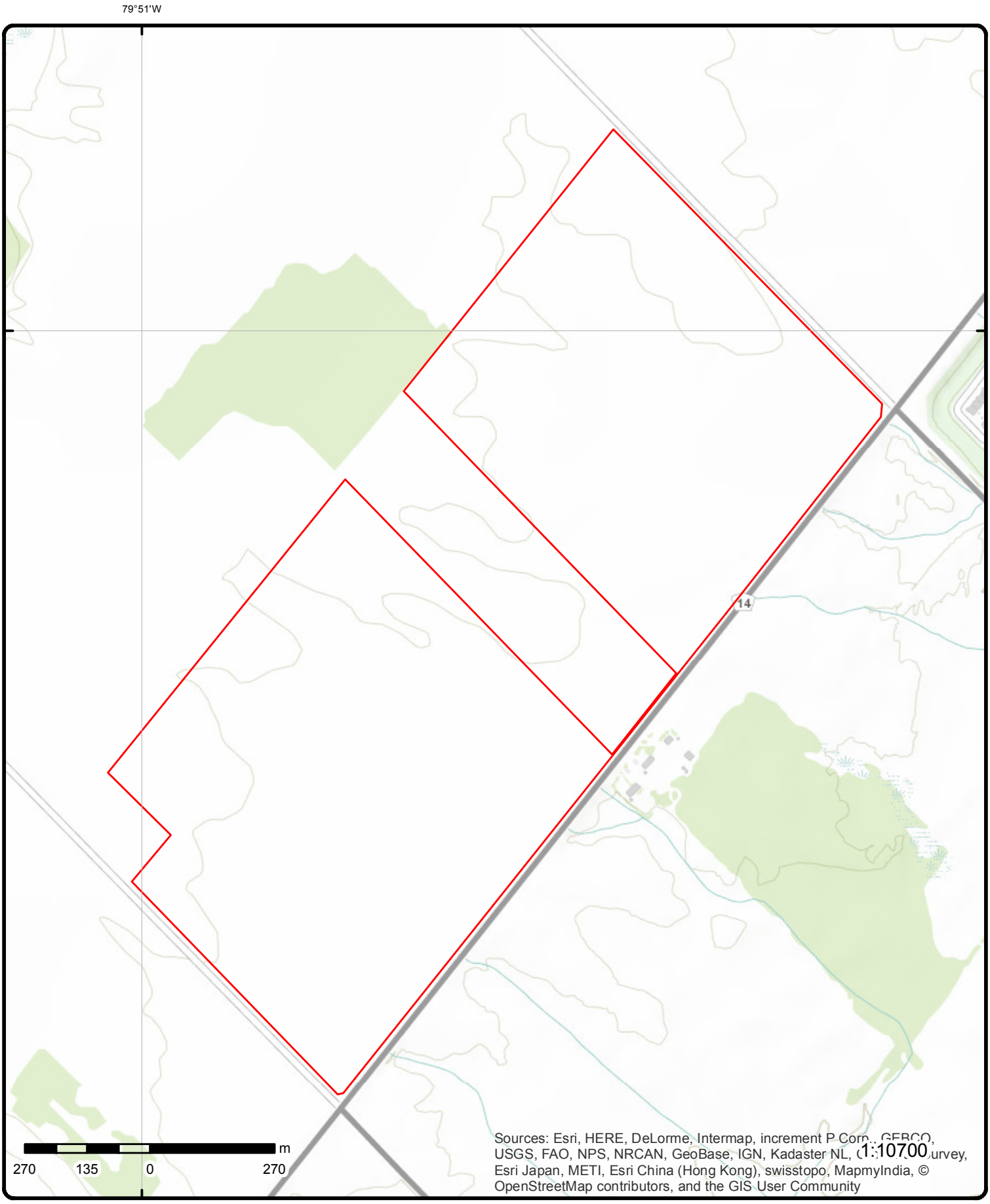
Aerial

Order No: 20161122129

Address: Mayfield Rd Mclaughlin Rd, Caledon, ON

Source: ESRI World Imagery

ENVIRONMENTAL RISK INFORMATION SERVICES



Topographic Map

Order No: 20161122129

Address: Mayfield Rd Mclaughlin Rd, Caledon, ON

Source: ESRI World Topographic Map

Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elevation (m)	Site	DB
1	1 of 1	S/123.7	256.9	Hydro One Inc. 2069 Mayfield Rd. TRANSFORMER<UNOFFICIAL> Caledon ON	SPL

Ref NO:	5440-6MNRVD
Contaminant Code:	15
Contaminant Name:	TRANSFORMER OIL (N.O.S.)
Contaminant Quantity:	10 L
Incident Cause::	Container Leak (Fuel Tank Barrels)
Incident Dt:	3/7/2006
Incident Reason::	Weather
Incident Summary::	Transformer spill 10L, possibly months old
MOE Reported Dt:	3/7/2006
Environmental Impact::	Not Anticipated
Nature of Impact::	Soil Contamination
Receiving Medium::	Land
SAC Action Class:	
Sector Source Type:	Transformer
Site Municipality:	Caledon

Unplottable Summary

Total: 6 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
SPL	Ravi Transport Ltd<UNOFFICIAL>	Mayfield Rd, just W of Heart Lake Rd	Brampton ON	
SPL	TRANSPORT TRUCK	MAYFIELD RD EAST OF KENNEDY RD MOTOR VEHICLE (OPERATING FLUID)	BRAMPTON CITY ON	
SPL		On Mayfield Rd. just east of Hurontario St. CONSTRUCTION SITE<UNOFFICIAL>	Brampton ON	
SPL		CHINGUACOUSY RD. JUST NORTH OF KING ST., APPROX 10 KM NORTH OF BRAMPTON<UNOFFICIAL>	Caledon ON	
SPL	ABTREX CONTRACTORS	FLETCHERS CREEK IN CHRIS GIBSON PARK (MCLAUGHKIN RD, SOUTH OF WILLIAMS PKY) 2500 WILLIAMS PKY BRAMPTON, L6S 5M9	BRAMPTON CITY ON	
SPL	LAIDLAW ENVIRONMENTAL	MCLAUGHLIN ROAD, JUST NORTH OF FLOWER TOWN STORE MOTOR VEHICLE (OPERATING FLUID)	BRAMPTON CITY ON	

Unplottable Report

Site: ***Ravi Transport Ltd<UNOFFICIAL>***
Mayfield Rd, just W of Heart Lake Rd Brampton ON

Database: ***SPL***

Ref NO:	2721-85UMVM
Contaminant Code:	15
Contaminant Name:	TRANSMISSION OIL
Contaminant Quantity:	30 L
Incident Cause::	Pipe Or Hose Leak
Incident Dt:	
Incident Reason::	
Incident Summary::	Ravi Transport Ltd: 75 L operating fluids to Rd
MOE Reported Dt:	5/27/2010
Environmental Impact::	Not Anticipated
Nature of Impact::	Other Impact(s)
Receiving Medium::	
SAC Action Class:	Land Spills
Sector Source Type:	Motor Vehicle
Site Municipality:	

Site: ***TRANSPORT TRUCK***
MAYFIELD RD EAST OF KENNEDY RD MOTOR VEHICLE (OPERATING FLUID) BRAMPTON CITY ON

Database: ***SPL***

Ref NO:	116688
Contaminant Code:	
Contaminant Name:	
Contaminant Quantity:	
Incident Cause::	TRUCK/TRAILER OVERTURN
Incident Dt:	8/3/1995
Incident Reason::	ERROR
Incident Summary::	TRANSPORT TRUCK: 135 L DIESEL TO WATERFILLED DITCH: CONTAINED BY WORKS
MOE Reported Dt:	8/3/1995
Environmental Impact::	POSSIBLE
Nature of Impact::	Water course or lake
Receiving Medium::	LAND / WATER
SAC Action Class:	
Sector Source Type:	
Site Municipality:	21101

Site:
On Mayfield Rd. just east of Hurontario St. CONSTRUCTION SITE<UNOFFICIAL> Brampton ON

Database: ***SPL***

Ref NO:	1750-6UMMSF
Contaminant Code:	13
Contaminant Name:	HYDRAULIC OIL
Contaminant Quantity:	100 L
Incident Cause::	
Incident Dt:	10/16/2006
Incident Reason::	Equipment Failure
Incident Summary::	Brampton: Spill of DSL impacting Creek(unknown name)
MOE Reported Dt:	10/16/2006
Environmental Impact::	Possible
Nature of Impact::	Surface Water Pollution
Receiving Medium::	Water
SAC Action Class:	
Sector Source Type:	Other Motor Vehicle
Site Municipality:	Brampton

Site: ***Database:*** ***SPL***

CHINGUACOUSY RD. JUST NORTH OF KING ST., APPROX 10 KM NORTH OF BRAMPTON<UNOFFICIAL> Caledon ON

Ref NO:	3315-6UUPDA
Contaminant Code:	15
Contaminant Name:	MOTOR OIL
Contaminant Quantity:	10 L
Incident Cause::	Other Transport Accident
Incident Dt:	10/23/2006
Incident Reason::	
Incident Summary::	MVA: overturned TT, 10L motor oil to drainage ditch
MOE Reported Dt:	10/23/2006
Environmental Impact::	Possible
Nature of Impact::	Surface Water Pollution
Receiving Medium::	Water
SAC Action Class:	
Sector Source Type:	Other Motor Vehicle
Site Municipality:	Caledon

Site: ***ABTREX CONTRACTORS*** ***Database:*** ***SPL***

FLETCHERS CREEK IN CHRIS GIBSON PARK (MCLAUGHKIN RD, SOUTH OF WILLIAMS PKY) 2500 WILLIAMS PKY BRAMPTON, L6S 5M9 BRAMPTON CITY ON

Ref NO:	180490
Contaminant Code:	
Contaminant Name:	
Contaminant Quantity:	
Incident Cause::	WASTEWATER DISCHARGE TO WATERCOURSE
Incident Dt:	5/8/2000
Incident Reason::	OTHER
Incident Summary::	ABTREX- OUTFALL TO CREEK. LARGE VOLUME PINK WATER. EXCAVATING. SILT. ERP.
MOE Reported Dt:	5/8/2000
Environmental Impact::	POSSIBLE
Nature of Impact::	Water course or lake
Receiving Medium::	WATER
SAC Action Class:	
Sector Source Type:	
Site Municipality:	21101

Site: ***LAIDLAW ENVIRONMENTAL*** ***Database:*** ***SPL***

MCLAUGHLIN ROAD, JUST NORTH OF FLOWER TOWN STORE MOTOR VEHICLE (OPERATING FLUID) BRAMPTON CITY ON

Ref NO:	127085
Contaminant Code:	
Contaminant Name:	
Contaminant Quantity:	
Incident Cause::	PIPE/HOSE LEAK
Incident Dt:	5/29/1996
Incident Reason::	OVERSTRESS/OVERPRESSURE
Incident Summary::	LAIDLAW-100 L HYDRAULIC OIL TO PVMT FROM RUPTUREDHOSE. NO SEWERS. REGION.
MOE Reported Dt:	5/29/1996
Environmental Impact::	NOT ANTICIPATED
Nature of Impact::	
Receiving Medium::	LAND
SAC Action Class:	
Sector Source Type:	
Site Municipality:	21101

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 2016

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: Oct 31, 2014

Anderson's Waste Disposal Sites: Private ANDR

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

Government Publication Date: 1860s-Present

Automobile Wrecking & Supplies: Private AUWR

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

Government Publication Date: Oct 31, 2016

Borehole: Provincial BORE

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

Government Publication Date: 1875-Jul 2014

Certificates of Approval: Provincial CA

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

Government Publication Date: 1985-Oct 30, 2011*

Commercial Fuel Oil Tanks: Provincial CFOT

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

Government Publication Date: Oct 31, 2016

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: Oct 31, 2016

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 2016

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: Nov 30, 2016

Drill Hole Database: Provincial DRL

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

Government Publication Date: Aug 31, 2015

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: Nov 30, 2016

Environmental Registry: Provincial EBR

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

Government Publication Date: Nov 30, 2016

Environmental Compliance Approval: Provincial ECA

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

Government Publication Date: Nov 30, 2016

Environmental Effects Monitoring: Federal EEM

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

Government Publication Date: 1992-2007*

ERIS Historical Searches: Private EHS

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

Government Publication Date: 1999-Aug 2016

Environmental Issues Inventory System: Federal EIIS

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

Government Publication Date: 1992-2001*

Emergency Management Historical Event: Provincial EMHE

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

Government Publication Date: May 31, 2014

List of TSSA Expired Facilities: Provincial EXP

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

Government Publication Date: Oct 31, 2016

Federal Convictions: Federal FCON

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

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land: Federal FCS

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

Government Publication Date: June 2000-Oct 2015

Fisheries & Oceans Fuel Tanks: Federal FOFT

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

Government Publication Date: 1964-Sept 2003

Fuel Storage Tank: Provincial FST

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

Government Publication Date: Oct 31, 2016

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-Sep 2016

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 2014

TSSA Historic Incidents: Provincial HINC

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

Government Publication Date: 2006-June 2009*

Indian & Northern Affairs Fuel Tanks: Federal IAFT

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

Government Publication Date: 1950-Aug 2003*

TSSA Incidents: Provincial INC

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

Government Publication Date: Aug 31, 2016

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: Dec 31, 2013

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-Feb 2016

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, 2014

National Defense & Canadian Forces Fuel Tanks: Federal NDFT

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

Government Publication Date: Up to May 2001*

National Defense & Canadian Forces Spills: Federal NDSP

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

Government Publication Date: Mar 1999-Aug 2010

National Defence & Canadian Forces Waste Disposal Sites: Federal NDWD

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

Government Publication Date: 2001-Apr 2007*

National Energy Board Wells: Federal NEBW

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

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES): Federal NEES

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

Government Publication Date: 1974-2003*

National PCB Inventory: Federal NPCB

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

Government Publication Date: 1988-2008*

National Pollutant Release Inventory: Federal NPRI

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

Government Publication Date: Dec 31, 2014

Oil and Gas Wells: Private OGW

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

Government Publication Date: 1988-Jun 2016

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: Oct 31, 2016

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: Nov 30, 2016

Canadian Pulp and Paper: Private PAP

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

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

Parks Canada Fuel Storage Tanks: Federal PCFT

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

Government Publication Date: 1920-Jan 2005*

Pesticide Register: Provincial PES

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

Government Publication Date: Oct 31, 2016

TSSA Pipeline Incidents: Provincial PINC

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

Government Publication Date: Aug 31, 2016

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: Nov 30, 2016

Ontario Regulation 347 Waste Receivers Summary: Provincial REC

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

Government Publication Date: 1986-2013

Record of Site Condition: Provincial RSC

The Record of Site Condition (RSC) is part of the Ministry of the Environment's Brownfields Environmental Site Registry. Protection from environmental cleanup orders for property owners is contingent upon documentation known as a record of site condition (RSC) being filed in the Environmental Site Registry. In order to file an RSC, the property must have been properly assessed and shown to meet the soil, sediment and groundwater standards appropriate for the use (such as residential) proposed to take place on the property. The Record of Site Condition Regulation (O. Reg. 153/04) details requirements related to site assessment and clean up.
RSCs filed after July 1, 2011 will also be included as part of the new (O.Reg. 511/09).

Government Publication Date: Oct 31, 2016

Retail Fuel Storage Tanks: Private RST

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

Government Publication Date: Oct 31, 2016

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-Jan 2016

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: 1990-2014

Anderson's Storage Tanks: Private TANK

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

Government Publication Date: 1915-1953*

Transport Canada Fuel Storage Tanks: Federal TCFT

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

Government Publication Date: 1970-Mar 2007

TSSA Variances for Abandonment of Underground Storage Tanks: Provincial VAR

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

Government Publication Date: Oct 31, 2016

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: Nov 30, 2016

Waste Disposal Sites - MOE 1991 Historical Approval Inventory: Provincial WDSH

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

Government Publication Date: Up to Oct 1990*

Water Well Information System: Provincial WWIS

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

Government Publication Date: Jun 30, 2016

Definitions

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX C – TOPOGRAPHICAL & GEOLOGICAL MAPS, WELL RECORDS, OTHER MAPS

MINISTRY OF NATURAL RESOURCES AND FORESTRY

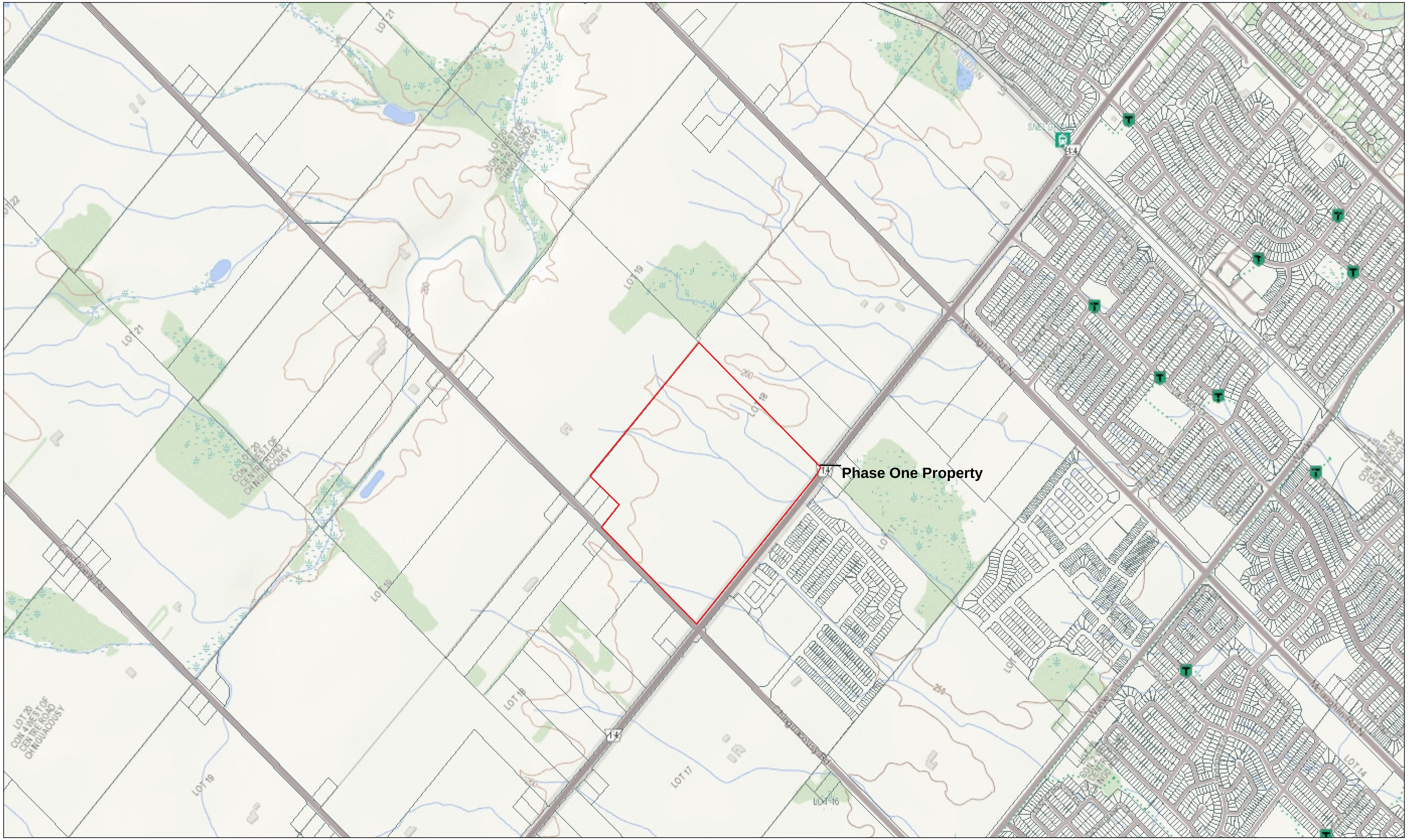
Make a Topographic Map

Ontario

Topography Map

Notes:

FISHER ENVIRONMENTAL LTD.



Legend

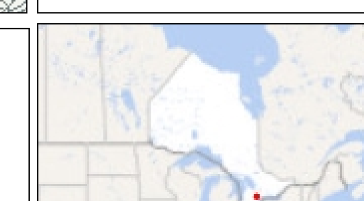
- Building as Symbol
- Building to Scale
- Airport
- Heliport \ Hospital Heliport
- Seaplane Base
- Ferry Route
- Trail Head \ Trail
- Railway \ Train Station
- Railway with Bridge
- Railway with Tunnel
- Road (Major → Minor)
- Winter Road
- Road with Bridge
- Road with Tunnel
- 7 Primary, Kings or 400 Series Highway
- 524 Secondary Highway
- 801 Tertiary Highway
- 28 District, County, Regional or Municipal Road
- 407 Toll Highway
- One Way Road
- Road with Permanent Blocked Passage
- 420 500 421 499 Road with Address Ranges
- Hydro Line, Communication Line or Unknown Transmission Line
- Natural Gas Pipeline, Water Pipeline or Unknown Pipeline
- .208 Spot Height
- 200 Index Contour
- Contour
- Wooded Area
- Wetland
- Waterbody
- .184 Waterbody Elevation
- Watercourse
- Falls
- Rapids
- Rapids \ Falls
- Rapids
- Rocks
- Lock Gate
- Dam \ Hydro Wall
- Dam \ Hydro Wall
- Provincial \ State Boundary
- International Boundary
- Upper Tier \ District Municipal Boundary
- Lower Tier \ Single Tier Municipal Boundary
- Lot Line
- Indian Reserve
- Provincial Park
- National Park
- Conservation Reserve
- Military Lands

SCALE

0 0.7 km

Projection: Web Mercator

N



The Ontario Ministry of Natural Resources and Forestry shall not be liable in any way for the use of, or reliance upon, this map or any information on this map. This map should not be used for: navigation, a plan of survey, routes, nor locations.

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Surficial Geology Map

2068 Mayfield Road, Caledon, Ontario
FE-P 18-9184-C

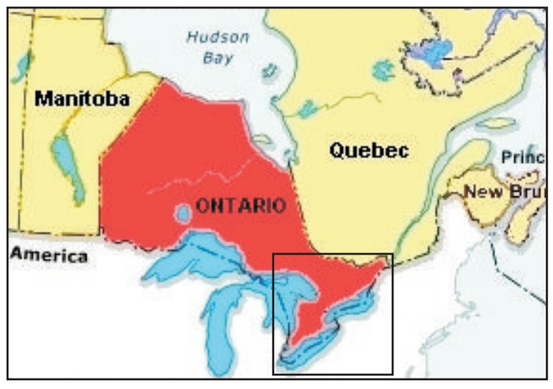
Map legend attached following this figure

Ontario

Ontario Geological Survey

SURFICIAL GEOLOGY OF SOUTHERN ONTARIO

This map is published with the permission of the Senior Manager, Sedimentary Geoscience Section, Ontario Geological Survey.



Location Map

SOURCES OF INFORMATION

Base map: Natural Resources and Values Information System (NRVIS)

Projection: NAD 83

CREDITS

Author: The Ontario Geological Survey

Acknowledgements: John Dodge (OGS), Andy Bajc (OGS), George Gao (OGS), Steve van Haaften (OGS), Shannon Evers (OGS), Steve Leney (MNR), John Ernsting (MNR), Scott Christilaw (MNR), Andrew Moore (GSC)

Issued 2003.

LEGEND

- **Fill**
- **Organic Deposits:** peat, muck and marl
- **Silt**
- **Clay**
- **Sand**
- **Gravel**
- **Till (Diamicton)**
- **Sedimentary (Paleozoic) bedrock**
- **Precambrian bedrock**

Correlation Matrix:

Material	Current map units
Fill	21
Organic Materials	20
Silt & Clay	8, 10, 12, 13, 15, 18, 19
Sand & Gravel	6, 7, 9, 11, 12, 14, 16, 18, 19
Sand	6, 7, 9, 11, 12, 14, 16, 17, 18, 19
Till (Diamicton)	5, 5a, 5b, 5c, 5d, 5e
Sedimentary bedrock	3, 4
Precambrian bedrock	1, 2

LEGEND

PHANEROZOIC

CENOZOIC

QUATERNARY

RECENT

21 **Man-made deposits:** fill, sewage lagoon, landfill, urban development

20 **Organic Deposits:** peat, muck, marl

19 **Modern alluvial deposits:** clay, silt, sand, gravel, may contain organic remains

18 **Colluvial deposits:** boulders, scree, talus, undifferentiated landslide materials

17 **Eolian deposits:** fine to very fine sand and silt

16 **Coarse-textured marine deposits:** sand, gravel, minor silt and clay
16a Deltaic deposits
16b Littoral deposits
16c Foreshore and basinal deposits

15 **Fine-textured marine deposits:** silt and clay, minor sand and gravel

14 **Coarse-textured lacustrine deposits:** sand, gravel, minor silt and clay
14a Deltaic deposit
14b Littoral deposits
14c Foreshore and basinal deposits

13 **Fine-textured lacustrine deposits:** silt and clay, minor sand and gravel

PLEISTOCENE

12 **Older alluvial deposits:** clay, silt, sand, gravel, may contain organic remains

11 **Coarse-textured glaciomarine deposits:** sand, gravel, minor silt and clay
11a Deltaic deposits
11b Littoral deposits
11c Foreshore and basinal deposits

10 **Fine-textured glaciomarine deposits:** silt and clay, minor sand and gravel
10a Massive to well laminated
10b Interbedded silt and clay and gritty, pebbly flow till and rainout deposits

9 **Coarse-textured glaciolacustrine deposits:** sand, gravel, minor silt and clay
9a Deltaic deposits
9b Littoral deposits
9c Foreshore and basinal deposits

8 **Fine-textured glaciolacustrine deposits:** silt and clay, minor sand and gravel
8a Massive to well laminated
8b Interbedded silt and clay and gritty, pebbly flow till and rainout deposits

7 **Glaciofluvial deposits:** river deposits and delta topset facies
7a Sandy deposits
7b Gravelly deposits

6 **Ice-contact stratified deposits:** sand and gravel, minor silt, clay and till
6a In moraines, eskers, kames and crevasse fills
6b In subaquatic fans

5a **Till:** Silty sand to sand-textured till on Precambrian terrain
5a Silty sand to sand-textured till on Precambrian terrain

5b 5b Stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain

5c 5c Stony, sandy silt to silty sand-textured till on Paleozoic terrain

5d 5d Clay to silt-textured till (derived from glaciolacustrine deposits or shale)

5e 5e Undifferentiated older tills, may include stratified deposits

PALEOZOIC

4 **Bedrock-drift complex in Paleozoic terrain:**
4a Primarily till cover
4b Primarily stratified drift cover

3 **Paleozoic bedrock**

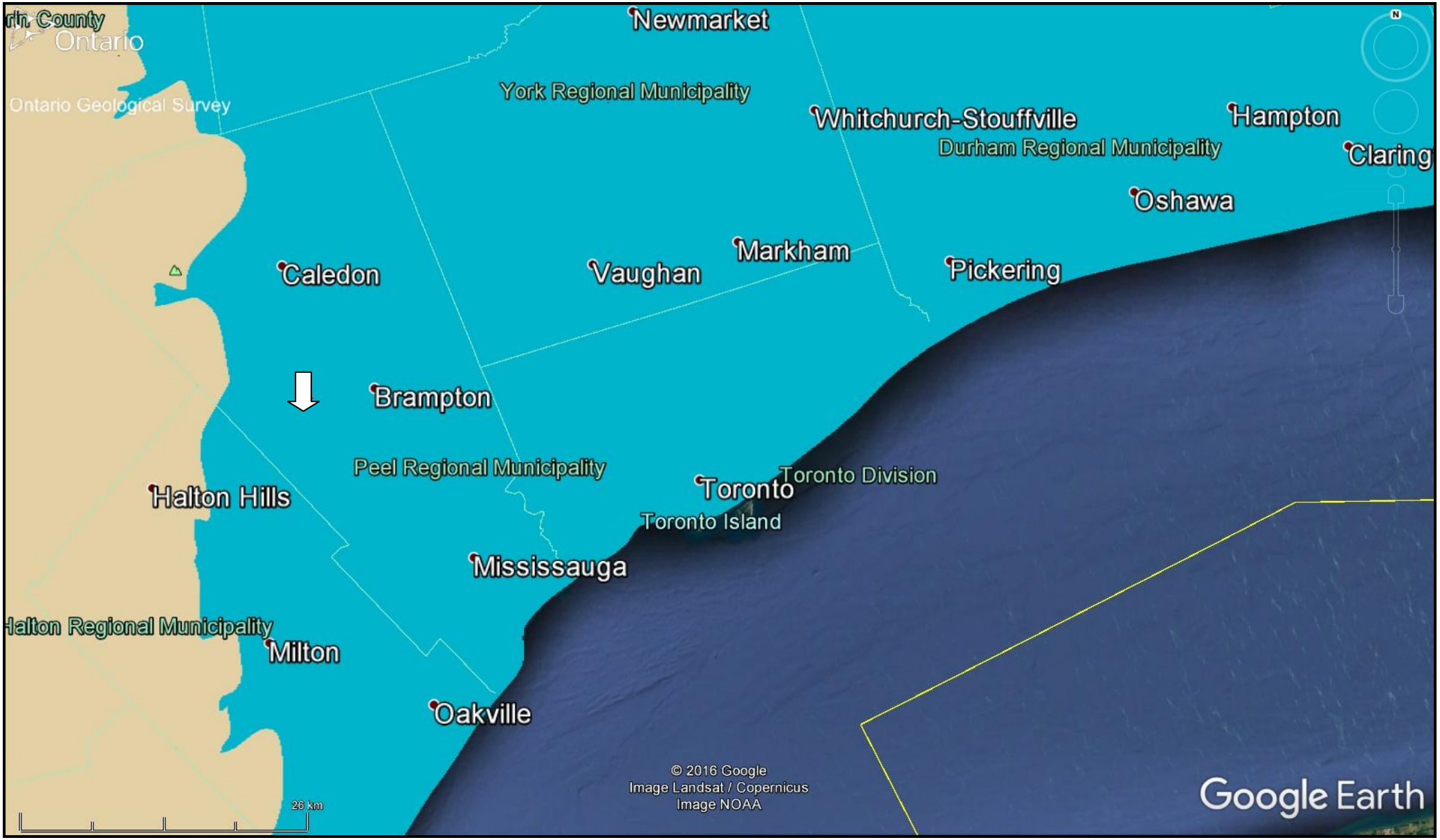
PRECAMBRIAN

2 **Bedrock-drift complex in Precambrian terrain:**
2a Primarily till cover
2b Primarily stratified drift cover

1 **Precambrian bedrock**

SYMBOLS

- Clay pit (active or inactive)
- Peat and muck pit
- Location of quarry
- Sand or gravel pit;
- Tailings
- Stoss and lee feature; crag and tail
- Delta, glaciolacustrine
- Drumlin or drumlinoid ridges
- Dune
- Glacial fluting
- Fossil locality
- Geotechnical or stratigraphic borehole not reaching bedrock
- Kame
- Solution weathering feature
- Kettle
- Outcrop
- Observed pebble orientation in till
- Reservoir
- Roches moutonee
- Sample site
- Small landslide scar
- Glacial striae; direction of ice movement known
- Glacial striae; direction of ice movement unknown
- Talus
- Area of sand dune
- Area of former lake bed
- Area of ribbed moraine or till ridges transverse to ice flow
- Area of scabland
- Beach ridges and near shore bars
- Shore bluff or scarp
- Crevasse filling
- Crests of large sand dune (eolian)
- Trend of moraine crest
- Bedrock scarp or escarpment
- Esker; direction of flow known
- Esker; direction of flow unknown
- Meltwater channel; inferred direction of flow
- Meltwater channel; direction of flow unknown
- Iceberg keel mark
- Ice-contact slope
- Clint and gryke topography
- Linear feature observed on aerial photograph
- Crest of megaripple
- Meltwater flow; inferred direction of flow
- Meltwater flow; direction of flow unknown
- Minor moraine
- Mapable edge of quarry or pit
- Bedrock pressure release ridge
- Ribbed or rogen moraine
- Edge of a mapable landslide scar
- Slump block, margin
- Abandoned meltwater channel or river channel; terrace escarpment
- Area of landslide scar
- Area of hummocky topography
- Area of moraine with no hummocky topography



Bedrock Geology Map

2068 Mayfield Road, Caledon, Ontario
FE-P 18-9184-C

Map legend attached following this figure

MRD 126 - Revision 1
1:250 000 Scale Bedrock Geology of Ontario

LEGEND[ax]

In general, older bedrock units are named after younger ones. For example, unit 59e is older than unit 59d.

PHANEROZOIC[b] (Present to 542.0 Ma)

MESOZOIC (65.5 Ma to 251.0 Ma)

CRETACEOUS AND JURASSIC (65.5 Ma to 199.6 Ma)

LOWER CRETACEOUS AND MIDDLE JURASSIC

63 **Kaolinitic clay, clay, sand, lignite**

- 63a Mattagami Fm.; Mistuskwia Beds
- 63b Evans Strait Fm.

JURASSIC (145.5 Ma to 199.6 Ma)

● **Alkalic dikes and intrusions:** kimberlite and lamprophyre

PALEOZOIC (251.0 Ma to 542.0 Ma)

MISSISSIPPIAN TO DEVONIAN[c] (318.1 Ma to 416.0 Ma)

61 **Shale:** Port Lambton Gp.

DEVONIAN (359.2 Ma to 416.0 Ma)

UPPER DEVONIAN

60 **Shale**

- 60a Kettle Point Fm.
- 60b Long Rapids Fm.

MIDDLE DEVONIAN

59 **Limestone, dolostone, shale**

- 59a Hamilton Gp.
- 59b Marcellus Fm.
- 59c Dundee Fm.
- 59d Detroit River Gp.; Onondaga Fm.
- 59e Williams Island Fm.
- 59f Murray Island Fm.
- 59g Moose River Fm.
- 59h Kwataboahegan Fm.

LOWER DEVONIAN

58 **Sandstone, dolostone, limestone**

- 58a Bois Blanc Fm.; Oriskany Fm.
- 58b Stooping River Fm.
- 58c Sextant Fm.

SILURIAN (416.0 Ma to 443.7 Ma)

UPPER SILURIAN

57 **Limestone, dolostone, shale, sandstone, gypsum, salt**

- 57a Bass Islands Fm.
- 57b Bertie Fm.
- 57c Salina Fm.
- 57d Kenogami River Fm. (Upper Silurian to Lower Devonian)

LOWER SILURIAN

56 **Sandstone, shale, dolostone, siltstone**

- 56a Guelph Fm. (also present in the Upper Silurian)
- 56b Lockport Fm.
- 56c Amabel Fm.

56d Clinton Gp.; Cataract Gp.
56e Thornloe Fm.; Earlton Fm.
56f Wabi Gp.
56g Attawapiskat Fm. (also present in the Upper Silurian)
56h Ekwan River Fm.
56i Severn River Fm.

ORDOVICIAN (443.7 Ma to 488.3 Ma)

UPPER ORDOVICIAN

55 **Shale, limestone, dolostone, siltstone**

55a Queenston Fm.
55b Georgian Bay Fm.; Blue Mountain Fm.; Billings Fm.; Collingwood Mb.; Eastview Mb.
55c Liskeard Gp.
55d Red Head Rapids Fm.
55e Churchill River Gp.
55f Bad Cache Rapids Gp.

MIDDLE ORDOVICIAN

54 **Limestone, dolostone, shale, arkose, sandstone**

54a Ottawa Gp.; Simcoe Gp.; Shadow Lake Fm. (now considered Upper Ordovician)
54b Chazy Gp.; Rockcliffe Fm.

LOWER ORDOVICIAN

53 **Dolostone, sandstone:** Beekmantown Gp.

CAMBRIAN (488.3 Ma to 542.0 Ma)

52 **Conglomerate, sandstone, shale, dolostone:** Potsdam Gp.; Nepean Fm.; Covey Hill Fm.

UNCONFORMITY

PRECAMBRIAN[d] (0.542 Ga to <3.85 Ga)

GRENVILLE PROVINCE[e]

PROTEROZOIC (0.542 Ga to 2.50 Ga)

NEO- TO MESOPROTEROZOIC (0.542 Ga to 1.6 Ga)

51 **Tectonite unit:** tectonites, straight gneisses, porphyroclastic gneisses, unsubdivided gneisses in major deformation zones, mylonites, protomylonites

CENTRAL METASEDIMENTARY BELT

50 **Late felsic plutonic rocks[f]:** granodiorite, granite, syenite, pegmatite, alkalic granite, migmatitic gneisses

50a Granitic and syenitic gneisses
50b Granitic gneisses with metasedimentary xenoliths, migmatites, injection gneisses, pegmatites

49 **Mafic to ultramafic plutonic rocks[f]:** diorite, gabbro, peridotite, pyroxenite, anorthosite, derived metamorphic rocks

49a Gabbro
49b Diorite
49c Anorthosite, gabbroic anorthosite

48 **Alkalic plutonic rocks:** nepheline syenite, alkalic syenite, fenite; associated mafic, ultramafic and carbonatitic rocks

48a Syenite
48b Nepheline syenite

47 **Early felsic plutonic rocks[f]:** granodiorite, tonalite, monzogranite, syenogranite; derived gneisses and migmatites

47a Monzo- and syenogranite
47b Granodiorite
47c Trondhjemite
47d Tonalite

GRENVILLE SUPERGROUP AND FLINTON GROUP[g]

46 **Carbonate metasedimentary rocks:** marble, calc-silicate rocks, skarn, tectonic breccias

45 **Clastic metasedimentary rocks[f]:** conglomerate, wacke, quartz arenite, arkose, limestone, siltstone, chert, minor iron formation, minor metavolcanic rocks

44 **Mafic to felsic metavolcanic rocks:** flows, tuffs, breccias, minor iron formation, minor metasedimentary rocks; includes reworked pyroclastic units, amphibolite

MESOPROTEROZOIC (1.0 Ga to 1.6 Ga)

CENTRAL GNEISS BELT

43 **Felsic igneous rocks:** tonalite, granodiorite, monzonite, granite, syenite; derived gneisses

42 **Anorthosite and alkalic igneous rocks:** anorthosite, anorthositic gabbro, gabbro and related gneisses, nepheline syenite, alkalic syenite

41 **Migmatitic rocks and gneisses of undetermined protolith:** commonly layered biotite gneisses and migmatites; locally includes quartzofeldspathic gneisses, orthogneisses, paragneisses

40 **Mafic rocks:** amphibolite, gabbro, diorite, mafic gneisses

39 **Gneisses of metasedimentary origin:** quartzofeldspathic gneisses, pelitic to semi-pelitic gneisses, calc-silicate gneisses, minor quartzite, minor marble and marble breccia

SOUTHERN and SUPERIOR[h] PROVINCES

EARLY PALEOZOIC TO NEOPROTEROZOIC (443.7 Ma to 1.0 Ga)

38 **Carbonate-alkalic intrusive suite (443.7 Ma to 600 Ma):** carbonatite, nepheline syenite, alkalic syenite, ijolite, fenite; associated mafic and ultramafic intrusions

38a Intrusions of uncertain age

37 **Mafic intrusive rocks[i]**

37a Grenville or Rideau mafic dike swarm (575-590 Ma)
37b Frontenac mafic dike swarm (circa 1160 Ma)
37c Gabbro, diorite, ultramafic rocks, and granophyre

MESOPROTEROZOIC (1.0 Ga to 1.6 Ga)

UPPER KEWEENAWAN SUPERGROUP (<1086 Ma)

36 **Sandstone, shale, conglomerate:** Jacobsville Gp.; Oronto Gp

INTRUSIVE CONTACT

35 **Alkalic intrusive suite and carbonatite (circa 1.1 to 1.2 Ga):** alkalic syenite, ijolite, nepheline syenite, fenite, associated mafic and ultramafic rocks, and minor carbonatite

35a Martison Carbonatite Complex

34 **Mafic dikes and related intrusive rocks (Keweenawan age)[i] (circa 1.1 to 1.2 Ga)**

34a Logan and Nipigon mafic sills (circa 1100-1115 Ma)
34b Mafic sills and dikes (circa 1130-1180 Ma), including the Mine Centre dike (circa 1137±20 Ma), the Empey Lake dike (circa 1178±31 Ma), and the Kipling (Abitibi) dike (circa 1140 Ma).
34c Ultramafic, gabbroic and granophyric intrusions (probably related to unit 35)
34d Felsic to intermediate intrusive rocks
34e Abitibi swarm (1141 Ma) mafic dikes

Mafic intrusive rocks[i] and mafic dikes

33a Mackenzie mafic dike swarm (1267 Ma)
33b Sudbury mafic dike swarm (circa 1235-1238 Ma)

MIDDLE AND LOWER KEWEENAWAN SUPERGROUP (1086 to 1107 Ma)

32 **Osler Gp., Mamainse Point Fm., Michipicoten Island Fm.**

32a Basalt and associated conglomerate and arkose
32b Rhyolite, quartz-feldspar porphyry; associated conglomerate and arkose

31 **Sibley Gp. (circa 1.34 Ga):** conglomerate, sandstone, shale

MESO- TO PALEOPROTEROZOIC (1.0 Ga to 2.5 Ga)

30 **Felsic intrusive rocks**

30a Granite, alkali granite, granodiorite, quartz-feldspar porphyry; minor related volcanic rocks[j] (1.5 to 1.6 Ga)
30b Killarney monzogranite and granitic rocks[k] (1.7 and 1.4 Ga)
30c Intermediate to felsic volcanic rocks[k] (1.8 to 1.9 Ga.)

INTRUSIVE CONTACT

PALEOPROTEROZOIC (1.6 Ga to 2.5 Ga)

29 **Sudbury Igneous Complex (1850 Ma):** norite, gabbro, granophyre

29a Granophyre
29b Norite-gabbro, quartz norite, sublayer and offset rocks

28 **Whitewater Gp.[l]:** fragmental rocks, mudstone, wacke

28a Chelmsford Formation: wacke, minor siltstone
28b Onwatin Formation: carbonaceous slate
28c Onaping Formation: lapilli tuff, breccia, felsic flows and intrusions, minor carbonate and chert

27 **Carbonatite-alkalic intrusive suite (circa 1.8 to 1.9 Ga):** carbonatite complexes, nepheline syenite, alkalic syenite, ijolite, fenite; associated mafic and ultramafic rocks

26 **Mafic intrusive rocks[i], mafic dikes and mafic sills**

26a Molson mafic dike swarm (circa 1889 to 1871 Ma) and mafic sills of the Sutton Inliers (circa 1871 Ma)
26b Pickle Crow mafic dike; normally magnetized northwest-trending subswarm (Molson swarm) (circa 1876 Ma)
26c Pickle Crow mafic dike; reversely magnetized northwest-trending subswarm (Molson swarm) (circa 1876 Ma)
26d Mafic dikes and mafic plutons of uncertain age; gabbro, diorite, quartz diorite
26e North Channel mafic dike swarm

INTRUSIVE CONTACT

25 **Trans-Hudson Orogen Supracrustal rocks / sedimentary rocks (Sutton Inliers):** dolostone, chert breccias, argillite, wacke, conglomerate, iron formation

25a Mafic and ultramafic metavolcanic rocks, metasedimentary rocks, differentiated mafic to ultramafic intrusions of the Fox River belt
25b Undifferentiated clastic and carbonate metasedimentary rocks
25c Sutton Inliers – Sutton Ridges Formation: unsubdivided clastic metasedimentary rocks (including wacke, siltstone, argillite, chert breccia and conglomerate), and chert-banded and clastic iron formation
25d Sutton Inliers – Nowashe Formation: carbonate metasedimentary rocks (dolomite, cherty dolomite, stromatolitic dolomite, argillaceous dolomite)
25e Undifferentiated clastic metasedimentary migmatite

24 **Sedimentary rocks (Animikie Group)[m]:** wacke, shale, iron formation, limestone, minor volcanic rocks, conglomerate, taconite, algal chert, carbonate rocks, argillite-tuff

24a Rove Formation: argillite, shale, wacke, minor volcanic rocks
24b Gunflint Formation: conglomerate, taconite, algal chert, chert, carbonate rocks, argillite-tuff

23 **Mafic and related intrusive rocks[i] and mafic dikes**

23a Marathon mafic dike; north-northwest to north-northeast-trending subswarm (circa 2101 to 2126 Ma)
23b Fort Frances mafic dike; northwest-trending subswarm (circa 2075 Ma)
23c Marathon, Kapuskasing or Biscotasing mafic dike; northeast-trending subswarm (circa 2101-2126 or circa 2167-2171 Ma)
23d Nipissing mafic sills (2219 Ma): mafic sills, mafic dikes and related granophyre
23e Biscotasing mafic dike; north-northeast-trending swarm (circa 2167-2171 Ma)
23f Mafic dikes of uncertain age
23g Mafic plutons of uncertain age

22 **Felsic intrusive rocks (Murray Granite 2388 Ma, Creighton Granite 2333 Ma):** granite

HURONIAN SUPERGROUP (2.2 Ga to 2450 Ma)

21 **Cobalt Gp.[n]:** siltstone, argillite, sandstone, conglomerate

21a Bar River Formation: quartz sandstone, hematitic sandstone, sandstone
21b Gordon Lake Formation: siltstone, argillite, sandstone
21c Lorrain Formation: quartz sandstone, minor conglomerate, siltstone
21d Gowganda Formation: conglomerate, sandstone, siltstone, argillite

20 **Quirke Lake Gp.:** sandstone, siltstone, conglomerate, limestone, dolostone

20a Serpent Formation: quartz-feldspar sandstone, sandstone with minor siltstone, calcareous siltstone and conglomerate
20b Espanola Formation: limestone, dolostone, siltstone, sandstone
20c Bruce Formation: conglomerate with minor sandstone and siltstone

19 **Hough Lake Gp.:** siltstone, wacke, argillite, quartz-feldspar sandstone, conglomerate, sandstone

19a Mississagi Formation: quartz-feldspar sandstone, argillite and conglomerate
19b Pecors Formation: siltstone, argillite, wacke, minor sandstone
19c Ramsay Lake Formation: conglomerate, minor sandstone, siltstone

18 **Elliot Lake Gp.:** siltstone, wacke, argillite, quartz-feldspar sandstone, conglomerate, mafic, intermediate and felsic metavolcanic rocks, intercalated metasedimentary rocks and epiclastic rocks

18a McKim Formation: siltstone, wacke, argillite
18b Matinenda Formation: quartz-feldspar sandstone, conglomerate, sandstone
18c Volcanic rocks: includes mafic, intermediate and felsic metavolcanic rocks, intercalated metasedimentary rocks and epiclastic rocks

INTRUSIVE CONTACT

17 **Mafic and ultramafic intrusive rocks and mafic dikes**

17a Matachewan mafic dike swarm (circa 2454 Ma)
17b Gabbro, anorthosite

SUPERIOR PROVINCE

ARCHEAN (2.5 Ga to <3.85 Ga)

NEOARCHEAN (2.5 Ga to 2.8 Ga)

INTRUSIVE CONTACT

16 **Hornblendite - nepheline syenite suite[go]:** pyroxenite, diorite, monzonite, syenite, nepheline syenite (saturated to undersaturated suite)

- 16a Hornblendite, pyroxenite
- 16b Gabbro, diorite, monzonite
- 16c Syenite, nepheline and/or foid-bearing syenite

NEO- TO MESOARCHEAN (2.5 Ga to 3.2 Ga)[egop]

INTRUSIVE CONTACT

15 **Massive granodiorite to granite:** massive to foliated granodiorite to granite

- 15a Potassium feldspar megacrystic units

14 **Diorite-monzodiorite-granodiorite suite:** diorite, quartz diorite, minor tonalite, monzonite, granodiorite, syenite and hypabyssal equivalents (saturated to oversaturated suite)

- 14a Diorite, monzonite, quartz monzonite
- 14b Granodiorite, granite
- 14c Syenite

13 **Muscovite-bearing granitic rocks:** muscovite-biotite and cordierite-biotite granite, granodiorite-tonalite

12 **Foliated tonalite suite:** tonalite to granodiorite - foliated to massive

- 12a Biotite tonalite to granodiorite
- 12b Hornblende tonalite to granodiorite

11 **Gneissic tonalite suite:** tonalite to granodiorite - foliated to gneissic - with minor supracrustal inclusions

10 **Mafic and ultramafic rocks[q]:** gabbro, anorthosite, ultramafic rocks

- 10a Gabbro
- 10b Anorthosite
- 10c Ultramafic rocks

INTRUSIVE CONTACT

NEOARCHEAN (2.5 Ga to 2.8 Ga)

SUPRACRUSTAL ROCKS

9 **Coarse clastic metasedimentary rocks[r]:** mainly coarse clastic metasedimentary rocks, with minor, mainly alkalic, mafic to felsic metavolcanic flows, tuffs and breccias

- 9a Metasedimentary rocks: conglomerate, arkose, arenite, wacke, sandstone, siltstone, argillite
- 9b Alkaline metavolcanic rocks: mafic to felsic metavolcanic flows, tuffs and breccias

NEO- TO MESOARCHEAN (2.5 Ga to 3.2 Ga)

SUPRACRUSTAL ROCKS

8 **Migmatized supracrustal rocks[eg]:** metavolcanic rocks, minor metasedimentary rocks, mafic gneisses of uncertain protolith, granitic gneisses

7 **Metasedimentary rocks[eg]:** wacke, siltstone, arkose, argillite, slate, mudstone, marble, chert, iron formation, minor metavolcanic rocks, conglomerate, arenite, paragneiss, migmatites

- 7a Wacke, siltstone, arkose
- 7b Argillite, slate, mudstone
- 7c Marble, chert, iron formation, minor metavolcanic rocks
- 7d Conglomerate and arenite
- 7e Paragneiss and migmatites[s]

6 **Felsic to intermediate metavolcanic rocks[gt]:** rhyolitic, rhyodacitic, dacitic and andesitic flows, tuffs and breccias, chert, iron formation, minor metasedimentary and intrusive rocks; related migmatites

- 6a Dacitic and andesitic flows, tuffs and breccias
- 6b Rhyolitic, rhyodacitic flows, tuffs and breccias

5 **Mafic to intermediate metavolcanic rocks[gt]:** basaltic and andesitic flows, tuffs and breccias, chert, iron formation, minor metasedimentary and intrusive rocks, related migmatites

- 5a Andesitic flows, tuffs and breccias with minor rhyolites[u]
- 5b Basaltic and andesitic flows, tuffs and breccias

4 **Mafic to ultramafic metavolcanic rocks[gt]:** mafic metavolcanic and basaltic rocks with minor komatiitic flows, metasedimentary and pyroclastic rocks

4a Ultramafic metavolcanic rocks
4b Mafic metavolcanic rocks, metasedimentary rocks and pyroclastic rocks

MESOARCHEAN (2.8 Ga to 3.2 Ga)[v]

SUPRACRUSTAL ROCKS

3 **Mafic metavolcanic and metasedimentary rocks[tw]:** mafic metavolcanic rocks, minor iron formation

2 **Felsic to intermediate metavolcanic rocks[t]:** rhyolitic, rhyodacitic, dacitic and andesitic flows, tuffs and breccias

1 **Metasedimentary rocks and mafic to ultramafic metavolcanic rocks[tw]:** coarse clastic metasedimentary rocks, marble, quartz arenite, iron formation, komatiite, mafic metavolcanic rocks, and minor felsic metavolcanic rocks

a - The letter "G" preceding a map unit number indicates lithologic information interpreted from geophysical data.

b - Phanerozoic stratigraphic nomenclature varies in the level of detail to match the variable level of detail displayed on the map face.

c - Unassigned.

d - Subdivisions of Precambrian geologic time and units characterized by a range of ages are cited in terms of Ga. The subdivisions of geologic time correspond to international standards. All ages of individual units cited in the legend are based on high precision U/Pb zircon ages, and are cited in terms of Ma.

e - Granulite grade units are shown by screened overprint.

f - The rocks of the Central Granulite Terrane in Quebec are coded in a lithologic sense only and represent units of ca. 1050 to 1150 Ma in age. Equivalents of these rocks are not known to be present in Ontario.

g - Rocks in these groups are subdivided lithologically. The order does not imply age relationship within or among groups.

h - This part of the legend describes Proterozoic units of the Southern Province, and those Proterozoic units within the Superior Province. Most diabase dike and alkalic intrusive rock map units listed for the Grenville Province cut Grenville and Southern provinces; therefore, they are listed in the Southern Province part of the legend.

i - A generalized distribution of diabase dikes is shown. Some individual swarms occur in more than one geological province.

j - This unit has a geographic distribution from the west shore of Lake Nipigon to the north shore of Lake Huron, including the Cutler, Chief Lake, Croker Island, English Bay and Manitoulin granites.

k - This unit includes the Killarney and related granitoids and equivalent metavolcanic units, as well as the Killarney area granitoids.

l - This unit includes the Chelmsford, Onwatin and Onaping formations.

m - This unit includes the Gunflint and Rove formations.

n - This unit includes the Gowganda, Lorrain, Gordon Lake and Bar River formations.

o - This unit was formerly classified as Algoman and/or Laurentian. Units 13, 14 and 15 are mainly Neoarchean except in areas of the Sachigo Subprovince, where some examples of Mesoarchean age occur.

p - The intrusive rocks of Archean age range from approximately 2.65 Ga to 3.2 Ga.

q - This unit was formerly classified as Haileyburian.

r - This unit was formerly classified as Timiskaming. This unit comprises fluvial to marine metasedimentary rocks with minor, commonly alkalic, metavolcanic rocks that locally unconformably overlie units 1 to 6. They have generally only undergone the late deformation common in greenstone belts.

s - These units are shown only in the English River and Quetico subprovinces.

t - This unit was formerly classified as Keewatin. Most of these sequences range in age from 2.7 Ga to 2.8 Ga, based on U/Pb zircon ages.

u - These units are large enough to show at the map scale only within the Abitibi Subprovince, forming the Blake River Group and units south of Lake Abitibi.

v - The units under this heading include those greenstone belts that are older than 2.9 Ga, based on U/Pb zircon chronology. All other Archean greenstone sequences have been placed in the Neo- to Mesoarchean subdivision of the legend.

w - This unit comprises those greenstone sequences in which shallow-water supermature sediments (quartz arenites, shallow-water carbonates) have been identified. This type of unit unconformably overlies older granitoid rocks in the Steeprock Lake area, and notably in older greenstone belts in the North Caribou Lake region.

x - Number codes subdivided into a, b, c, etc., are generally arranged—especially for Proterozoic units—from younger to older.

Additional Notes

This compilation represents the Ontario Geological Survey's current interpretation of the Precambrian bedrock geology. The primary goal in creating this theme was to create a seamless product providing blanket coverage of the province. The understanding of Ontario's Precambrian geology will grow with the knowledge acquired through core business-unit-related geoscience studies.

This digital theme was prepared for the sole purpose of portraying the bedrock geology of Ontario at 1:250 000 scale. It can not be used for any other purpose. Use of this theme is governed by the following principles:

1. The theme is scale dependent. Use of the information on this theme at any scale larger than 1:250 000 is unwarranted and will result in erroneous conclusions.

2. To enable the rapid dissemination of information, this digital theme has not received a thorough technical edit. Discrepancies may occur for which the Ministry of Northern Development, Mines and Forestry does not assume liability. The digital theme does not fully portray the complex geology of Ontario and users should verify critical information.

3. The OGS is continually collecting, synthesizing and compiling new data throughout the province. Users should be aware that the digital theme was current at time of posting, but new information may substantially change the interpretation in any area. Users should verify the currency of data in any area before proceeding.

4. The digital theme was prepared from the 1:250 000 manuscript *Geology of Ontario* maps created between 1986 and 1990. These maps were updated within the confines of the available time with information collected post–1990. No attempt was made to check source material published prior to the creation of the manuscript maps.

5. The geology was subdivided to aid identification of economically important rock units.

Numerical subdivisions of the Geological time scale are from the International Commision on Stratigraphy, International Stratigraphic Chart (http://www.stratigraphy.org/upload/ISChart2009.pdf) , August 2009.

Users of OGS products are encouraged to contact those Aboriginal communities whose traditional territories may be located in the mineral exploration area to discuss their project.

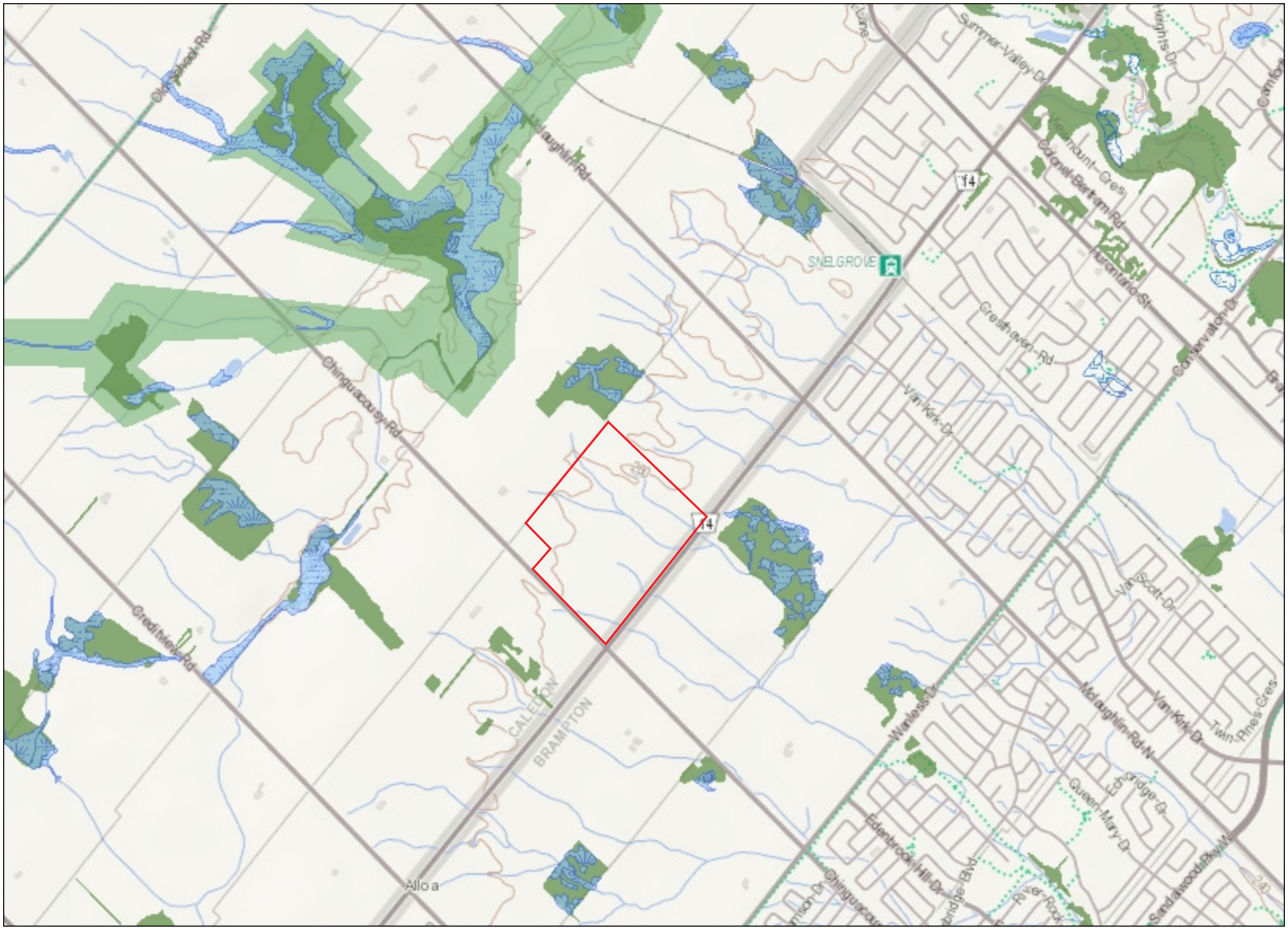
Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

Natural Heritage Areas

Notes:
Phase One ESA
FE-P 18-9184-C



Legend

- Assessment Parcel
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System
- Ecoregion

Wetland
- Provincially Significant Wetland Evaluated
- Non - Provincially Significant Wetland Evaluated
- Unevaluated Wetland

Area of Natural Heritage & Scientific Interest (ANSI)
- Provincially Significant Life Science ANSI
- Provincially Significant Earth Science ANSI

Greenbelt Plan
- Boundary
- River Valley Connections

Land Use Designations
- Protected Countryside
- Towns and Villages
- Hamlets
- Urban River Valley
- Specialty Crop Area

Niagara Escarpment Plan (NEP)
- Boundary
- Parks and Open Space System

Land Use Designations
- Escarpment Natural Area
- Escarpment Protection Area
- Escarpment Rural Area
- Mineral Resource Extraction Area
- Escarpment Recreation Area
- Urban Area
- Minor Urban Centre

Oak Ridges Moraine Conservation Plan (ORM)
- Boundary

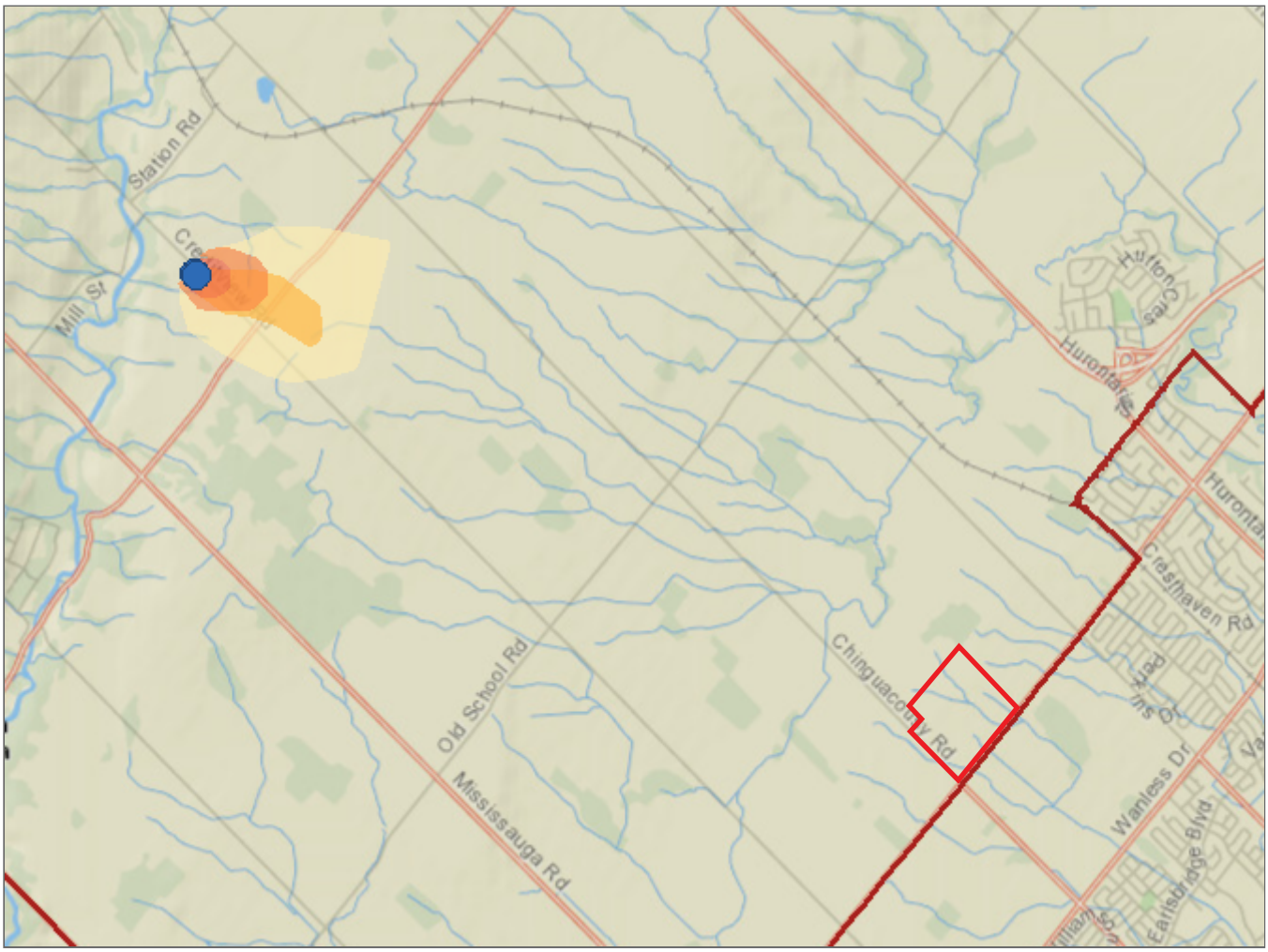
Land Use Designations
- Natural Core Area
- Natural Linkage Area
- Countryside Area
- Rural Settlement
- Palgrave Estates Residential Community
- Settlement Area

0 1.3 km

Projection: Web Mercator

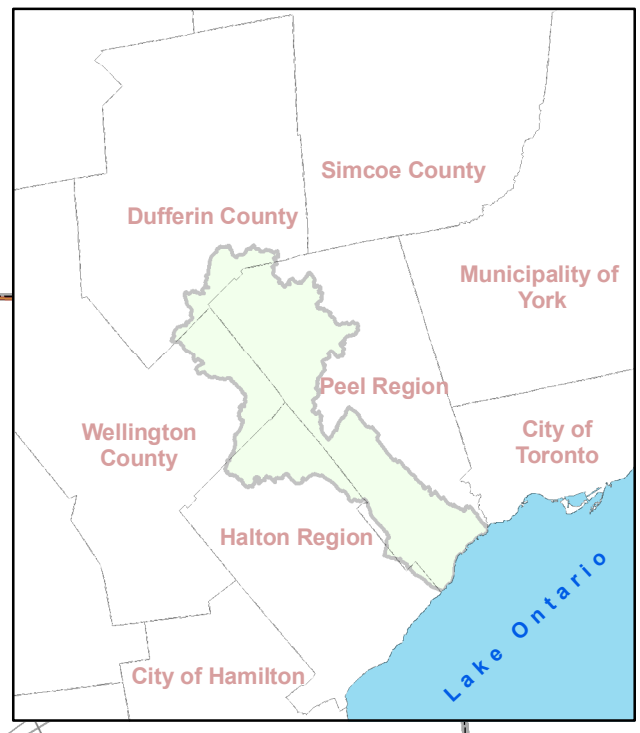
(Figure 13) Wellhead Protection Areas in Peel Region (October 2014)

Map of Wellhead Protection Areas located in the Regional Municipality of Peel (2012).



Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

The Credit Valley Conservation Watershed



Sub #	Subwatershed Name
1	Loyalist Creek
2	Carolyn Creek
3	Saw mill Creek
4	Mullett Creek
5	Fletcher's Creek
6	Levi Creek
7	Huttonville Creek
8a	Springbrook Tributary
8b	Churchville Tributary
9	Norval to Port Credit
10	Black Creek
11	Silver Creek
12	Credit River - Cheltenham to Glen Williams
13	East Credit River
14	Credit River - Glen Williams to Norval
15	West Credit River
16	Caledon Creek
17	Shaw 's Creek
18	Credit River - Melville to Forks of the Credit
19	Orangeville
20	Credit River - Forks of the Credit to Churchville
21	Lake Ontario Shoreline West Tributaries
22	Lake Ontario Shoreline East Tributaries

WHO WE ARE

The Credit River watershed is comprised of 1,000 square kilometers of land, drained by the Credit River and its 1,500 kilometers of tributaries. It is located in one of the most rapidly urbanizing parts of Canada, within the Greater Toronto area. The river's headwaters are located above the Niagara Escarpment. This area is the source of four rivers: the Credit, Humber, Etobicoke and Nottawasaga. A small part of the Oak Ridges Moraine, as well as a number of other moraines are located within the watershed's boundary.

WHAT IS A WATERSHED?

A watershed is an area of land that drains into a river or a lake. The boundary of a watershed is based on the elevation of a landscape. A drop of water that lands anywhere inside this boundary will eventually end up at the Credit River, before emptying into Lake Ontario. This determination of oundaries is based on the natural shape of the land and therefore the watershed falls across many municipal boundaries. Credit Valley Conservation helps to manage the natural resources found in the Credit River watershed.

WHAT IS A SUBWATERSHED?

A smaller basin within a larger drainage area where all of runoff or base flow drains to a central point of the larger watershed is called subwatershed. Fletcher Creek drains runoff and baseflow from surrounding areas and brings into the central point of the watershed or the Credit River.

0 1 2 4 6 8 Km

CVC Boundary
Subwatersheds
Lakes and Ponds
Rivers and Streams

Major Transportation Network
Highway
Major road
Railroad

How can we help y

Search

contact us Français
Popular +

Trending Now

- Ontario Public Service careers
- OSAP: Ontario Student Assistance Program
- Government services
- Outdoors Cards, Licences and Draws
- Renew a licence plate sticker
- Change the address on identification cards
- Driving and Roads

Map: Well records

This map allows you to search and view well record information from reported wells in Ontario.

Full dataset is available in the Open Data catalogue.

You may search by **Well ID**, **Well Tag #** or see help for advanced options.

Search Clear

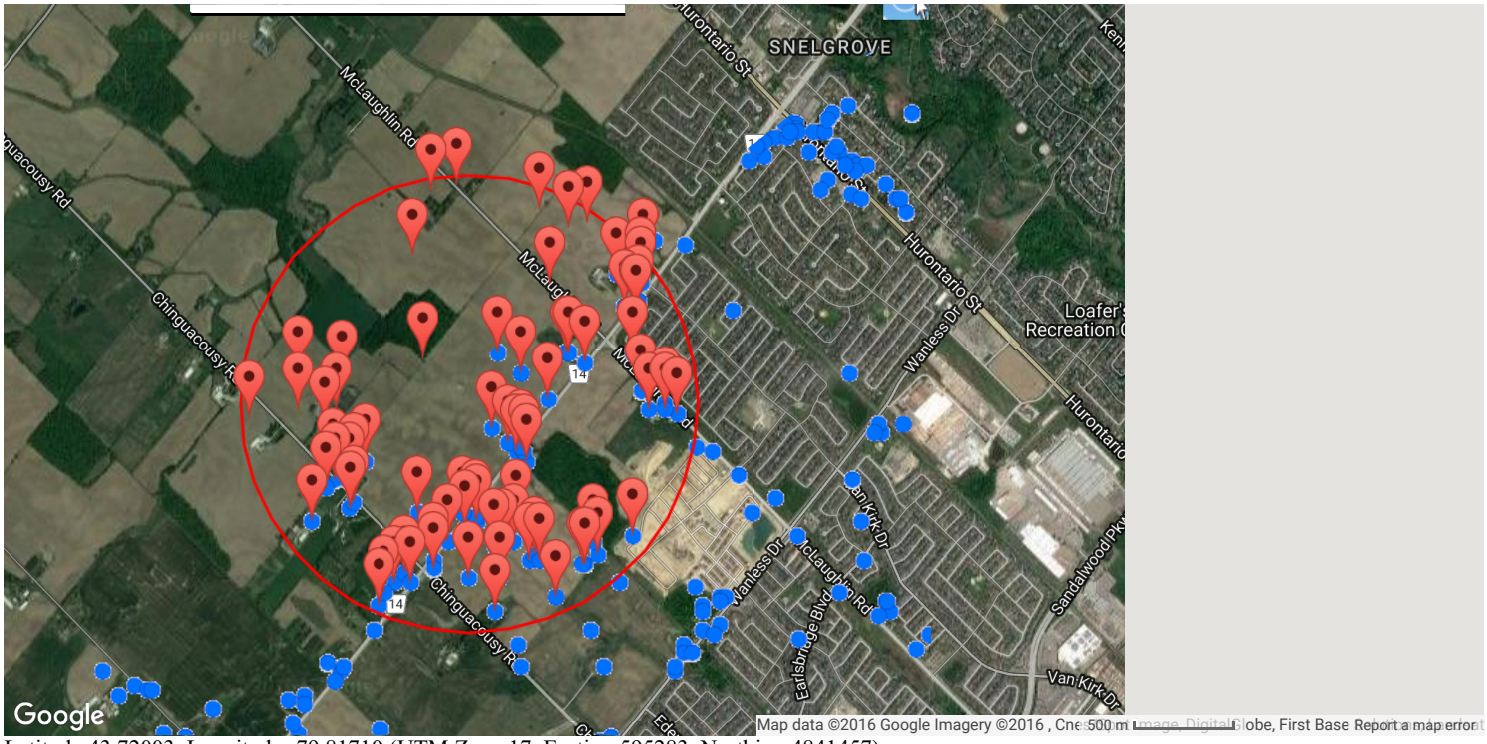
Search current map display only

*Your search returns **85** well records, which are displayed as red pins over blue dots.*

Recommended for you

How to use a Ministry of the Environment map

Technical documentation: Metadata record



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Show 100 ▾ **entries** **Search:**

Well ID	Well Record Information	Well Tag # (since 2003)	Audit #	Contractor Lic#	Well Depth (m)	Date of Completion (MM/DD/YYYY)
4901603	PDF|HTML	N/A	N/A	1307	10.4	08/14/1962
4901615	PDF|HTML	N/A	N/A	1612	30.8	10/13/1962
4901619	PDF|HTML	N/A	N/A	1612	30.5	11/26/1963
4901715	PDF|HTML	N/A	N/A	1307	7.3	06/21/1961
4901717	PDF|HTML	N/A	N/A	2801	48.8	01/22/1964
4901718	PDF|HTML	N/A	N/A	4838	24.1	07/06/1959
4901719	PDF|HTML	N/A	N/A	1325	19.2	07/26/1962
4901833	PDF|HTML	N/A	N/A	1325	17.7	12/02/1963
4901834	PDF|HTML	N/A	N/A	1325	18.3	11/18/1959
4904557	PDF|HTML	N/A	N/A	3513	25.3	06/17/1974
4904660	PDF|HTML	N/A	N/A	2918	24.4	05/19/1975
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4905535	PDF|HTML	N/A	N/A	3349	26.2	11/13/1978
4905550	PDF|HTML	N/A	N/A	3637	24.1	07/25/1978
4905551	PDF|HTML	N/A	N/A	3637	20.4	07/20/1978
4905741	PDF|HTML	N/A	N/A	4919	18.3	07/12/1980
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4907003	PDF|HTML	N/A	43011	1660	19.8	10/19/1988
4907073	PDF|HTML	N/A	37250	4005	17.4	03/17/1987
4907105	PDF|HTML	N/A	47117	4919	30.5	03/10/1989
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4908331	PDF|HTML	N/A	187552	1660	16.2	12/12/1997
4908346	PDF|HTML	N/A	177754	2552	7.9	11/04/1997
4908803	PDF|HTML	N/A	219347	6300	26.2	05/18/2001
4910186	PDF|HTML	_NO_TAG	Z38414	6865	24.0	03/08/2006
4910258	PDF|HTML	A038077	Z42507	7143	37.2	06/27/2006
4910312	PDF|HTML	A038082	Z42473	7143	N/A	07/05/2006
7041323	PDF|HTML	A040592	Z45182	3349	18.3	12/30/2006
7041758	PDF|HTML	N/A	Z30639	3108	4.9	02/01/2007
7044484	PDF|HTML	N/A	Z65718	7147	N/A	05/23/2007
7044485	PDF|HTML	N/A	Z65716	7147	N/A	05/23/2007

Well ID	Well Record Information	Well Tag # (since 2003)	Audit #	Contractor Lic#	Well Depth (m)	Date of Completion (MM/DD/YYYY)
7044486	PDF|HTML	N/A	Z65717	7147	N/A	05/23/2007
7052303	PDF|HTML	A062223	Z69282	6809	6.1	10/24/2007
7127670	HTML	A081319	M04311	6607	N/A	02/09/2009
7131414	PDF|HTML	N/A	Z103953	4011	N/A	10/01/2009
7172582	PDF|HTML	A084005	Z121224	6032	7.6	09/14/2011
7179242	HTML	A116949	C16470	7360	N/A	10/25/2011
7181652	PDF|HTML	N/A	Z143659	4645	N/A	04/24/2012
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7184153	PDF|HTML	A133011	Z149180	7360	15.2	06/15/2012
7224621	HTML	A142408	Z163836	7215	N/A	02/01/2014
7224622	HTML	A142409	Z163842	7215	N/A	02/04/2014
7224623	HTML	A142413	Z163846	7215	N/A	02/04/2014
7224625	HTML	A128843	Z163845	7215	N/A	02/04/2013
7238722	PDF|HTML	N/A	Z190760	7523	N/A	11/09/2014
7243039	HTML	A175716	C29610	7437	N/A	04/13/2015
7244481	HTML	A138167	Z194236	6032	6.1	04/29/2015
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7262569	HTML	A201516	Z230588	7472	7.6	01/28/2016
7262570	HTML	A201517	Z230587	7472	16.8	01/28/2016
7262571	HTML	A202625	Z230586	7472	13.7	01/28/2016
7262572	HTML	A202626	Z230585	7472	7.6	01/28/2016
7262573	HTML	A202642	Z230591	7472	9.1	01/28/2016
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7265663	HTML	A206202	Z235418	7472	N/A	02/26/2016
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7265670	HTML	A206193	Z235428	7472	N/A	02/26/2016
7265672	HTML	A206192	Z235425	7472	N/A	02/26/2016

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Minister of the Environment and Climate Change

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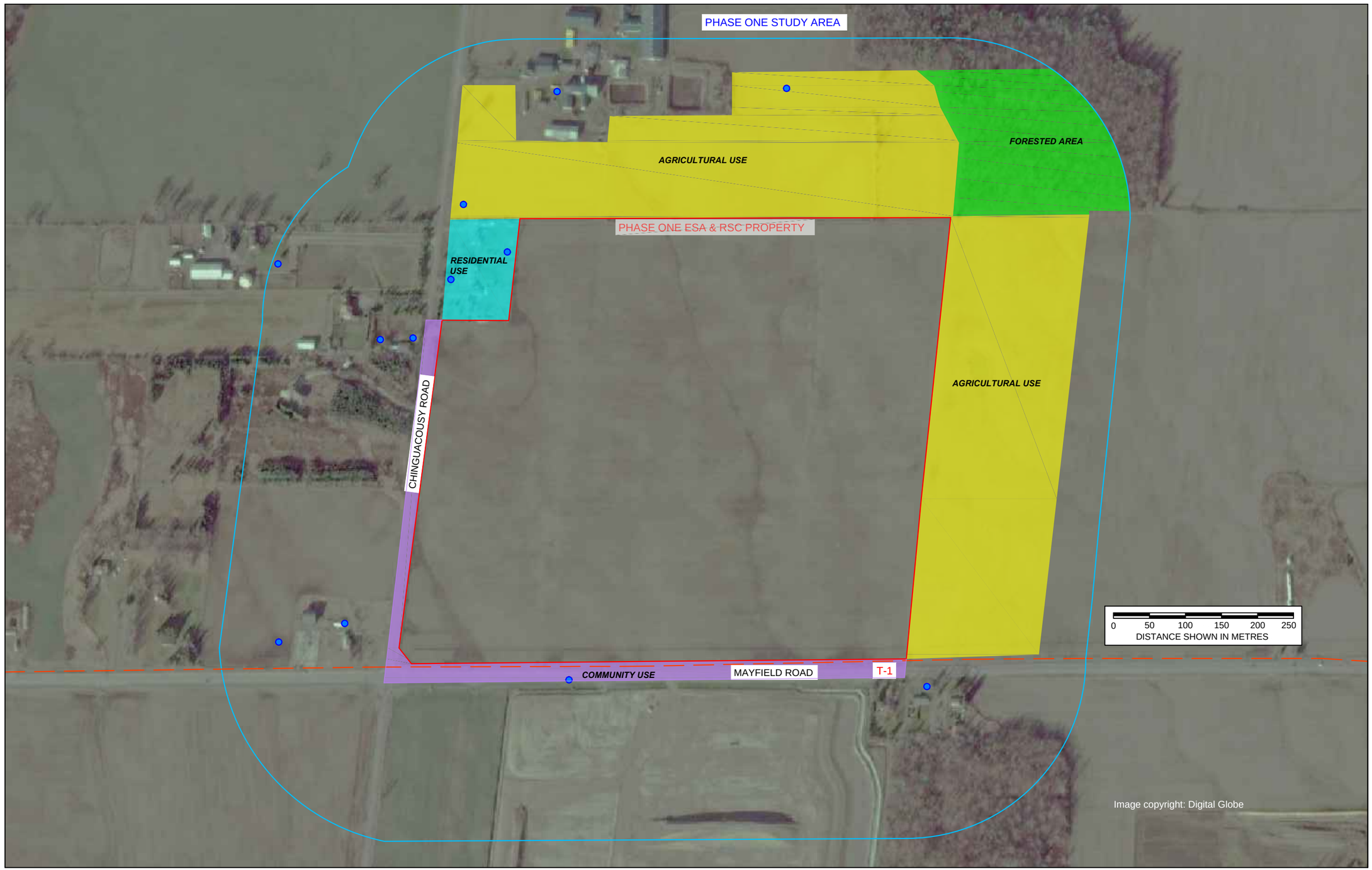
ABOUT ONTARIO

APPENDIX D – CONCEPTUAL SITE MODEL PLANS AND DIAGRAMS



Fisher Environmental Ltd.
400 Esna Park Dr., #15
Markham, Ontario
L3R 3K2
Tel: 905 475-7755
Fax: 905 475-7718

KEY PLAN

LEGEND

- Off-Site Subsurface Utilities
- T-1 Transport Pathways
- Drinking Water Wells

Property Use (O.Reg. 153/04)

- Agricultural or Other: Agricultural
- Agricultural or Other: Forested
- Community: Roadway
- Residential

PROJECT NAME AND ADDRESS

PHASE ONE ESA

Mayfield Station Development Property
Part of Lot 18, Concession 2 (WHS),
Caledon, ON

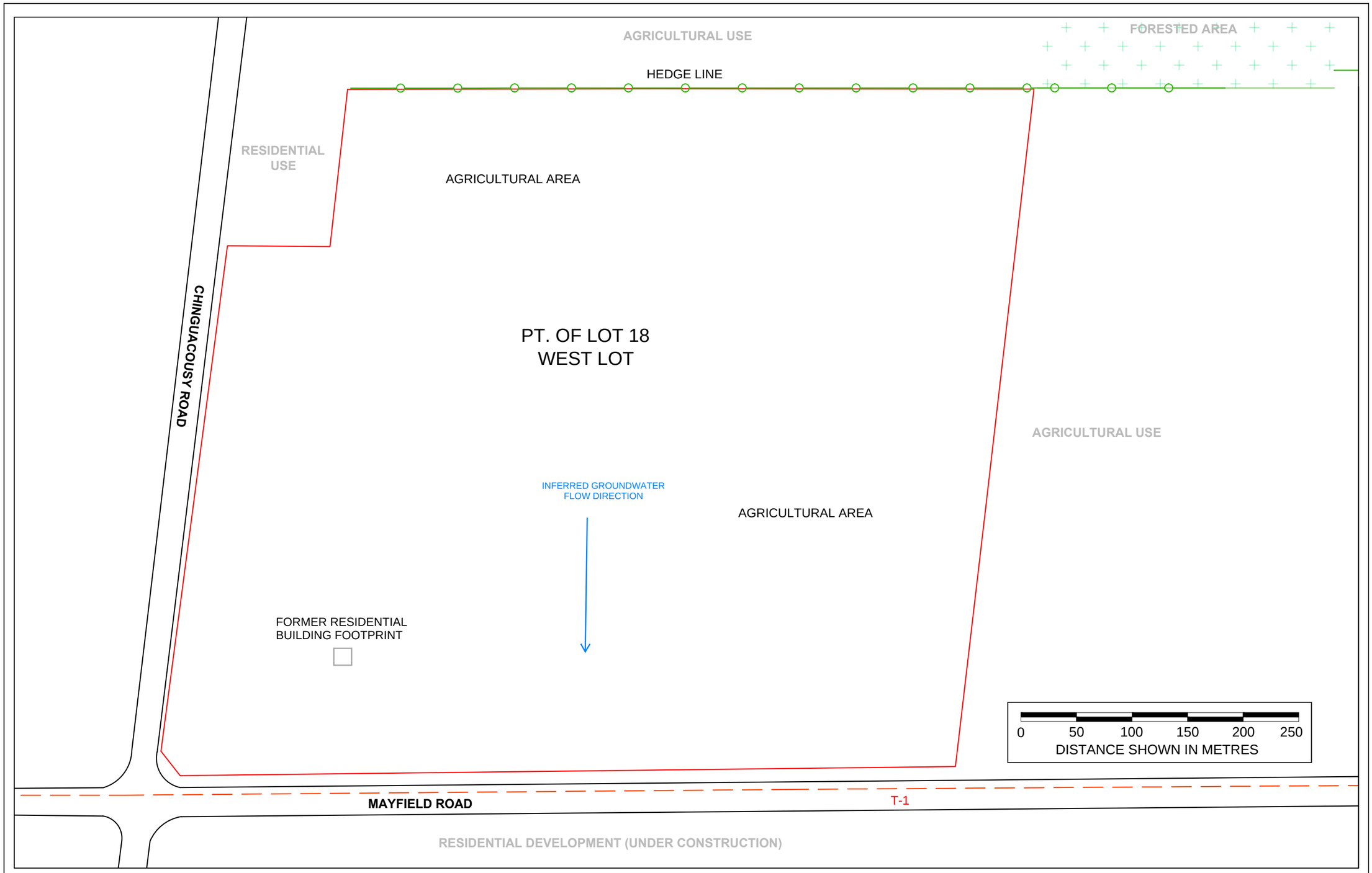
PROJECT NO.
FE-P 18-9184

DATE
7 December 2018

SCALE
As Shown

FIGURE 1:

Site Plan of Phase One Study Area



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KEY PLAN

LEGEND

— — Off-Site Subsurface Utilities

T-1 Transport Pathways

PROJECT NAME AND ADDRESS

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Caledon, ON

PROJECT NO.
FE-P 18-9184

DATE
7 December 2018

SCALE
As Shown

FIGURE 2:

Site Plan of Phase One ESA Property