



REPORT

Phase One Environmental Site Assessment

3809 Borrisokane Road, Ottawa, ON

Submitted to:

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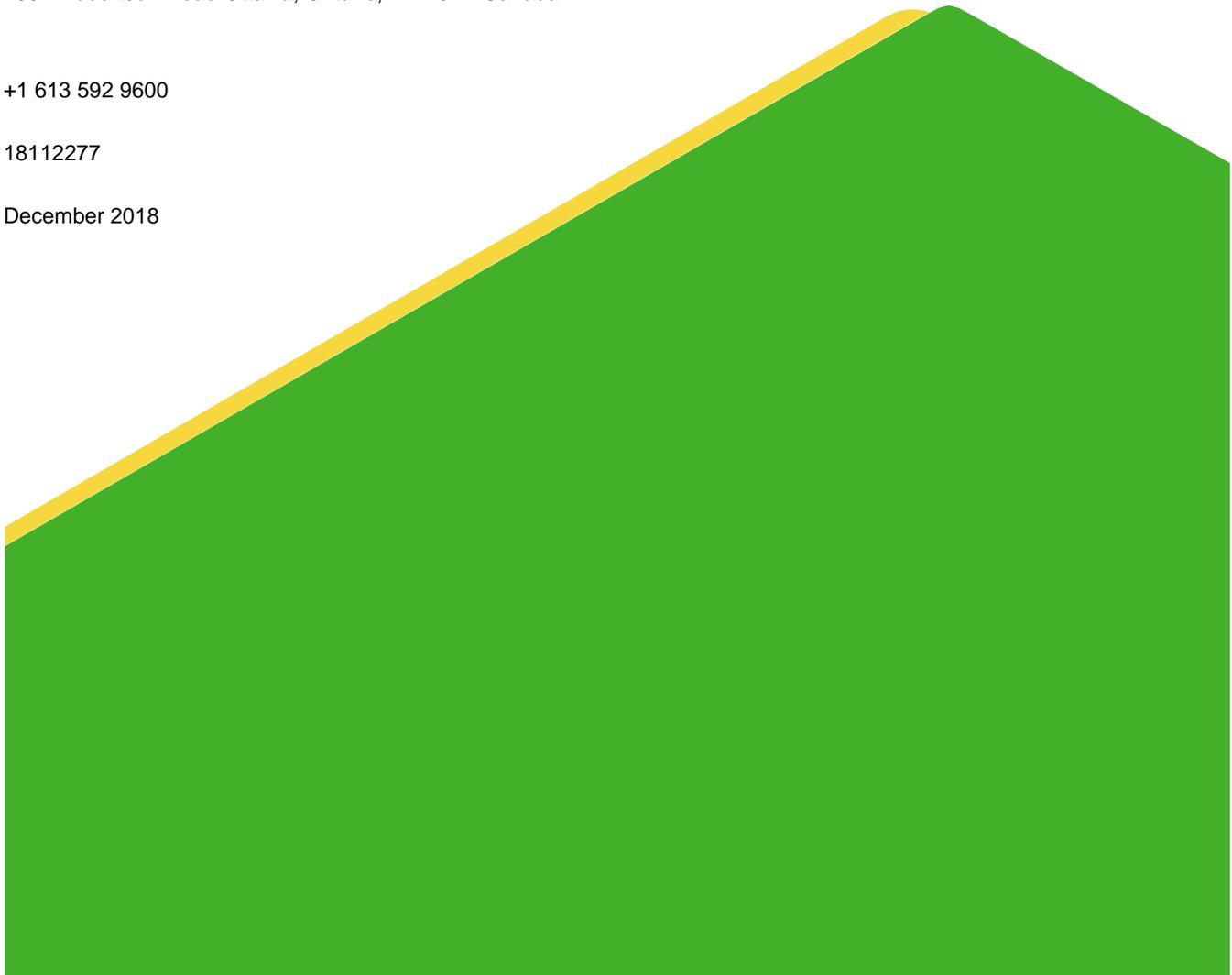
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Executive Summary

The Executive Summary highlights key points from the report only; for complete information and findings, as well as the limitations, the reader should examine the complete report.

Golder Associates Ltd. (Golder) was retained by Caivan Brazeau Development Corporation (Caivan) to conduct a Phase One Environmental Site Assessment (Phase One ESA) for the property located at 3809 Borrisokane Road in Ottawa, hereafter referred to as the “Site” or “Phase One Property”. The Site covers an area of 37.8 hectares (93.4 acres) and is located north of Barnsdale Road and east of Veterans Memorial Highway (“ON 416”) in Ottawa, Ontario, as shown in Figure 1.

Given that the land use of the Site was industrial since first development as it was used as a sand pit and the Site will be developed for mixed use (commercial and residential use), change of property use from less sensitive to more sensitive warrants mandatory requirement for filing of a Record of Site Condition (RSC) pursuant to *Ontario Regulation 153/04 – Records of Site Condition – Part XV.1 of the Act*, made under the *Environmental Protection Act* for the Site from a provincial regulation (O.Reg. 153/04) standpoint. As such, this Phase One ESA was completed in accordance with Ontario Regulation 153/04

At the time of the Site visit conducted on November 13, 2018, the Site was located immediately east of ON 416 and north of Barnsdale Road. The Site is currently vacant; however, was previously used for sand extraction since at least 1967 (considered industrial land use). The Phase One Property can be accessed using asphalt paved driveway located on the southwest corner of the Site off of Borrisokane Road. The southwest portion of the Site also consist of a scale office building and a large shed used for tool and/or equipment storage. Along the north, east and west Site perimeters, stockpiles and windrows of excavated materials were observed, whereas tree coverage was observed along the south Site perimeter. The main excavation area was located on the eastern portion of the Site whereas the western portion mainly consists of light vegetation cover, based on limited visibility due to snow cover. The surrounding properties to the Site included residential and commercial activities including an active sand pit immediately north of the Site.

Stockpiles of fill materials were observed throughout the Site at the time of the Site visit; however, were generated as part of the extraction and screening activities on-Site and did not include any imported materials. Two stockpiles (one each of red clay bricks and concrete debris) were observed on the excavation floor although were not used for backfilling purposes according to the Site Representative. These are considered waste materials that needs to be managed and if removed would not be considered fill materials of unknown quality and origin with respect to O.Reg. 153/04.

Based on the information obtained and reviewed as part of this Phase One ESA, no on-Site PCAs were identified. An off-Site PCA was identified in association with the Site; however, based on available information and observations made during the Site visit, this off-Site PCA is not considered to be represent an APEC for the Phase One Property. Although the Site is formerly and/or currently used for any industrial activities (sand pit) which would trigger the need for a Phase II ESA, section 32(3)a of the O.Reg. 153/04, a Phase Two ESA is not required for industrial Sites, where with the sole industrial use is associated with quarrying to excavate consolidated or unconsolidated aggregate. As such, no Phase Two ESA is recommended for the Site.

At the time of preparation of this report, a response to Golder's request for information had not been received from the MECP and MNRF. However, based on the body of information acquired, it is considered that the absence of this information should not likely affect the conclusion of the Phase One ESA. There were no material deviations to the Phase One ESA requirements set out in O.Reg. 153/04 that would cause uncertainty or absence of information that would affect the validity of the Phase One Conceptual Site Model or the findings of this Phase One ESA. Furthermore, Golder will review the responses to these regulatory requests upon their receipt and should the response affect the findings of this Phase One ESA, it will be forwarded to the Client.

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1.0 INTRODUCTION

1.1 Phase One Property Information

Golder Associates Ltd. (Golder) was retained by Caivan Brazeau Development Corporation (Caivan) to conduct a Phase One Environmental Site Assessment (Phase One ESA) for the property located at 3809 Borrisokane Road in Ottawa, hereafter referred to as the “Site” or “Phase One Property”. The Site covers an area of 37.8 hectares (93.4 acres) and is located north of Barnsdale Road and east of Veterans Memorial Highway (“ON 416”) in Ottawa, Ontario, as shown in Figure 1.

Given that the land use of the Site was industrial since first development as it was used as a sand pit and the Site will be developed for mixed use (commercial and residential use), change of property use from less sensitive to more sensitive warrants mandatory requirement for filing of a Record of Site Condition (RSC) pursuant to *Ontario Regulation 153/04 – Records of Site Condition – Part XV.1 of the Act*, made under the *Environmental Protection Act* for the Site from a provincial regulation (O.Reg. 153/04) standpoint. As such, this Phase One ESA was completed in accordance with Ontario Regulation 153/0.

At the time of the Site visit conducted on November 13, 2018, the Site was located immediately east of ON 416 and north of Barnsdale Road. The Site is currently vacant; however, was previously used for sand pit extraction since at least 1967 (considered industrial land use). The Phase One Property can be accessed using asphalt paved driveway located on the southwest corner of the Site off of Borrisokane Road. The southwest portion of the Site consists of a scale office building and a large shed used for tool and/or equipment storage. Along the north, east and west Site perimeters, stockpiles and windrows of excavated materials were observed, whereas tree coverage was observed along the south Site perimeter. The main excavation area was located on the eastern portion of the Site whereas the western portion mainly consists of light vegetation cover, based on limited visibility due to snow cover. The surrounding properties to the Site included residential and commercial activities including an active sand pit immediately north of the Site.

The property information for the Site is as follows:

Municipal Address	3809 Borrisokane Road, Ottawa
Property Identification Number	PIN 045920037
Legal Description	Concession 3 RF with Part of Lot 8; RP5R-13403 Parts 2 and 3; less RP 5R-13374 Part 15 and 16

It is understood that the Phase One Property will be severed for proposed residential developments, as such the future RSC will require an update to the legal description prior to severance. The Site location is provided on Figure 1. A Site plan is provided on Figure 2. A plan of survey for the Phase One Property is provided in Appendix A.

The contact information for the Site is:

Site Owner/Client	Address	Contact Information
Caivan Brazeau Development Corporation	Caivan Communities 2934 Baseline Road, Suite 302 Ottawa, ON K2H 1B2	Andrew Finnsen Office: (343) 998-9395 Email: andrew.finnsen@caivan.com

2.0 SCOPE OF INVESTIGATION

A Phase One ESA is a preliminary qualitative assessment of the environmental condition of a property, based on a review of current activities and historical information for the Site and a review of relevant and readily available environmental information for the surrounding properties located within a 250 metre (“m”) radius of the boundary of the Site (collectively referred to as the “Phase One Study Area”). The boundary of the Phase One Study Area is presented in Figure 2.

According to Ontario Regulation (O.Reg.) 153/04 *Records of Site Condition*, the objectives of a Phase One ESA are to:

- 1) Develop a preliminary determination of the likelihood that one or more contaminants have affected any land or water on, in, or under the Site;
- 2) Determine the need for a Phase Two Environment Site Assessment (ESA);
- 3) Provide a basis for carrying out a Phase Two ESA;
- 4) Provide adequate preliminary information about environmental conditions in the land or water on, in, or under the Site for the conduct of a risk assessment following completion of a Phase Two ESA; and,
- 5) Identify and report on evidence of actual and/or potential contamination on the Site from current and historical activities at the Site or from adjacent properties.

3.0 RECORDS REVIEW

3.1 General

3.1.1 Phase One Study Area Determination

For the purpose of this Phase One ESA, the Phase One Study Area is the area within a 250 m radius of the boundary of the Site. The Phase One Study Area includes another sand pit/quarry facility and undeveloped lands to the north, residential developments to the east, undeveloped lands with tree coverage to the south, and Trail Road landfill facility to the west (across ON 416), of the Site. Based on Golder’s review of the historical and current information compiled as part of this Phase One ESA for the area surrounding the Site and observations of neighbouring properties made during the Site visit, it was concluded that an assessment of information pertaining to properties within 250 m of the boundary of the Site was sufficient to achieve the objectives of the Phase One ESA.

3.1.2 First Developed Use Determination

The date of first developed use of the Phase One Property was determined based on review of the aerial photographs (and GeoOttawa website), ERIS Report and information provided by the Client. Based on the earliest aerial photograph 1946, the Phase One Property was undeveloped and likely used for agricultural purposes. In addition, there was dense tree coverage on the eastern portion of the Site. Subsequent aerial images from at least 1967 and onwards indicate that the Site was developed for quarry activities associated with sand pit extraction and has remained unchanged since. Therefore, it can be determined that the Site was first developed with a sand pit/quarry (industrial land use) between 1956 and 1967 and has not been used for any other purposes since first development.

3.1.3 Fire Insurance Plans

Golder is aware that there are no fire insurance plans (FIPs) related to the Site and the Phase One Study Area based on the relatively recent date of development of the surrounding area. As such, no FIPs were reviewed in relation to the Site.

3.1.4 Chain of Title

From Golder's review of aerial photography and information provided by the Site Representative, the only use of the Phase One Property has been for sand extractions (i.e., sand pit) which occurred since at least 1967 until 2017. Aside from fill materials originating from on-Site extraction being placed on the Site, the Site has been undeveloped, vacant land since this time and is currently owned by Brazmar Limited. Chain of Title information was not ordered as it was deemed that the other information from the records review would satisfy the objectives of the records search and that the information to be provided in a Chain of Title would not contribute additional environmental information relevant to the Phase One ESA.

3.1.5 City Directories

A significant amount of information for the Site and surrounding properties was obtained from the ERIS report, City of Ottawa Historical Land Use Inventory (HLUI), and, aerial photographs discussed in Sections 3.2.1, 3.2.3 and 3.3.1, respectively. As such, city directories for all the properties within Phase One Study Area were not reviewed as they would not likely provide any further information. However, street directories for the Site and 10 adjacent properties for the years 1957, 1962, 1967, 1972, 1977,/78, 1981/82, 1987, 1992, 1996/97, 2001/02, 2006/07 and 2011 were reviewed to understand any activities in the immediate vicinity of the Site. A summary of noteworthy findings of this review is provide below:

- 3809 Borrisokane Road (the Site) was not listed in the city directories for any of the years reviewed;
- 4475 Trail Road (located approximately 174 m west of the Site) was on listed in 1992 city directories as Farry Excavating in 1992, and in 2011 city directories as Power Trail; and
- No other streets and/or addresses were listed in the city directories reviewed.

3.1.6 Environmental Reports

There were no previous environmental investigation reports associated with the Site or surrounding properties with Phase One Study Area available to Golder for review.

3.2 Environmental Source Information

3.2.1 ERIS Report

Golder contracted EcoLog Environmental Risk Information Services Ltd. ("ERIS") to conduct a search of environmental sources, including federal, provincial, and private sector databases, for information on the Phase One Property and Study Area. The ERIS report is provided in Appendix B.

The databases searched included the following:

Federal	Provincial	Private
<ul style="list-style-type: none"> ■ Contaminated Sites on Federal Land ■ Environmental Effects Monitoring ■ Environmental Issues Information System ■ Federal Convictions ■ Fisheries & Oceans Fuel Storage Tanks ■ Indian & Northern Affairs Fuel Tanks ■ National Analysis of Trends in Emergencies System (NATES) ■ National Defence & Canadian Forces Fuel Storage Tanks ■ National Defence & Canadian Forces Spills ■ National Defence & Canadian Forces Waste Disposal Sites ■ National Environmental Emergencies System (NEES) ■ National PCB Inventory ■ National Pollutant Release Inventory ■ Parks Canada Fuel Storage Tanks ■ Transport Canada Fuel Storage Tanks 	<ul style="list-style-type: none"> ■ Abandoned Aggregate Inventory ■ Abandoned Inventory ■ Aggregate Mine Information System ■ Borehole ■ Certificates of Approval ■ Certificates of Property Use ■ Commercial Fuel Oil Tanks ■ Compliance and Convictions ■ Drill Hole Database ■ Environmental Activity and Sector Registry ■ Environmental Compliance Approval ■ Environmental Registry ■ Fuel Storage Tank ■ Fuel Storage Tank – Historic ■ Inventory of Coal Gasification Plants and Tar Sites ■ Inventory of PCB Storage Sites ■ Landfill Inventory Management Ontario ■ List of TSSA Expired Facilities ■ Mineral Occurrences ■ Non-Compliance Reports ■ Ontario Oil and Gas Wells ■ Ontario Regulation 347 Waste Generators Summary ■ Ontario Regulation 347 Waste Receivers Summary ■ Ontario Spills ■ Orders ■ Permit to Take Water ■ Pesticide Register ■ Private and Retail Fuel Storage Tanks ■ Record of Site Condition ■ TSSA Historic Incidents ■ TSSA Incidents ■ TSSA Pipeline Incidents ■ TSSA Variances for Abandonment of Underground Storage Tanks ■ Waste Disposal Sites - MOE 1991 Historical Approval Inventory ■ Waste Disposal Sites - MOE CA Inventory ■ Wastewater Discharger Registration Database ■ Water Well Information System 	<ul style="list-style-type: none"> ■ Anderson's Storage Tanks ■ Anderson's Waste Disposal Sites ■ Automobile Wrecking & Supplies ■ Canadian Mine Locations ■ Canadian Pulp and Paper ■ Chemical Register ■ ERIS Historical Searches ■ Oil and Gas Wells ■ Retail Fuel Storage Tanks ■ Scott's Manufacturing Directory

The complete ERIS report including a brief description of each of the databases searched for the Phase One ESA, is included in Appendix B.

The following is a summary of the findings as identified within the ERIS report relevant to the Site and for the surrounding properties within the Phase One Study Area:

On-Site

- The only listing for the Site was from the Water Well Information Systems (WWIS) that indicated a water well for domestic water supply was completed in August 1994 to a depth of approximately 68 metres below ground surface (mbgs); however, no reported signs of residential home present historically or currently on-Site. The well was drilled through grey clay stones and gravel, underlain by grey sandstone and limestone.

Surrounding Properties within 250 metres of the Site

Noteworthy records for the surrounding properties (Phase One Study Area without the Site) included the following:

- Environmental Compliance Approval (ECA): There was a single record of an ECA that was issued to Mattamy (Half Moon Bay 3) Limited in April 2011 for municipal and private sewage works; and,
- Water Well Information Systems (WWIS) – There were three (3) reported WWIS records all of which were located west of the Site and completed between 2009 and 2016 for observation and testing purposes, likely associated with Trail Road Landfill monitoring activities. The stratigraphy in the area is reported to be brown topsoil underlain by brown sand and gravel. The static water level was not provided in the records.

3.2.2 Ministry of the Environment, Conservation and Parks

The Ottawa district office of the Ontario Ministry of Environment, Conservation and Parks (MECP) was contacted (refer to copy of correspondence in Appendix C) to provide an Index Report with respect to active orders and approvals for the Site as detailed below:

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

An email request was sent to MECP on November 8, 2018; however, a response from MECP was not received at the time of completion of this report.

3.2.3 City of Ottawa

The Historical Land Use Inventory (HLUI) for the Site and surrounding area (refer to copy of the HLUI in Appendix C) was reviewed by Golder. The noteworthy of these historical activities on the Phase One Property and Phase One Study Area are discussed below:

- 3809 Cedarview Road was listed as Brazeau Marcel sand and gravel pits between 1948 and 2001; however, this listing is likely associated with the Site addressed 3809 Borrisokane Road (the Site) and according to aerial images (discussed in section 3.3.1) the earliest activity on-Site appears in 1967 aerial photograph;
- 4475 Trail Road was (located approximately 175 m west of the Site) was listed as City of Ottawa Waste Disposal Site between 1966 and 2003; and
- An unnamed sand and gravel pit was listed for the property immediately north of the Site (currently addressed 3717 Borrisokane Road) between 1948 and 1994.

Based on the review of the HLUI records, the presence of ongoing sand extraction activities on-Site is considered as an industrial activity. Furthermore, the sand and gravel pit related activities to the immediate north (addressed 3717 Borrisokane Road) is also considered to be an industrial land use on adjacent property to the Site. Furthermore, the waste dump facility with landfill at 4475 Trail Road (located approximately 175 m west of the Site) is considered a PCA; however, given the distance, inferred cross-gradient location, and, separation by roadways along with associated underlying utilities, the waste dump is not considered to be an APEC for the Site.

3.2.4 Ministry of Natural Resources and Forestry (MNRF)

An information request was sent to the Ministry of Natural Resources and Forestry (MNRF) on November 14, 2018. Records requested included any information relating to areas of natural significance in the vicinity of the Site, as well as any other environmental concerns that may be related to the Site and surrounding area.

At the time of preparation of this report a response from the MNRF was not received.

3.2.5 Technical Standards and Safety Authority, Fuel Safety Division Records

The Technical Standards and Safety Authority (TSSA) maintains records related to registered underground storage tanks (“USTs”) for petroleum-related products. The TSSA was contacted to establish the status of the Site and to identify outstanding instructions, incident reports, fuel oil spills or contamination records.

A copy of the TSSA response is included in Appendix C.

3.3 Physical Setting Sources

3.3.1 Aerial Photographs

Aerial photographs of the Site and neighbouring properties for the years 1946, 1956, 1967 and 1987, as well as GeoOttawa images from 1976, 1999, 2008 and 2017, were reviewed by Golder. Representative photographs were selected for review based on an approximate ten-year interval. The information obtained from the aerial photographs was limited by the quality and scale of the available aerial photographs. The earliest aerial photograph available was from 1945. Aerial photographs from 1946, 1956, 1967 and 1987 are provided in Appendix D.

Information obtained from the review of the aerial photographs is summarized in the following table.

Year	Site	Surrounding Area
1946 (1:15,000)	The Site appears to be undeveloped and may have been used for agricultural purposes. Eastern portion of the Site consisted of dense tree covered areas. No buildings or structures were present on-Site.	<p>North: Undeveloped land, likely used for agricultural purposes.</p> <p>East: Undeveloped land, likely used for agricultural purposes. Heavy coverage located immediately northeast and southeast of the Site.</p> <p>South: Undeveloped land, likely used for agricultural purposes.</p> <p>West: Roadway (current day ON 416) followed by undeveloped land, likely used for agricultural purposes.</p>

Year	Site	Surrounding Area
1956 (1:12,000)	Similar to 1946 aerial photograph.	<p>North: Similar to 1946 aerial photograph except that an excavation and some structures, likely associated with quarry activities, appears on the adjacent property.</p> <p>East: Similar to 1946 aerial photograph.</p> <p>South: Similar to 1946 aerial photograph.</p> <p>West: Similar to 1946 aerial photograph.</p>
1967 (1:12,000)	The Site appears to have an area cleared on the northeast portion, likely for excavation activities.	<p>North: Similar to 1956 aerial photograph with enlarged excavation area as well as additional buildings and structures adjacent to the Site.</p> <p>East: Similar to 1956 aerial photograph.</p> <p>South: Similar to 1956 aerial photograph.</p> <p>West: Similar to 1956 aerial photograph.</p>
1976 (GeoOttawa Image)	Majority of the Site has been cleared off vegetation cover, likely related to quarry activities. Some areas of ponding appear due to different excavation depths.	<p>North: Similar to 1967 aerial photograph with additional excavated area.</p> <p>East: Similar to 1967 aerial photograph.</p> <p>South: Similar to 1967 aerial photograph.</p> <p>West: Similar to 1967 aerial photograph.</p>
1987 (1:15,000)	Various sizes of excavation appear on-Site as well as associated stockpiles observed throughout the Site. One large storage shed structure and a small building is located on the southwest corner of the Site.	<p>North: Majority of adjacent property cleared for excavation work.</p> <p>East: Similar to 1976 aerial photograph.</p> <p>South: Similar to 1976 aerial photograph.</p> <p>West: Large area of vegetation cleared off, likely associated with development of Trail Road Waste Facility.</p>
1999 (GeoOttawa Image)	Similar to 1987 aerial image except that smaller building structures appear on the southwest corner of the Site, in the vicinity of the Site access.	<p>North: Similar to the 1987 aerial image with some areas of ponding from water accumulation, likely in deep excavated areas.</p> <p>East: As per the 1987 aerial image.</p> <p>South: As per the 1987 aerial image.</p> <p>West: Similar to 1987 aerial image except that some grass cover areas appear across the roadway associated with development of the waste dump facility on Trail Road. Additional roadways appear immediately adjacent, likely construction of divided highway and Borrisokane Road.</p>

Year	Site	Surrounding Area
2008 (GeoOttawa Image)	Similar to the 1991 aerial image with a large area of water ponding on the western portion of the Site.	<p>North: As per the 1999 aerial image.</p> <p>East: As per the 1991 aerial image.</p> <p>South: As per the 1991 aerial image.</p> <p>West: Large excavation area cleared of vegetation immediately across ON 416 associated with landfilling at the Trail Road waste dump.</p>
2017 (GeoOttawa Image)	The Site appears to have ongoing sand pit extraction related activities with various stockpiles and excavation areas present.	<p>North: As per the 2008 aerial image.</p> <p>East: Residential developments with single family homes and town houses.</p> <p>South: As per the 2008 aerial image.</p> <p>West: Major activities associated with landfilling within Phase One Study Area appears to have been completed.</p>

Based on the earliest available photograph from 1946, the Site was undeveloped and likely used for agricultural purposes. First development appears in 1967 aerial image with sand pit/quarry related activities on the northeast portion of the Site which extended west and south over subsequent years as indicated in aerial photographs from 1976, 1987, 1999 and 2008. Excavations and stockpiles of various sizes appeared across the Site throughout these years as well as some large areas of ponding likely associated with deep excavation areas. One large storage structure on the southwest portion of the Site first appears in the 1987 aerial image and remains unchanged although has been relocated slightly eastwards. According to 2017 aerial photographs, two smaller buildings located on the southwest portion of the Site appear in the late 1990s and early 2010s and are present in 2017 aerial photograph.

The surrounding properties included undeveloped lands and agricultural fields circa 1940s and 1950s except for some excavation work and associated building structures, which appear immediately north of the Site as per the 1956 aerial. Development activities to the west likely associated with the Trail Road landfill facility appear in 1976 aerial photograph. Majority of landfilling activities within Phase One Study Area appears to have been completed as per 2008 aerial image; however, the activities associated with waste dump and landfilling is considered an off-Site potential contaminating activity (PCA). The land uses to the east of the Site consists of residential developments from early 2010s where as lands to the south of the Site appear undeveloped through out all the aerials images till 2017. The roadways located immediately west of the Site were redeveloped mid to late-1990s with a divided highway (ON 416) and present day Borrisokane Road.

3.3.2 Topography, Hydrology and Geology

The following records were reviewed to identify topographic, geologic and hydrogeological conditions at the Site. A topographic map (Ontario Base Map) showing the Site area and the location of any water bodies is provided in Figure 3. Additional information on Site features, as observed at the time of the Site visit, is provided in Section 6.

Topic	Conditions	Comment / Source
Topography of Site and Surrounding Area	The topography of the Site and surrounding area is undulating with the roadways to the west and residential developments to the east located at a higher elevation. The uneven terrain on-Site is due to fill placement and a change in elevation is located on the eastern and east portion of the Site (where land sloped steeply downwards) likely due the excavation activities.	Site and surrounding area observations
Overburden Soils	Majority of the Site consists of gravel and sand.	Bélanger, J. R. 2008 Urban Geology of the National Capital Area, Geological Survey of Canada, Open File 5311, 1 DVD.
Type of Bedrock	Oxford formation of sublithographic to fine crystalline dolostone.	Armstrong, D.K. and Dodge, J.E.P. 2007. Paleozoic Geology of Southern Ontario; Ontario Geological Survey, Miscellaneous Release – Data 219
Depth to Bedrock	Drift thickness in the area is estimated to be 15 to 25 metres.	2010 Bélanger, J. R., Urban Geology of the National Capital Area, Geological Survey of Canada, Open File D3256, 2001
Inferred Near Surface Groundwater Flow	Regional groundwater flow is inferred to be to be north towards Jock River, however locally may be influenced by the sand extraction activities.	Site and surrounding area observations, Figure 3 – Topographic Map and Areas of Natural Significance
Site Grade Relative to the Adjoining Properties	The Site appears to follow the topography of the area and is at grade with respect to properties located adjacent north and south to the Site; however, developed residential lands to the east and roadways to the west are at a higher elevation compared to the Site.	Site observations
Depth to Groundwater	Not known at the time of the Site visit.	N/A

It should be noted that local groundwater flow may be influenced by underground utilities (i.e., service trenches), building structures and excavations. For example, the gravel pack used around utilities, such as a water line, can act as interceptors and redirect groundwater flow along the direction of the pipe. If a more accurate description of geology, groundwater flow and groundwater quality is required, a subsurface investigation would be necessary.

3.3.3 Fill Materials

Topic	Conditions	Comment / Source
<p align="center">Fill Materials</p>	<p>At the time of the Site visit, fill material overgrown with vegetation was observed across majority of the Site; however, the Site Representative indicated that no imported materials other than one small stock pile of red clay brick and one of concrete debris were present at the Site. Stockpiles of sand, and boulders, and, other materials observed were generated on-Site as part of the extraction and screening activities, according to the Site Representative. Other than the two piles of debris, no imported fill materials were present on the Site. According to the Site Representative no infilling of the pit activities has occurred on the Site.</p> <p>The stockpiles of red clay bricks and concrete debris are considered waste materials that needs to be managed and not fill materials of unknown quality and origin on the Site as these materials were not used for backfilling any part of the Site. As such, presence of these imported materials are not considered an on-Site PCA, but should be removed from the Site.</p>	<p align="center">Site observations and Site Representative</p>

3.3.4 Water Bodies and Areas of Natural Significance

Topic	Conditions	Comment / Source
<p align="center">Nearest Open Water Body</p>	<p>The Jock River is located approximately 1.8 km north of the Site.</p>	<p align="center">Site observations and Figure 1– Key Plan</p>
<p align="center">Areas of Natural Significance</p>	<p>No areas of natural and scientific interest (ANSI) are known to be located on the Site or on the Phase One Study Area. Based on available information, the Site is not considered to be an environmentally sensitive area. However, a response from the MNRF has not been received to confirm this. As such, the Site is not considered an area of natural significance.</p>	<p align="center">Figure 3 (Topographic Map and Areas of Natural Significance)</p>

3.3.5 Well Records

Topic	Conditions	Comment / Source
Water Wells on Site (location, stratigraphy of the overburden, from ground surface to bedrock, depth to bedrock, depth to water table, drilling date, use)	No water wells were observed at the Site during the Site reconnaissance. However, the ERIS report indicated a water well was associated with the Site for the purpose of domestic water supply. The Site Representative was not aware of any water wells on-Site.	ERIS Report and Site observations
Water Wells on the Neighbouring Properties (location, stratigraphy of the overburden, from ground surface to bedrock, depth to bedrock, depth to water table, drilling rate, use)	Three well records identified in ERIS were located within Phase One Study Area to the west of the Site (along ON 416). All of these wells were installed (between 2009 and 2016) for testing purposes and likely associated with landfill monitoring activities of the waste facility on Trail Road.	ERIS Report

3.4 Site Operating Records

At the time of the Site visit, the Phase One Property was a vacant sand pit; however, it was active with extraction activities from at least 1967 till 2017 (industrial land use). As such, based on the former industrial land use of the Phase One Property, the Site is considered to be an Enhanced Investigation Property according section 32(1)b of O.Reg. 153/04. No Site operating records were provided to Golder for review.

3.5 Summary of Findings

The first developed use of the Site was determined to be for sand pit extraction (industrial use) from at least 1967 and continued to be used for similar use since 2017. The Site was serviced from an off-Site pole mounted transformer at the time of the Site visit and not known to consist of any fuel storage tanks (AST or UST). According to the Site Representative, imported materials were not brought on-Site except for one stockpile each of red clay bricks and concrete debris; however, these were never used for any backfilling purposes. All other stockpiles observed during Site reconnaissance originated from on-Site extraction activities.

In addition, any industrial land use of the Site warrants a Phase Two ESA as per section 32(1)b of O.Reg. 153/04 except where the sole industrial use was for mineral extraction, as per section 32(3)a. As such a mandatory Phase Two ESA is not required.

4.0 INTERVIEWS

During the course of the project, Golder has requested all relevant information from Caivan Communities. In addition, a detailed environmental assessment related questionnaire was completed by Mr. Julio Da Silva (Project Coordinator, Land Development) of Caivan Communities (the "Site Representative). Mr. Silva has been with Caivan Communities for eight months; however, was considered as the Site Representative with knowledge of operations at the Site based on his current and previous experience with the Phase One Property, and, completed questionnaire as the Site Representative pursuant to the requirements O.Reg. 153/04.

Relevant information obtained during the interview and Site visit is provided in Section 5.0.

5.0 SITE RECONNAISSANCE

5.1 General Requirements

Shihan Chowdhury of Golder visited the Site on November 13, 2018. The Site visit consisted of a walk-around the Site along with a cursory inspection of surrounding properties from the Site and publicly accessible areas. The Phase One Property was occupied by vacant sand pit with large excavated areas on the eastern portion of the Site and associated scale office buildings and storage shed space on the southwest portion of the Site. Asphalt paved driveways from Borrisokane Road provided access to the Site; however, other pathways on-Site consisted of gravel area. Tree coverage was observed along southern perimeter of the Site and with vegetation growth observed on topsoil stockpiles across the Site.

Photographs of relevant features noted during the Site visit are provided in Appendix E.

5.2 Specific Observations at Phase One Property

The specific observations made during the Site visit are presented in the following sections.

Topic	Observations	Source
<u>Structures</u> Number and Age of Buildings on the Site	The scale office building was located on the southwest portion of the Site from sometime between 1991 and 1999 (approximately 19 to 27 years old), adjacent to the entrance way off Borrisokane Road.	Site observations and Site Representative
General Descriptions of Each Building (including improvements)	Constructed on concrete foundation with wooden panel exterior walls and shingled roof.	Site observations
Building Areas	Approximately 75 m ²	Site observations
Number of Floors (include all levels, whether above or below ground)	One above ground floor.	Site observations
Number, Age, and Depth of Levels Below Ground Level	None.	Site observations

Topic	Observations	Source
Number and Details of all Aboveground Storage Tanks (“ASTs”)	<p>No ASTs associated with fuel storage were observed or reported on the Phase One Property at the time of the Site visit. No evidence of stains or spills were observed; however, the Site was partially snow covered at the time of the Site visit. The Site Representative was not aware of presence of any former and/or current ASTs at the Site.</p> <p>However, a storage tank associated with water storage (as indicated by the Site Representative) was observed adjacent to the storage shed.</p>	Site observations and Site Representative
Number and Details of all Underground Storage Tanks (USTs)	<p>No USTs were reported on the Phase One Property. In addition, no evidence (fill/vent pipes extending through walls or slabs/ground surface, no staining or any obvious odours) was observed during the Site visit to indicate the current or former presence of fuel or chemical USTs on the Site.</p>	Site observations and Site Representative
Asbestos-Containing Materials (ACMs)	<p>None observed at the time of the Site visit. Based on the age of the scale office building (constructed between 1987 and 1991), it is unlikely that ACMs is present at the Site.</p>	Site observations
Polychlorinated Biphenyls (PCB) Containing Materials and Equipment	<p>A pole mounted transformer was located off-Site, immediately west of the Site along Borrissokane Road.</p> <p>It could not be confirmed whether the pole mounted transformer contained PCBs; however, no evidence of spills or leaks was noted in the area of the off-Site transformer based on limited visibility due to snow cover on the ground.</p> <p>Also, no labels indicating whether the transformer was PCB-containing or not was noted at the time of the Site visit.</p>	Site observations
Lead-Based Paints (LBPs)	<p>Based on the age of the scale office building (constructed between 1987 and 1991), it is unlikely that LBPs are present at the Site. In addition, all paints and surfaces coatings appeared to be good condition.</p>	Site observations
<u>Underground Utilities</u> Potable and Non-Potable Water Sources	<p>The Site Representative indicated that no potable and non-potable water sources were available on-Site.</p>	Site observations

Topic	Observations	Source
Utility Lines Present (i.e. Electrical, Natural Gas, other)	Overhead electrical lines were observed along the west perimeter of the Site.	Site observations
Sanitary/Process Wastewater Receptor	No sanitary or process wastewater is generated on-Site.	Site observations and Site Representative
Sanitary Sewer Connection	The Site is not connected to the municipal sanitary sewer.	Site observations and Site Representative
Septic Systems	None identified.	Site observations and Site Representative
Storm Water Flow	Infiltrate through gravel and vegetation covered areas throughout majority of the Site.	Site observations
Storm Sewer Connection	None identified.	Site observations and Site Representative
<u>Interior of Structures</u> Entry and Exit Points for Site Buildings	The only entrance and exit point to the scale office building is located on the north elevation.	Site observations
Existing and Former Heating System(s) (include fuel type / source)	A portable electrical heater was observed inside the scale office building.	Site observations
Existing and Former Cooling System(s) (include fuel type / source)	A disconnected window mounted air-conditioning unit was observed inside the scale office building.	Site observations
Drains, Pits, and Sumps (include current use, if any, and former use)	None identified at the time of the Site visit. In addition, no drains, sumps and/or pits were reported to be present at the Site.	Site observations and Site Representative
Unidentified Substances	None identified.	Site observations
Floor Stains or Corrosion Located near a Potential Discharge Location	None identified based on limited visibility due to snow cover on the ground.	Site observations
<u>Miscellaneous Exterior</u> Location of any Current and Former Wells	None identified or reported; however, ERIS report indicated a water well for domestic water supply was located on-Site.	Site observations and ERIS report

Topic	Observations	Source
Ground Cover (i.e., grass, gravel, soil, or pavement, etc.)	The Site was snow covered at the time of the Site visit but appeared to consist of uneven terrain covered with rough vegetation consisting of tall grass and shrubs on the western portion of the Site. In addition, the topsoil stockpiles located along portions of the Site perimeter and on some areas of the excavation floor also consisted of vegetation growth. Tall trees were located along the southern perimeter of the Site. Remaining portion of the Site consisted of gravel covered excavation floor area.	Site observations
Current or Former Railway Lines or Spurs	None observed or reported.	Site observations.
Presence of Stained Soil, Vegetation, or Pavement	None observed; however, the Site was primarily snow covered at the time of the Site visit.	Site observations
Presence of Stressed Vegetation	None observed; however, the Site was primarily snow covered at the time of the Site visit.	Site observations
Areas Where Fill and/or Debris Materials Appear to Have Been Placed	Fill materials of various composition (topsoil, sand and boulders) was present across the Site, stockpiled from on-Site extraction activities. The Site Representative indicated that no imported materials other than one stock pile of red clay brick and concrete debris each were present. These materials were never used to backfill any areas of the Site according to the Site Representative and hence are not considered to be fill materials of unknown original and quality.	Site observations
Potentially Contaminating Activity	None identified.	Site observations
Unidentified Substances	None identified.	Site observations

5.2.1 Enhanced Investigation Property

The Site occupied by a vacant sand pit and associated building structures (scale office building and storage sheds). The eastern portion of the Site consists of large excavation area with stockpiles of various extraction materials were observed across the entire Site. Quarrying activity involving aggregate materials are considered to be industrial activity which took place on-Site from at least 1967 till 2017. As such, the Phase One Property is considered an Enhanced Investigation Property based on the historical industrial use of the Site.

5.3 Surrounding Land Use

During the Site visit, a visual reconnaissance of the observable operations in the Phase One Study Area was carried out from the Site and publicly accessible areas.

The surrounding properties include residential and commercial land uses, as illustrated on Figure 2.

North: Active sand pit immediately north of the Site at 3717 Borrisokane Road with extraction activities associated with sand, gravel and other materials. Further away from the Site includes undeveloped lands.

East: Residential developments (single family homes and townhouse buildings) immediately east of the Site with associated playgrounds and parks.

South: Immediately adjacent land uses were undeveloped and/or vacant.

West: Bounded by Borrisokane Road followed by ON 416 (divided highway). Further away from the Site includes landfilling activities associated with the Trail Road waste facility.

5.4 Written Description of Investigation

At the time of the Site visit, which was conducted on November 13, 2018, the Phase One Property consisted of a vacant sand pit with large areas of excavations located on the east portions of the Site. The Site can be accessed using asphalt paved driveway on the southwest corner of the Site off of Borrisokane Road, although other pathways across the Site consists of gravel areas. The southwest portion of the Site consisted of a scale office building and a large shed used for tool and/or equipment storage. Stockpiles and windrows of excavated materials were observed along the north, east and west Site perimeters, whereas tree coverage was observed along the south Site perimeter. The main excavation area was located on the eastern portion of the Site whereas the western portion mainly consists of rough vegetation cover consisting of short trees and shrubs. No evidence of stains, spills, or stressed vegetation was observed, based on limited visibility due to snow cover.

The access driveway on the southwest corner of the Site extended along the south perimeter to a steep decline ramp to the excavation floor which consisted of various stockpile materials including sand, and boulders that were reportedly generated from extraction and screening activities at the Site. Two small stockpiles of red clay bricks and concrete debris was observed on the excavation floor; however, the Site Representative indicated that these materials were imported but not used to backfill any parts of the Site. Other stockpiles with overgrown vegetation observed at the Site reportedly consisted of topsoil sourced from the Site and were to be used for backfilling purposes at the Site.

The scale office building located on the southwest portion of the Site was serviced by an off-Site pole mounted transformer. The office used to be heated by a portable electric heater and cooled by a window mounted air-conditioning unit. A large storage shed observed east of the scale office building was rented out by previous owners to landscaping companies for equipment storage. No ASTs or USTs were reportedly associated with these building structures current and historically. No evidence of any stains, spills or stressed vegetation in the vicinity of these building structures were observed at the time of the Site visit, based on limited visibility due to snow cover. A large metal tank was observed on the western portion of the Site which was reportedly used for water storage used by the landscaping companies renting part of the Site.

During the Site visit, an active sand pit was observed immediate north of the Site which has been operational since at least 1967 as per review of aerial photographs. The other surrounding lands included residential developments consisting of single-family homes and town house buildings to the adjacent east; undeveloped lands reportedly proposed for residential land use to the immediate south; and, roadways (Borrisokane Road) and highway (ON 416) followed by a waste management facility at Trail Road.

6.0 REVIEW AND EVALUATION OF INFORMATION

6.1 Current and Past Uses of the Site

The following summarizes the current and past uses of the Site:

Year(s)	Name of Owner(s)	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, Etc.
Prior to 1946	Unknown	Undeveloped and/or farmland	Agricultural or other use	No aerial photograph coverage available for prior to 1946. According to aerial images from 1946, and 1956, the Site appears to consist of undeveloped land with dense tree coverage on the eastern portion. The 1967 aerial photograph shows first signs of development with clearing of vegetation on the east portion.
1946 to 1956	Unknown			
1956 to 1967	Unknown			
1967 to 1976	Unknown	Sand pit quarry	Industrial	Early signs of excavation activities appear in the form of areas cleared off vegetation.
1976 to 1987	Brazmar Limited (indicated by Caivan)	Sand pit quarry	Industrial	Various excavations appear across the Site with associated stockpiles, buildings/structures and seasonal ponding areas. In addition, a storage appears in 1987 aerial image, followed by a small building structure (likely the scale office building) in 1999
1987 to 1999	Brazmar Limited (indicated by Caivan)	Sand pit quarry	Industrial	
1999 to 2008	Brazmar Limited (indicated by Caivan)	Sand pit quarry	Industrial	
2008 to 2017	Brazmar Limited (indicated by Caivan)	Sand pit quarry	Industrial	

6.2 Potentially Contaminating Activity

Potentially contaminating activities, which if currently or historically carried out at a Site, may contribute to an area of potential environmental concern (APEC). Based on the information obtained as part of this Phase One ESA, no PCAs were identified at the Site; however, the one PCA was identified within the surrounding properties of the Site:

Location	Potentially Contaminating Activity	Information Source	Rationale for Potential Contribution of the PCA to an APEC
Phase One Study Area (excluding the Phase One Property)	#58. Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners – Waste management facility at 4475 Trail Road including landfilling, composting, and, recycling is located approximately 175 m west of the Site (across Borrisokane Road and ON 416).	ERIS Report, Aerial photographs and Site observations	Based on the distance from the Site; inferred cross-gradient location (inferred groundwater flow towards Jock River to the north) of the waste area; and, separation by a roadway and a divided highway along with associated underlying utilities, this PCA is not considered to result in an APEC for the Site. In addition, it is understood that the Site will be severed with the proposed residential developments at the Site to be located on the eastern portion of the Phase One Property at a distance greater than 500 m from the waste management facility.

6.3 Areas of Potential Environmental Concern

Based on the information available, the identified PCAs are not considered result in any APECs on the Phase One Property.

6.4 Conceptual Site Model

A Conceptual Site Model of the Phase One Study Area (as required by O.Reg. 153/04) is presented in a series of Figures 1 to 8 (Figure 1: Key Plan, Figure 2: Site Plan, Figure 3: Topographic Map and Areas of Natural Significance, Figure 4: Surficial Geology, Figure 5: Bedrock Geology, Figure 6: Drift Thickness, Figure 7: Soil Survey Complex (Ontario Soils), and Figure 8: Physiography Map).

The combined set of figures shows:

- Existing buildings and structures;
- Water bodies and Areas of Natural Significance (if present) located in the Phase One Study Area;
- Roads (including names) within the Phase One Study Area;
- Uses of properties adjacent to the Phase One Property; and,
- Location of identified PCAs in the Phase One Study Area.

The following describes the Phase One ESA Conception Site Model (CSM) for the Site based on the information obtained and reviewed as part of this Phase One ESA:

- At the time of the Site visit on November 13, 2018, the Phase One Property consisted of an approximately 37.8 hectares (93.4 acres) parcel of land located north of Barnsdale Road and east of Veterans Memorial Highway (“ON 416”). The Site was occupied by vacant sand pit with large excavation area on the east portion, as well as associated storage and scale office buildings on the southwest corner of the Site. The surrounding properties to the Site included primarily of residential and commercial activities including an active sand pit immediately north of the Site and the Trail Road waste disposal site to the west.

- No water bodies were identified on the Phase One Property. The Jock River is located approximately 1.8 km north of the Site. No areas of natural significance were identified on or within the Phase One Study Area.
- According to ERIS report, only one WWIS record existed for the Site which indicated a water well for domestic water supply was completed in 1994; however, the Site Representative was not aware of any presence of water wells or potable water sources at the Site. In addition, ERIS report also mentioned three observation wells within the Phase One Study Area (located west of the Site along ON 416) likely associated with monitoring of the waste facility at Trail Road.
- At the time of the Site visit, the Phase One Property consisted of a vacant sand pit with large areas of excavations located on the east portion of the Site. The Site can be accessed using asphalt paved driveway on the southwest corner off Borrisokane Road, although other pathways across the Site consists of gravel areas. The southwest portion of the Site consisted of a scale office building and a large shed used for tool and/or equipment storage. Stockpiles and windrows of excavated materials from on-Site were observed along the north, east and west Site perimeters, whereas tree coverage was observed along the south Site perimeter. The main excavation area was located on the eastern portion of the Site whereas the western portion mainly consists of rough vegetation cover consisting of short trees and shrubs. No evidence of stains, spills, or stressed vegetation was observed, based on limited visibility due to snow cover.
- Stockpiles of fill materials were observed throughout the Site at the time of the Site visit; however, were generated as part of the extraction and screening activities on-Site and did not include any imported materials. Two stockpiles (one each of red clay bricks and concrete debris) were observed on the excavation floor although were not used for backfilling purposes according to the Site Representative. These are considered waste materials that needs to be managed and not fill materials of unknown quality and origin on the Site. As such, presence of these imported materials (red clay bricks and concrete debris) are not considered an on-Site PCA
- The nearest water body is Jock River is located approximately 1.8 km north of the Site.
- No areas of natural and scientific interest (ANSI) are known to be located on the Site or on the Phase One Study Area. Based on available information, the Site is not considered to be an environmentally sensitive area; however, a response from the MNRF has not been received to confirm this. As such, the Site is not considered an area of natural significance.
- At the time of the Phase One ESA, the surrounding properties within the Phase One Study Area consisted of generally mixed land uses including industrial land use to the north (active sand pit); residential developments to the east, undeveloped lands to the south; and, roadways followed by waste facility to west. There were no indications that surrounding properties in the Phase One Study Area consisted of commercial uses including: vehicle garage, bulk liquid dispensing facility, or dry cleaning facility. In addition, no evidence of presence of former and current AST and UST within Phase One Study Area was observed.
- The only roads located within the Phase One Study Area at the time of the Site visit were Highway 416 and Borrisokane Road (formerly Cedarview Road)
- Local groundwater is anticipated to flow north (with localized variations caused by underground utilities in the vicinity of the Site) towards the nearest waterbody, Jock River, which is located 1.8 km north of the Site.

- There are no on-Site PCA for the Phase One Property; however, a single off-Site PCAs was identified (presented in Section 6.2 of this report) but is not considered to have resulted in an APEC on the Phase One Property.

6.4.1 Uncertainty and Absence of Information

At the time of preparation of this report, a response to Golder's request for information had not been received from the MECP and MNRF. However, based on the body of information acquired, it is considered that the absence of this information should not likely affect the conclusion of the Phase One ESA. There were no material deviations to the Phase One ESA requirements set out in O.Reg. 153/04 that would cause uncertainty or absence of information that would affect the validity of the Phase One Conceptual Site Model or the findings of this Phase One ESA.

Furthermore, Golder will review the responses to these regulatory requests upon their receipt and should the response affect the findings of this Phase One ESA, it will be forwarded to the Client.

7.0 CONCLUSIONS

Based on the information obtained and reviewed as part of this Phase One ESA, no on-Site PCAs were identified. An off-Site PCA was identified off-Site to the west; however, based on available information and observations made during the Site visit this off-Site PCA is not considered to be represent an APEC for the Phase One Property. As per section 32(3)a of the O.Reg. 153/04, a mandatory Phase Two ESA is not required as the only industrial activity on the Site was for the extraction of sand.

No Phase Two ESA is recommended.

7.1 Record of Site Condition Based on Phase One Environmental Site Assessment Alone

Given that the Site is currently vacant, was previously was used for sand pit which is considered an industrial use , and is proposed for mixed use development (commercial and residential use), a change in the land use from less sensitive to more sensitive will trigger a mandatory filing of an RSC.

As indicated above, no APECs were identified in association with the Site and no Phase Two ESA was recommended for the Site. As such, an RSC can be filed for the Site on basis of a Phase One ESA. It is noted that the Site will be severed and as such the Phase One ESA will require updating to file an RSC after the severance has occurred. Alternatively, an RSC could be filed with this Phase One ESA prior to the severance.

8.0 REFERENCES

The following documents and/or data were cited in this report:

Source	Date
Ontario Regulation 153/04	As amended
Bélanger, J. R. 2008 Urban Geology of the National Capital Area, Geological Survey of Canada, Open File 5311, 1 DVD.	2008
Armstrong, D.K. and Dodge, J.E.P. 2007. Paleozoic Geology of Southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 219	2007
2010 Bélanger, J. R., Urban Geology of the National Capital Area, Geological Survey of Canada, Open File D3256, 2001	2010
Aerial Photographs – National Air Photo Library (Natural Resources Canada)	1946, 1956, 1967 and 1987
Aerial Photograph Images – geoOttawa (http://maps.ottawa.ca/geoOttawa/)	1976, 1999, 2008 and 2017
ERIS report	November 14, 2018
Ontario Ministry of the Environment, Conservation and Parks	Pending response
Ministry of Natural Resources and Forestry	Pending response
Technical Standards and Safety Authority	November 8, 2018

9.0 LIMITATIONS AND USE OF REPORT

This report (the “Report”) was prepared for the exclusive use of Caivan Brazeau Development Corporation for the express purpose of providing advice with respect to the environmental condition of the Site. In evaluating the Site, Golder Associates Ltd. (“Golder”) has relied in good faith on information provided by others as noted in the Report. We have assumed that the information provided is factual and accurate. We accept no responsibility for any deficiency, misstatement or inaccuracy contained in this Report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted, or incomplete or inaccurate historical information from the various agencies. Any use which a third party makes of this Report, or any reliance on or decisions to be made based on it, is the sole responsibility of such third party. If a third party requires reliance on this Report, prior written authorization from Golder is required. Golder disclaims any responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The scope and the period of Golder’s assessment are described in this Report, and are subject to restrictions, assumptions and limitations. Except as noted herein, the work was conducted in accordance with the scope of work and terms and conditions of Golder’s proposal. Golder did not perform a complete assessment of all possible conditions or circumstances that may exist at the Site referenced in the Report. Conditions may therefore exist which were not detected given the limited nature of the assessment Golder was retained to undertake with respect to the Site and additional environmental studies and actions may be required. In addition, it is recognized that the passage of time affects the information provided in the Report. Golder’s opinions are based upon information that existed at the time of the writing of the Report. It is understood that the services provided for in the scope of work allowed Golder to form no more than an opinion of the actual conditions at the Site at the time the Site was visited, and cannot be used to assess the effect of any subsequent changes in any laws, regulations, the environmental quality of the Site or its surroundings. Asbestos and mould surveys were not performed. If a service is not expressly indicated, do not assume it has been provided.

The results of an assessment of this nature should in no way be construed as a warranty that the Site is free from any and all contamination from past or current practices.

10.0 STATEMENT OF COMPLETION

The undersigned confirm that this Phase One Environmental Site Assessment was conducted in a manner consistent with the expected standard of care for the consulting industry in Ontario and meets the requirements for Phase One ESAs as set out in O.Reg. 153/04.

Signature Page

We trust that the information presented in this report meets your current requirements. Should you have any questions or concerns, please do not hesitate to contact the undersigned.

Golder Associates Ltd.



Shihan Chowdhury, EIT
Junior Environmental Consultant



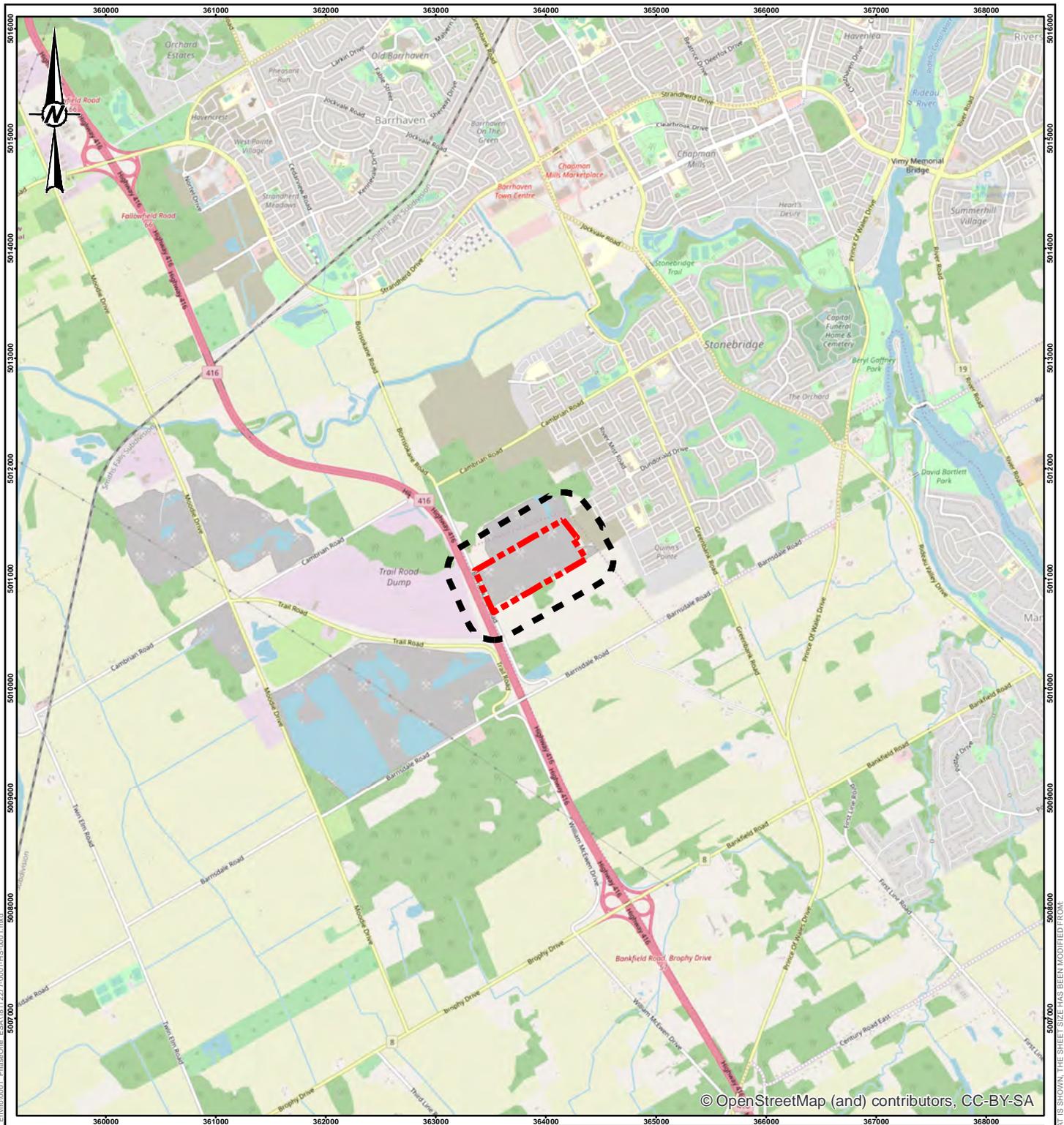
Keith Holmes, M.Sc., P.Geo.
Geoscientist/Associate

SAC/KPH/lc/hw

[https://golderassociates.sharepoint.com/sites/100163/deliverables/phase i esa/18112277-ph i esa_rsc_3809 borrisokane road_v2.docx](https://golderassociates.sharepoint.com/sites/100163/deliverables/phase%20i%20esa/18112277-ph%20i%20esa_rsc_3809_borrisokane_road_v2.docx)

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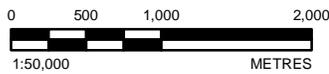
Figures



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LEGEND

-  PHASE ONE SITE
-  PHASE ONE STUDY AREA



REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83
COORDINATE SYSTEM: MTM ZONE 9 VERTICAL DATUM: CGVD28

CLIENT
CAIVAN BRAZEAU DEVELOPMENT CORPORATION

PROJECT
**PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
 3809 BORRISKANE ROAD, OTTAWA, ONTARIO**

TITLE
KEY PLAN

CONSULTANT	YYYY-MM-DD	2018-11-14
	DESIGNED	----
	PREPARED	JEM
	REVIEWED	SC
	APPROVED	KPH



PROJECT NO. 18112277	CONTROL 0001	REV. 0	FIGURE 1
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LEGEND

- ROADWAY
- PHASE ONE SITE
- PHASE ONE STUDY

ON-SITE FEATURES

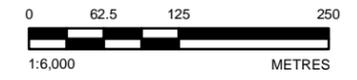
- A. SCALE OFFICE BUILDING SERVICED BY OTTAWA HYDRO (NO STORAGE TANKS ASSOCIATED).
- B. LARGE SHED STRUCTURE USED FOR TOOLS AND EQUIPMENT STORAGE (NO SERVICING OR MAINTENANCE).
- C. SEA CAN TRAILERS USED AS STORAGE SHEDS.
- D. FORMER INCINERATOR ADJACENT TO EXCAVATION AREA.
- E. STORAGE TANK USED FOR NON-POTABLE WATER STORAGE (AS PER SITE REPRESENTATIVE)

OFF-SITE FEATURES

- 1. ACTIVE QUARRY ACTIVITIES (INDUSTRIAL LAND USE) IMMEDIATELY NORTH OF THE SITE AT 3717 BORRISOKANE ROAD.
- 2. ACTIVE WASTE DUMP FACILITY AT 4475 TRAIL ROAD (LOCATED APPROXIMATELY 175 m WEST OF THE SITE).

REFERENCE(S)

- 1. LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2014
- 2. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28



CLIENT
CAIVAN BRAZEAU DEVELOPMENT CORPORATION

PROJECT
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
3809 BORRISOKANE ROAD, OTTAWA, ONTARIO

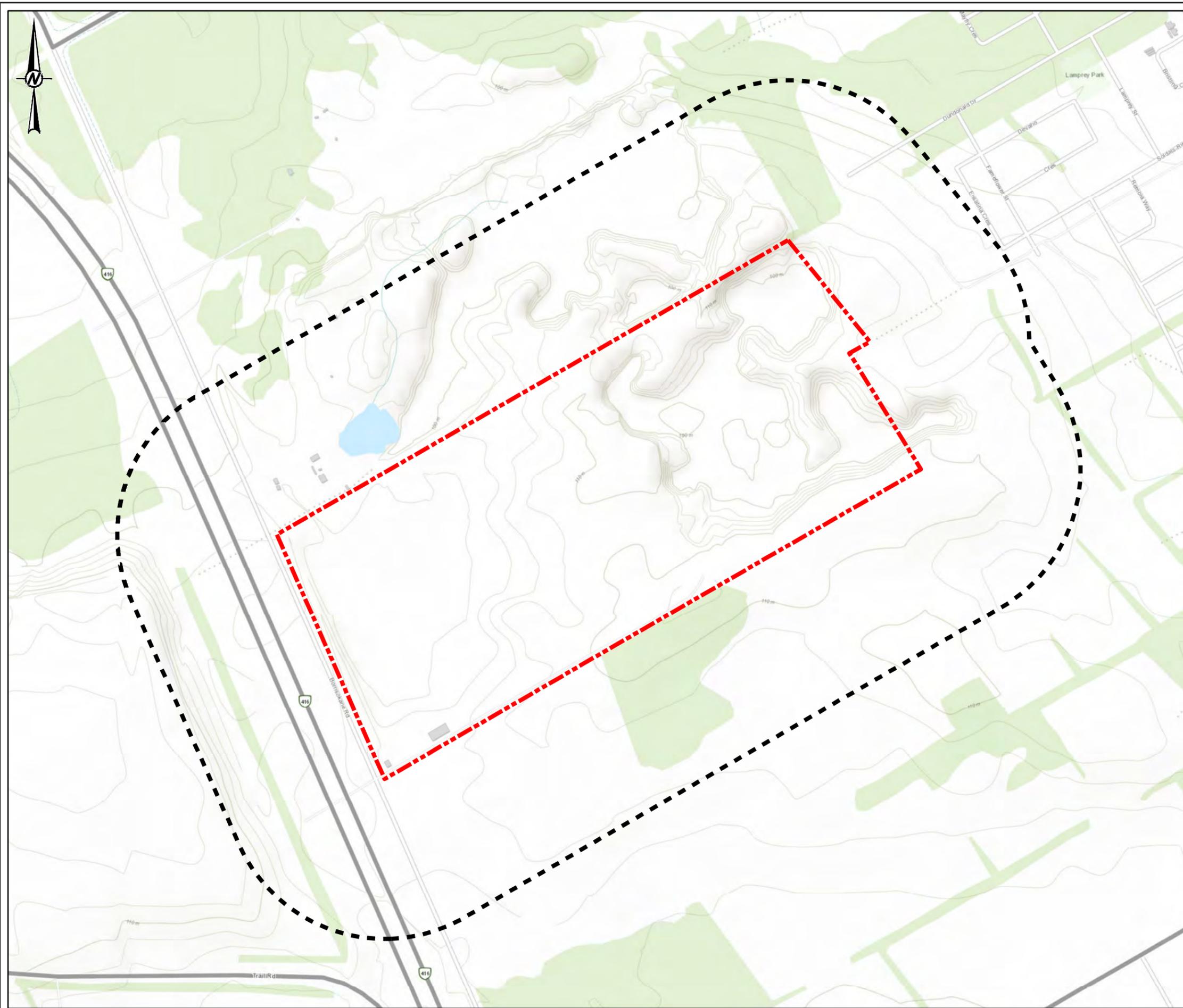
TITLE
SITE PLAN

CONSULTANT	YYYY-MM-DD	2018-11-14
	DESIGNED	---
	PREPARED	JEM
	REVIEWED	SC
	APPROVED	KPH

PROJECT NO. 18112277 CONTROL 0001 REV. 0 FIGURE 2

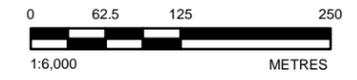
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LEGEND
 PHASE ONE SITE
 PHASE ONE STUDY AREA

REFERENCE(S)
 1. LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2014
 2. SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), SWISSTOPO, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY



CLIENT
 CAIVAN BRAZEAU DEVELOPMENT CORPORATION

PROJECT
 PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
 3809 BORRISOKANE ROAD, OTTAWA, ONTARIO

TITLE
TOPOGRAPHIC MAP AND AREAS OF NATURAL SIGNIFICANCE

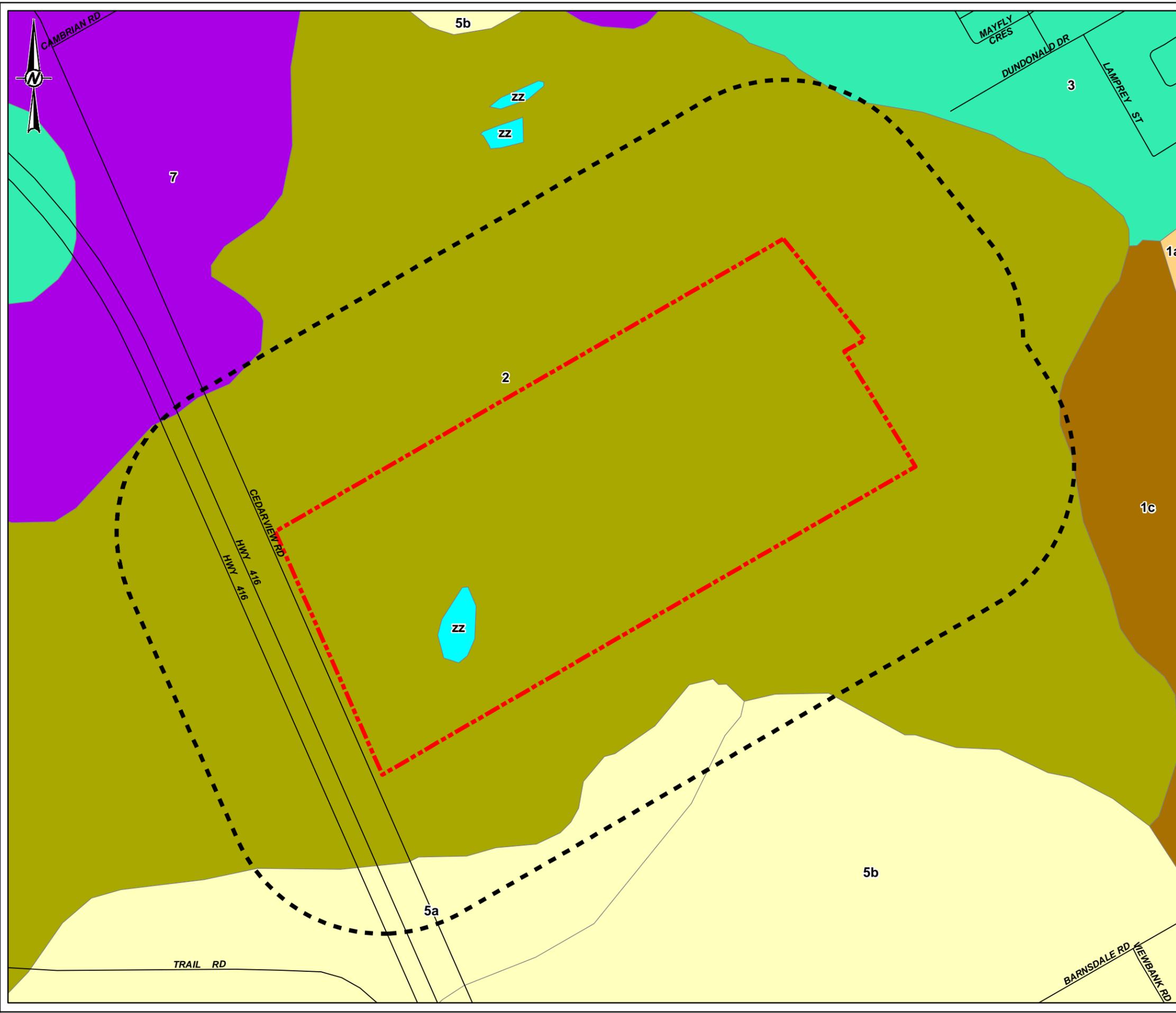
CONSULTANT	YYYY-MM-DD	2018-11-14
DESIGNED	---	
PREPARED	JEM	
REVIEWED	SC	
APPROVED	KPH	



PROJECT NO. 18112277 CONTROL 0010 REV. 0 FIGURE 3

Print: N:\Vector\Spatial_JMC\chan3809_Borrisokane_Rd09_PROJ_18112277_CaivanBrazeau_Enviro\0001_PhaseOne_ESA\18112277-0001-HS-0003.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM 28mm

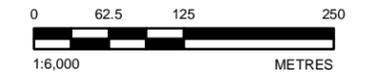


LEGEND

- ROADWAY
- PHASE ONE SITE
- PHASE ONE STUDY AREA
- 7. ORGANIC DEPOSITS: MUCK & PEAT
- 5a: NEARSHORE SEDIMENTS: GRAVEL, SAND & BOULDERS
- 5b: NEARSHORE SEDIMENTS: FINE TO MEDIUM GRAINED SAND
- 3. OFFSHORE MARINE DEPOSITS: CLAY, SILTY CLAY & SILT
- 2. ICE CONTACT STRATIFIED DRIFT: GRAVEL & SAND
- 1a. TILL, PLAIN WITH LOCAL RELIEF <5 m
- 1c. TILL, HUMMOCKEY TO ROLING WITH LOCAL RELIEF 5 to 10 m
- zz. WATERBODY

REFERENCE(S)

1. LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2014
2. BÉLANGER, J. R. 2008 URBAN GEOLOGY OF THE NATIONAL CAPITAL AREA, GEOLOGICAL SURVEY OF CANADA, OPEN FILE 5311, 1 DVD.
3. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28



CLIENT
CAIVAN BRAZEAU DEVELOPMENT CORPORATION

PROJECT
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
3809 BORRISOKANE ROAD, OTTAWA, ONTARIO

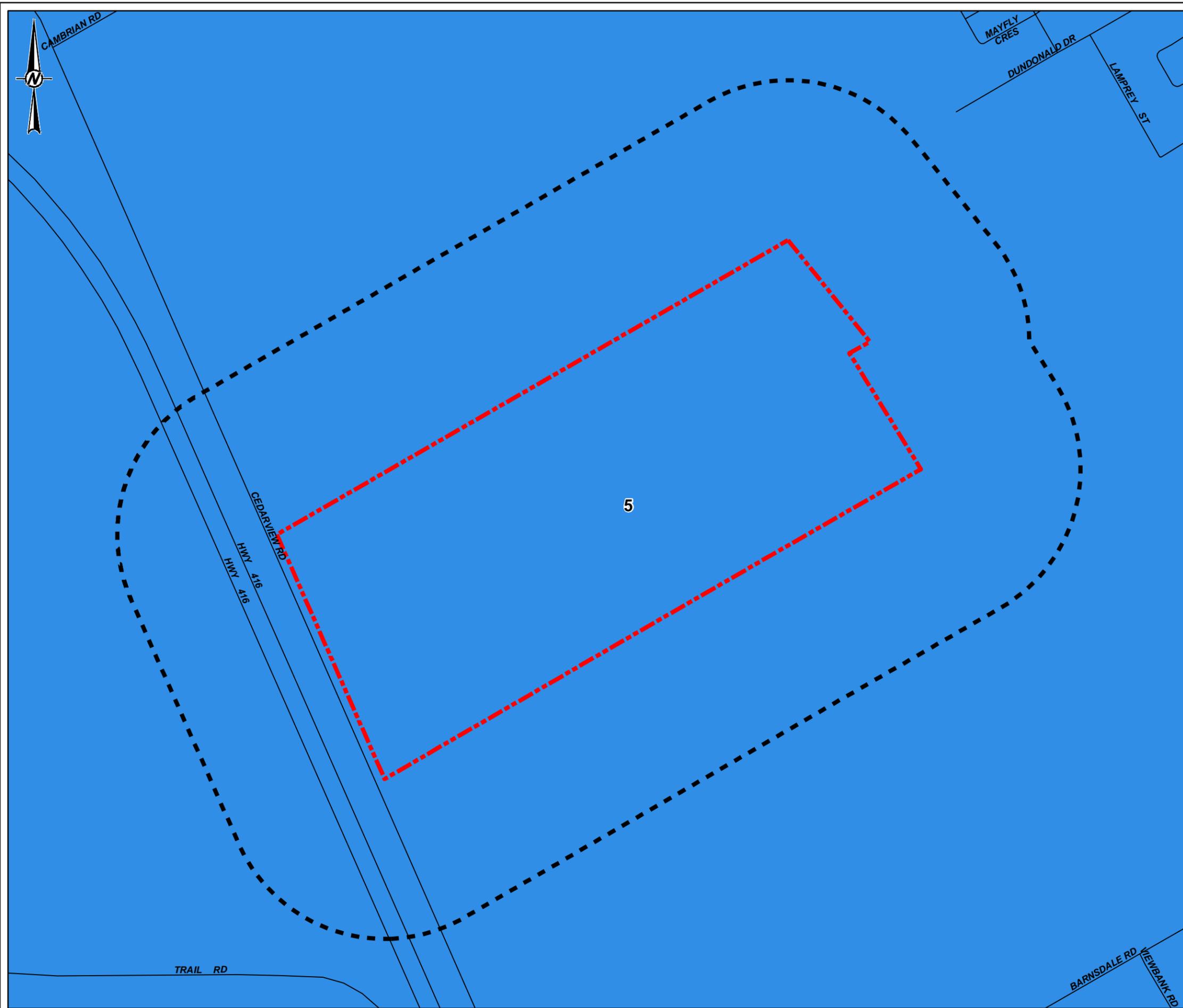
TITLE
SURFICIAL GEOLOGY

CONSULTANT	YYYY-MM-DD	2018-11-14
	DESIGNED	---
	PREPARED	JEM
	REVIEWED	SC
	APPROVED	KPH

PROJECT NO. 18112277	CONTROL 0001	REV. 0	FIGURE 4
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Path: N:\Vector\Spatial_JMC\3809_Borrisokane_Rd\09_PROJ\18112277_CaivanBrazeau_Enviro\0001_PhaseOne_ESA\18112277\2001-HS-0004.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM 28mm



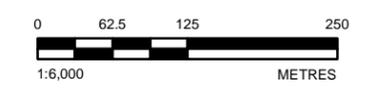
LEGEND

- ROADWAY
- PHASE ONE SITE
- PHASE ONE STUDY AREA
- 5: OXFORD FORMATION - DOLOSTONE, MINOR SHALE AND SANDSTONE

REFERENCE(S)

1. LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES. © QUEENS PRINTER 2014
2. ARMSTRONG, D.K. AND DODGE, J.E.P. 2007. PALEOZOIC GEOLOGY OF SOUTHERN ONTARIO; ONTARIO GEOLOGICAL SURVEY, MISCELLANEOUS RELEASE--DATA 219
3. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

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CLIENT
CAIVAN BRAZEAU DEVELOPMENT CORPORATION

PROJECT
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
3809 BORRISOKANE ROAD, OTTAWA, ONTARIO

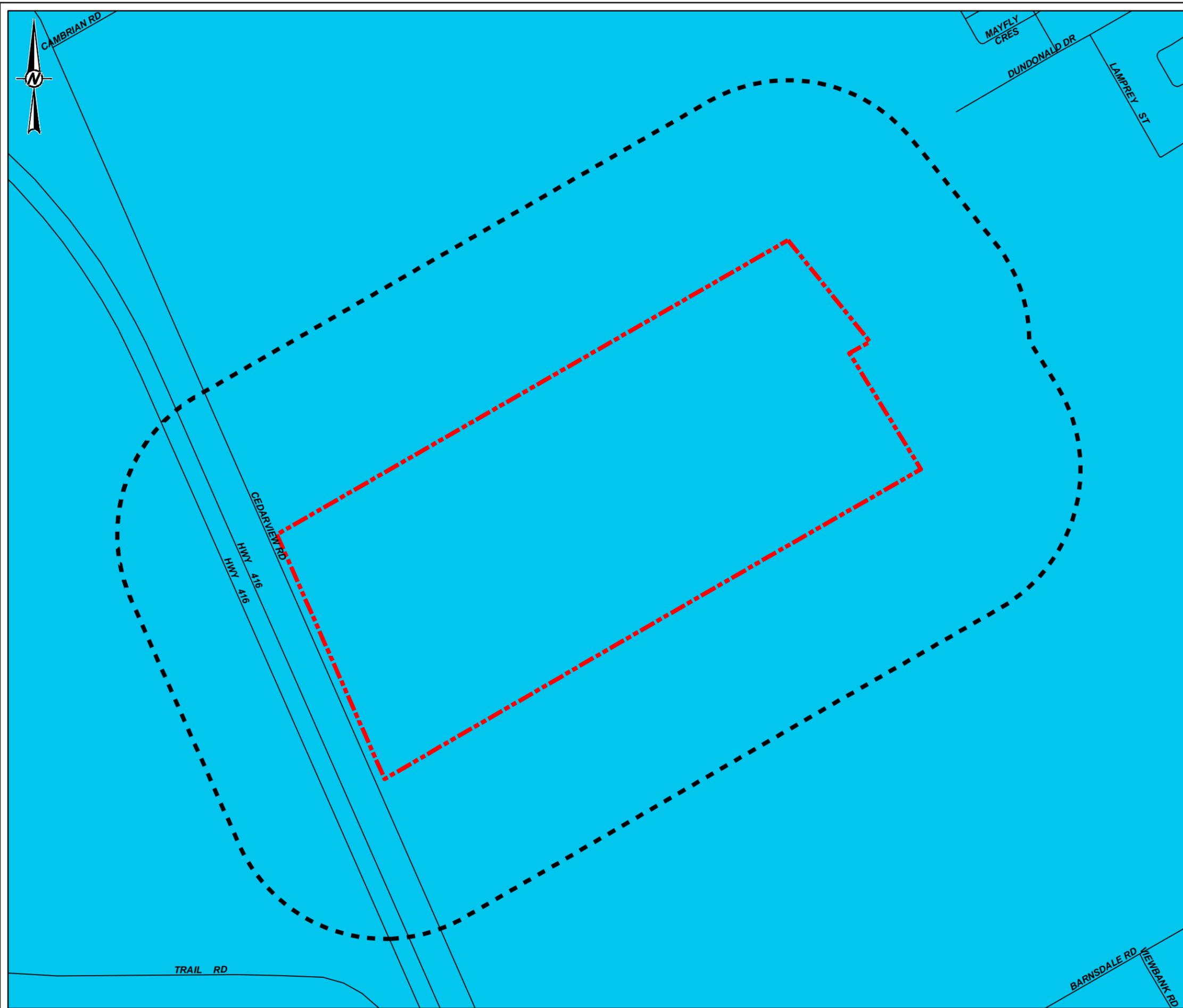
TITLE
BEDROCK GEOLOGY

CONSULTANT	YYYY-MM-DD	2018-11-14
DESIGNED	---	
PREPARED	JEM	
REVIEWED	SC	
APPROVED	KPH	



PROJECT NO. 18112277	CONTROL 0001	REV. 0	FIGURE 5
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM 297mm



LEGEND

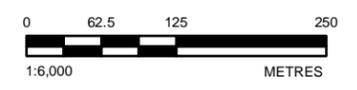
- ROADWAY
- PHASE ONE SITE
- PHASE ONE STUDY AREA

TREND IN DEPTH TO BEDROCK (METRES)

- 15 to 25

REFERENCE(S)

1. LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2014
2. 2010 BÉLANGER, J. R., URBAN GEOLOGY OF THE NATIONAL CAPITAL AREA, GEOLOGICAL SURVEY OF CANADA, OPEN FILE D3256, 2001
3. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28



CLIENT
CAIVAN BRAZEAU DEVELOPMENT CORPORATION

PROJECT
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
3809 BORRISOKANE ROAD, OTTAWA, ONTARIO

TITLE
DRIFT THICKNESS

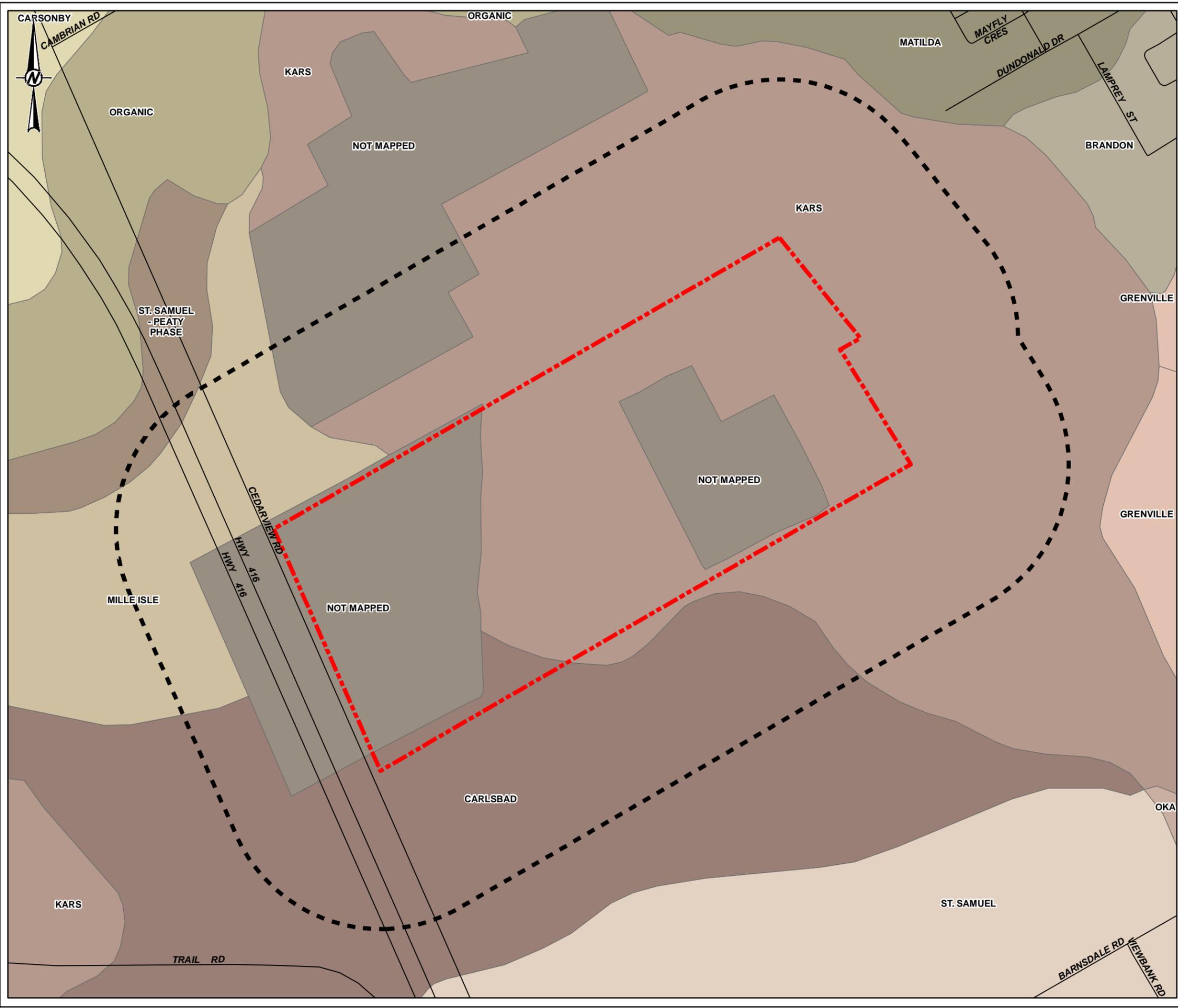
CONSULTANT	YYYY-MM-DD	2018-11-14
DESIGNED	---	
PREPARED	JEM	
REVIEWED	SC	
APPROVED	KPH	



PROJECT NO. 18112277	CONTROL 0001	REV. 0	FIGURE 6
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Path: N:\Vector\Spatial_Images\3809_Borrisokane_Rd\09_PROJ_18112277_CaivanBrazeau_Enviro\0001_PhaseOne_ESA\18112277\2001-HS-000E.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM 297mm

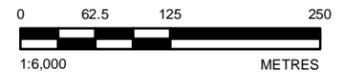


LEGEND

- ROADWAY
- PHASE ONE SITE
- PHASE ONE STUDY AREA
- BRANDON
- CARLSBAD
- CARSONBY
- GRENVILLE
- KARS
- MATILDA
- MILLE ISLE
- NOT MAPPED
- OKA
- ORGANIC
- ST. SAMUEL
- ST. SAMUEL - PEATY PHASE

REFERENCE(S)

1. LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2014
2. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28



CLIENT
CAIVAN BRAZEAU DEVELOPMENT CORPORATION

PROJECT
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
3809 BORRISOKANE ROAD, OTTAWA, ONTARIO

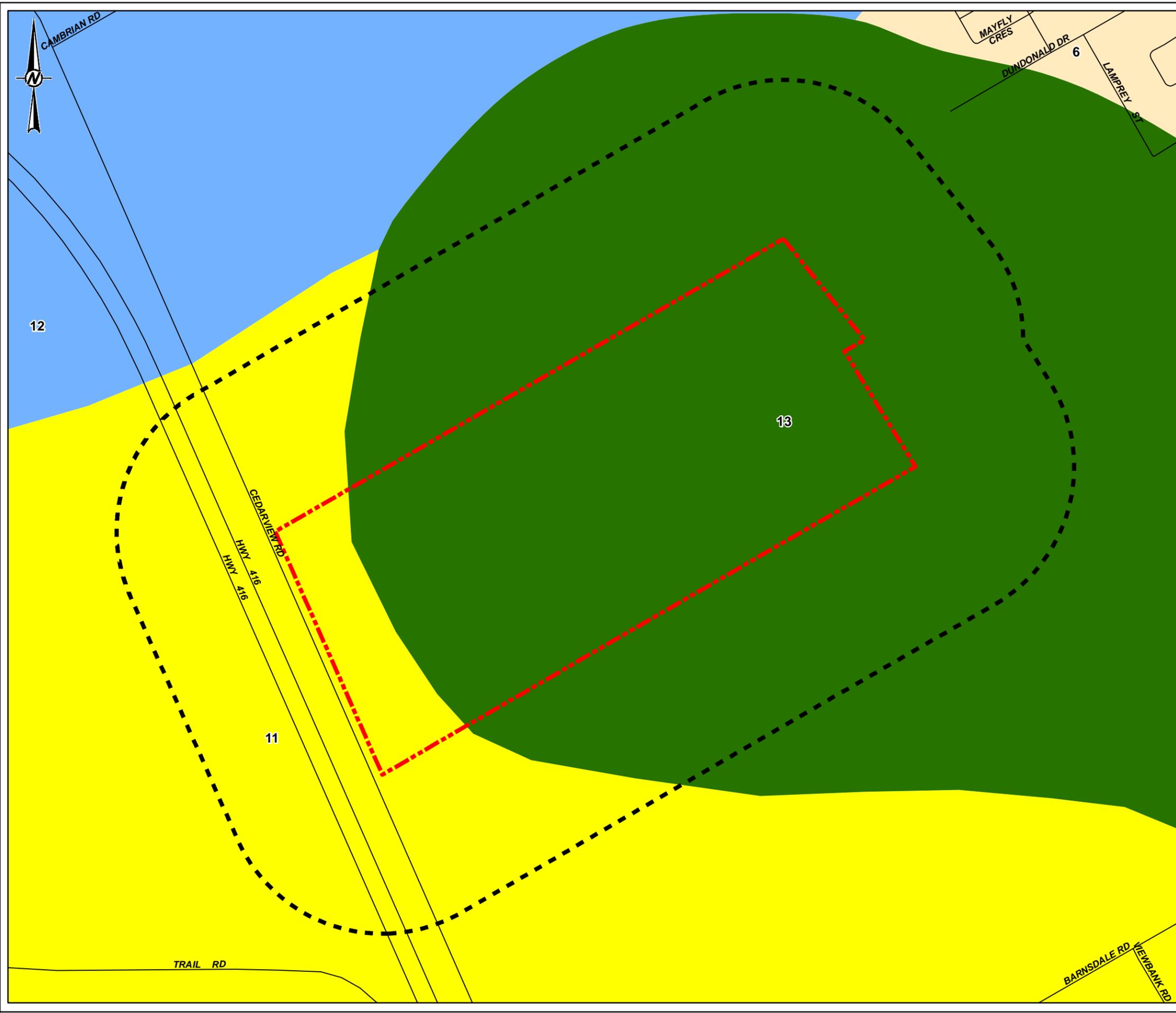
TITLE
SOIL SURVEY COMPLEX (ONTARIO SOILS)

CONSULTANT	YYYY-MM-DD	2018-11-14
DESIGNED	---	
PREPARED	JEM	
REVIEWED	SC	
APPROVED	KPH	

PROJECT NO. 18112277	CONTROL 0001	REV. 0	FIGURE 7
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Path: N:\Vector\Spatial_JM\Chen\3809_Borrisokane_Rd\09_PROJ_18112277_CaivanBrazeau_Enviro\0001_PhaseOne_ESA\18112277\0001_H8-0007.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM 28mm

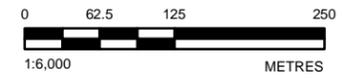


LEGEND

- ROADWAY
- PHASE ONE SITE
- PHASE ONE STUDY AREA
- 6: TILL PLAINS (DRUMLINIZED)
- 11: SAND PLAINS
- 12: CLAY PLAINS
- 13: ESKERS

REFERENCE(S)

1. LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2014
2. CHAPMAN, L.J. AND PUTNAM, D.F. 2007. PHYSIOGRAPHY OF SOUTHERN ONTARIO; ONTARIO GEOLOGICAL SURVEY, MISCELLANEOUS RELEASE-DATA 228
3. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28



CLIENT
CAIVAN BRAZEAU DEVELOPMENT CORPORATION

PROJECT
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
3809 BORRISOKANE ROAD, OTTAWA, ONTARIO

TITLE
PHYSIOGRAPHY MAP

CONSULTANT	YYYY-MM-DD	2018-11-14
DESIGNED	---	
PREPARED	JEM	
REVIEWED	SC	
APPROVED	KPH	

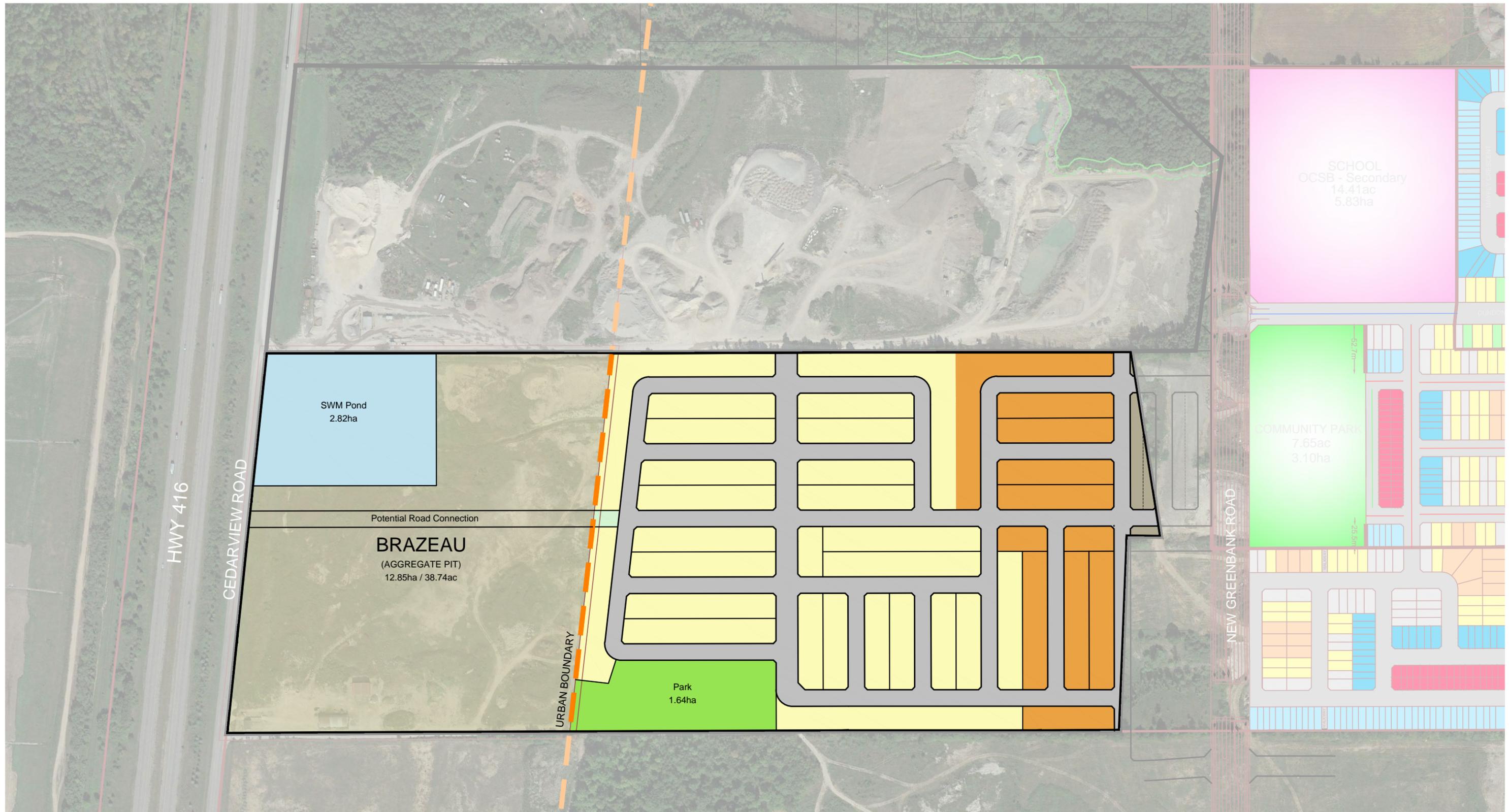
PROJECT NO.	CONTROL	REV.	FIGURE
18112277	0001	0	8

Path: N:\Vector\Spatial_JMC\3809_Borrisokane_Rd\09_PROJ\18112277_CaivanBrazeau_Enviro\0001_PhaseOne_ESA\18112277\2001-HS-0001E.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM 28mm

APPENDIX A

Plan of Survey



DRAFT

- All Units In Metric Unless Otherwise Noted.
- Base Information Obtained From Various Sources And Is Approximate.
- Schedule / Plan Information Is Conceptual And Requires Verification by Appropriate Agency.
- Aerial Photo: Google Earth, Approx. Fall 2016



CAIVAN DRUMMOND/BRAZEAU | Ottawa, Ontario
PRELIMINARY DEVELOPMENT CONCEPT



OCTOBER 30, 2018
 PROJECT 1807
 SCALE 1:4000

SK-05

BRAZEAU LAND USE SUMMARY

Total Site Area	40.35 ha.	99.7 ac.	
NON-DEVELOPABLE			
Aggregate Pit	12.85 ha.	31.75 ac.	
Future Development	0.29 ha.	0.72 ac.	
SWM Pond	2.82 ha.	6.97 ac.	11.6%
Net Developable Site Area	24.39 ha.	60.3 ac.	100.0%
DEVELOPABLE			
Residential (see 'UNIT SUMMARY' Below)	15.08 ha.	37.3 ac.	61.8%
Parks	1.64 ha.	4.05 ac.	6.7%
Walkway / Vista	0.05 ha.	0.12 ac.	0.2%
Right of Way	7.62 ha.	18.8 ac.	31.2%
TOTAL (Developable)	24.39 ha.	60.3 ac.	100.0%

UNIT SUMMARY

	<i>Dpth.</i> (m)	<i>Frntg.</i> (lin.m)	<i>Area</i>		<i>% Net Res.</i>
Townhouses	27.4	1429.4	4.08 ha.	10.1 ac.	27.1%
Detached Homes	27.4	3842.0	11.00 ha.	27.2 ac.	72.9%
Total		5271.4	15.08 ha.	37.26 ac.	100.0%

ROW SCHEDULE

	<i>(m)</i> <i>width</i>	<i>(lin.m)</i>	<i>(lin.m)</i> <i>half width</i>
Collector Road	24.0	378.1	0.0
Local Road	18.0	3566.8	173.1
ROW Total		3944.9	173.1

APPENDIX B

ERIS Report, City Directories

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES



DATABASE REPORT

Project Property: 3809 Borrisokane Road
3809 Borrisokane Road
Nepean ON K2J 0T2
18112277

Project No:

Report Type: Quote - Custom-Build Your Own Report

Order No: 20181107178

Requested by: Golder Associates Ltd.

Date Completed: November 14, 2018

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

www.erisinfo.com

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Executive Summary

Property Information:

Project Property: 3809 Borrisokane Road
3809 Borrisokane Road Nepean ON K2J 0T2

Project No: 18112277

Order Information:

Order No: 20181107178
Date Requested: November 7, 2018
Requested by: Golder Associates Ltd.
Report Type: Quote - Custom-Build Your Own Report

Historical/Products:

Aerial Photographs Aerials - National Collection - .tiff files
City Directory Search CD - Subject Site plus 10 Adjacent Properties

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.25km	Total
AAGR	<i>Abandoned Aggregate Inventory</i>	Y	0	0	0
AGR	<i>Aggregate Inventory</i>	Y	0	0	0
AMIS	<i>Abandoned Mine Information System</i>	Y	0	0	0
ANDR	<i>Anderson's Waste Disposal Sites</i>	Y	0	0	0
AUWR	<i>Automobile Wrecking & Supplies</i>	Y	0	0	0
BORE	<i>Borehole</i>	Y	0	0	0
CA	<i>Certificates of Approval</i>	Y	0	0	0
CFOT	<i>Commercial Fuel Oil Tanks</i>	Y	0	0	0
CHEM	<i>Chemical Register</i>	Y	0	0	0
CNG	<i>Compressed Natural Gas Stations</i>	Y	0	0	0
COAL	<i>Inventory of Coal Gasification Plants and Coal Tar Sites</i>	Y	0	0	0
CONV	<i>Compliance and Convictions</i>	Y	0	0	0
CPU	<i>Certificates of Property Use</i>	Y	0	0	0
DRL	<i>Drill Hole Database</i>	Y	0	0	0
DRYCLEANERS	<i>Dry Cleaning Facilities</i>	Y	0	0	0
EASR	<i>Environmental Activity and Sector Registry</i>	Y	0	0	0
EBR	<i>Environmental Registry</i>	Y	0	0	0
ECA	<i>Environmental Compliance Approval</i>	Y	0	1	1
EEM	<i>Environmental Effects Monitoring</i>	Y	0	0	0
EHS	<i>ERIS Historical Searches</i>	Y	0	0	0
EIIS	<i>Environmental Issues Inventory System</i>	Y	0	0	0
EMHE	<i>Emergency Management Historical Event</i>	Y	0	0	0
EXP	<i>List of TSSA Expired Facilities</i>	Y	0	0	0
FCON	<i>Federal Convictions</i>	Y	0	0	0
FCS	<i>Contaminated Sites on Federal Land</i>	Y	0	0	0
FOFT	<i>Fisheries & Oceans Fuel Tanks</i>	Y	0	0	0
FST	<i>Fuel Storage Tank</i>	Y	0	0	0
FSTH	<i>Fuel Storage Tank - Historic</i>	Y	0	0	0
GEN	<i>Ontario Regulation 347 Waste Generators Summary</i>	Y	0	0	0
GHG	<i>Greenhouse Gas Emissions from Large Facilities</i>	Y	0	0	0
HINC	<i>TSSA Historic Incidents</i>	Y	0	0	0
IAFT	<i>Indian & Northern Affairs Fuel Tanks</i>	Y	0	0	0
INC	<i>TSSA Incidents</i>	Y	0	0	0
LIMO	<i>Landfill Inventory Management Ontario</i>	Y	0	0	0
MINE	<i>Canadian Mine Locations</i>	Y	0	0	0
MISA PENALTY	<i>Environmental Penalty Annual Report</i>	Y	0	0	0

Database	Name	Searched	Project Property	Boundary to 0.25km	Total
MNR	<i>Mineral Occurrences</i>	Y	0	0	0
NATE	<i>National Analysis of Trends in Emergencies System (NATES)</i>	Y	0	0	0
NCPL	<i>Non-Compliance Reports</i>	Y	0	0	0
NDFT	<i>National Defense & Canadian Forces Fuel Tanks</i>	Y	0	0	0
NDSP	<i>National Defense & Canadian Forces Spills</i>	Y	0	0	0
NDWD	<i>National Defence & Canadian Forces Waste Disposal Sites</i>	Y	0	0	0
NEBI	<i>National Energy Board Pipeline Incidents</i>	Y	0	0	0
NEBW	<i>National Energy Board Wells</i>	Y	0	0	0
NEES	<i>National Environmental Emergencies System (NEES)</i>	Y	0	0	0
NPCB	<i>National PCB Inventory</i>	Y	0	0	0
NPRI	<i>National Pollutant Release Inventory</i>	Y	0	0	0
OGW	<i>Oil and Gas Wells</i>	Y	0	0	0
OOGW	<i>Ontario Oil and Gas Wells</i>	Y	0	0	0
OPCB	<i>Inventory of PCB Storage Sites</i>	Y	0	0	0
ORD	<i>Orders</i>	Y	0	0	0
PAP	<i>Canadian Pulp and Paper</i>	Y	0	0	0
PCFT	<i>Parks Canada Fuel Storage Tanks</i>	Y	0	0	0
PES	<i>Pesticide Register</i>	Y	0	0	0
PINC	<i>TSSA Pipeline Incidents</i>	Y	0	0	0
PRT	<i>Private and Retail Fuel Storage Tanks</i>	Y	0	0	0
PTTW	<i>Permit to Take Water</i>	Y	0	0	0
REC	<i>Ontario Regulation 347 Waste Receivers Summary</i>	Y	0	0	0
RSC	<i>Record of Site Condition</i>	Y	0	0	0
RST	<i>Retail Fuel Storage Tanks</i>	Y	0	0	0
SCT	<i>Scott's Manufacturing Directory</i>	Y	0	0	0
SPL	<i>Ontario Spills</i>	Y	0	0	0
SRDS	<i>Wastewater Discharger Registration Database</i>	Y	0	0	0
TANK	<i>Anderson's Storage Tanks</i>	Y	0	0	0
TCFT	<i>Transport Canada Fuel Storage Tanks</i>	Y	0	0	0
VAR	<i>TSSA Variances for Abandonment of Underground Storage Tanks</i>	Y	0	0	0
WDS	<i>Waste Disposal Sites - MOE CA Inventory</i>	Y	0	0	0
WDSH	<i>Waste Disposal Sites - MOE 1991 Historical Approval Inventory</i>	Y	0	0	0
WWIS	<i>Water Well Information System</i>	Y	1	3	4
Total:			1	4	5

Executive Summary: Site Report Summary - Project Property

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist (m)</i>	<i>Elev diff (m)</i>	<i>Page Number</i>
1	WWIS		lot 8 con 3 ON <i>Well ID:</i> 1528163	-/0.0	-6.18	12

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
<u>2</u>	WWIS		Ottawa ON Well ID: 7277726	W/118.3	-6.83	<u>15</u>
<u>3</u>	WWIS		Ottawa ON Well ID: 7277725	WSW/129.1	-5.62	<u>18</u>
<u>4</u>	WWIS		Ottawa ON Well ID: 7130131	W/177.8	-5.88	<u>20</u>
<u>5</u>	ECA	Mattamy (Half Moon Bay 3) Limited	Ref. Plan 5R-1 3009, 5R-1 6254 Ottawa ON K2S 1B9	NNE/212.1	-9.35	<u>27</u>

Executive Summary: Summary By Data Source

ECA - Environmental Compliance Approval

A search of the ECA database, dated Oct 2011-Sep 30, 2018 has found that there are 1 ECA site(s) within approximately 0.25 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Mattamy (Half Moon Bay 3) Limited	Ref. Plan 5R-1 3009, 5R-1 6254 Ottawa ON K2S 1B9	212.1	<u>5</u>

WWIS - Water Well Information System

A search of the WWIS database, dated Dec 31, 2017 has found that there are 4 WWIS site(s) within approximately 0.25 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	lot 8 con 3 ON <i>Well ID: 1528163</i>	0.0	<u>1</u>
	Ottawa ON <i>Well ID: 7277726</i>	118.3	<u>2</u>
	Ottawa ON <i>Well ID: 7277725</i>	129.1	<u>3</u>
	Ottawa ON <i>Well ID: 7130131</i>	177.8	<u>4</u>



Map : 0.25 Kilometer Radius

Order No: 20181107178

Address: 3809 Borrisokane Road, Nepean, ON, K2J 0T2



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



Aerial (2017)

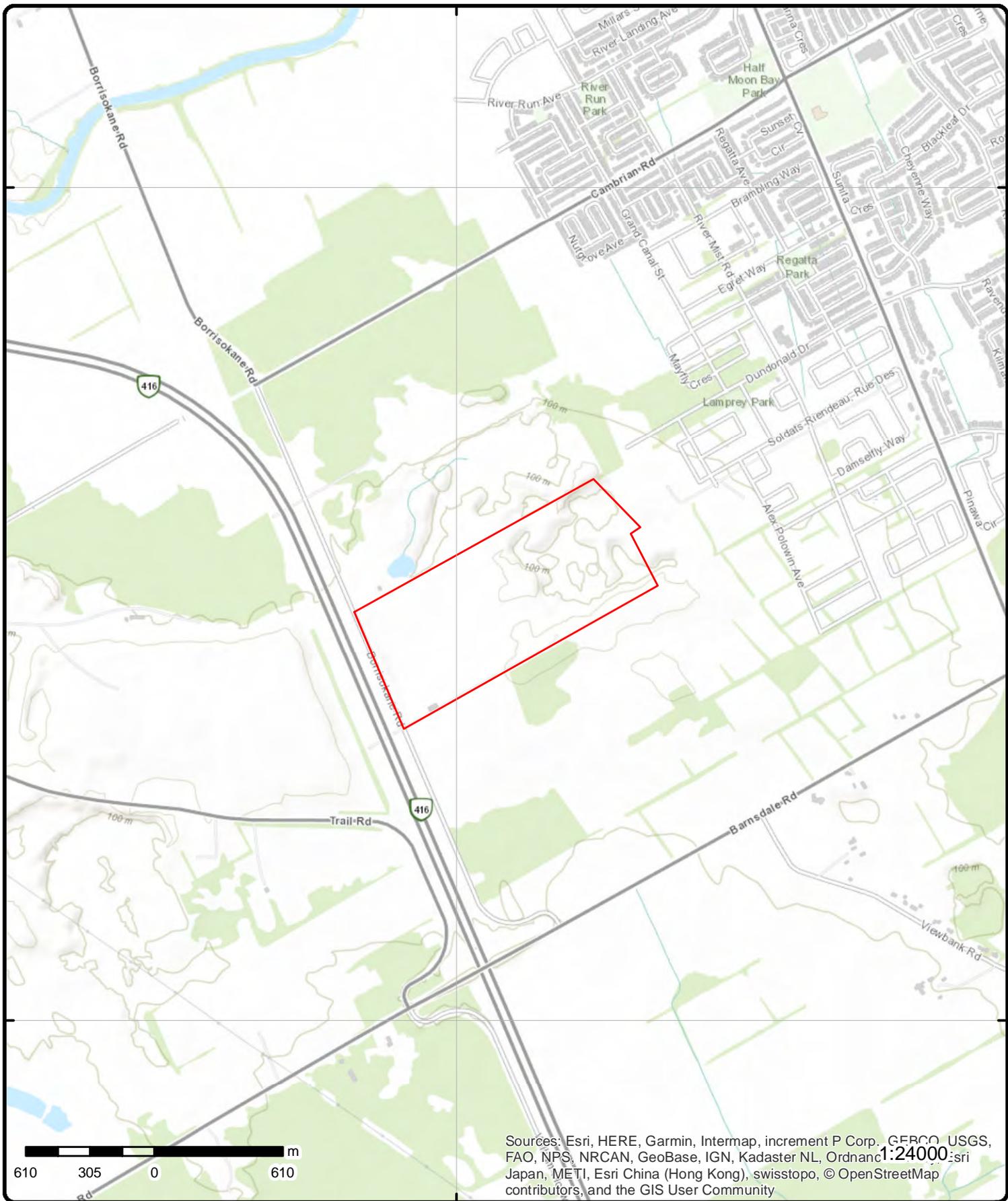
Address: 3809 Borrisokane Road, Nepean, ON, K2J 0T2

Source: ESRI World Imagery

Order No: 20181107178



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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

Topographic Map

Address: 3809 Borrisokane Road, Nepean, ON, K2J 0T2

Source: ESRI World Topographic Map

Order No: 20181107178



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Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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<u>1</u>	1 of 1	-/0.0	104.6 / -6.18	lot 8 con 3 ON	WWIS
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<p>Well ID: 1528163</p> <p>Construction Date:</p> <p>Primary Water Use: Domestic</p> <p>Sec. Water Use:</p> <p>Final Well Status: Water Supply</p> <p>Water Type:</p> <p>Casing Material:</p> <p>Audit No: 137477</p> <p>Tag:</p> <p>Construction Method:</p> <p>Elevation (m):</p> <p>Elevation Reliability:</p> <p>Depth to Bedrock:</p> <p>Well Depth:</p> <p>Overburden/Bedrock:</p> <p>Pump Rate:</p> <p>Static Water Level:</p> <p>Flowing (Y/N):</p> <p>Flow Rate:</p> <p>Clear/Cloudy:</p>	<p>Data Entry Status:</p> <p>Data Src: 1</p> <p>Date Received: 11/6/1994</p> <p>Selected Flag: Yes</p> <p>Abandonment Rec:</p> <p>Contractor: 3644</p> <p>Form Version: 1</p> <p>Owner:</p> <p>Street Name:</p> <p>County: OTTAWA-CARLETON</p> <p>Municipality: NEPEAN TOWNSHIP</p> <p>Site Info:</p> <p>Lot: 008</p> <p>Concession: 03</p> <p>Concession Name: RF</p> <p>Easting NAD83:</p> <p>Northing NAD83:</p> <p>Zone:</p> <p>UTM Reliability:</p>
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Bore Hole Information

<p>Bore Hole ID: 10049702</p> <p>DP2BR: 31</p> <p>Spatial Status:</p> <p>Code OB: r</p> <p>Code OB Desc: Bedrock</p> <p>Open Hole:</p> <p>Cluster Kind:</p> <p>Date Completed: 15-AUG-94</p> <p>Remarks:</p> <p>Elevrc Desc:</p> <p>Location Source Date:</p> <p>Improvement Location Source:</p> <p>Improvement Location Method:</p> <p>Source Revision Comment:</p> <p>Supplier Comment:</p>	<p>Elevation: 107.44</p> <p>Elevrc:</p> <p>Zone: 18</p> <p>East83: 441702.7</p> <p>Org CS:</p> <p>North83: 5009839</p> <p>UTMRC: 9</p> <p>UTMRC Desc: unknown UTM</p> <p>Location Method: lot</p>
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Overburden and Bedrock Materials Interval

Formation ID: 931068794

Layer: 3

Color: 2

General Color: GREY

Mat1: 15

Most Common Material: LIMESTONE

Mat2:

Other Materials:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Mat3:					
Other Materials:					
Formation Top Depth:		31			
Formation End Depth:		150			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		931068792			
Layer:		1			
Color:		2			
General Color:		GREY			
Mat1:		05			
Most Common Material:		CLAY			
Mat2:		12			
Other Materials:		STONES			
Mat3:					
Other Materials:					
Formation Top Depth:		0			
Formation End Depth:		22			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		931068795			
Layer:		4			
Color:		2			
General Color:		GREY			
Mat1:		18			
Most Common Material:		SANDSTONE			
Mat2:		74			
Other Materials:		LAYERED			
Mat3:					
Other Materials:					
Formation Top Depth:		150			
Formation End Depth:		223			
Formation End Depth UOM:		ft			
<u>Overburden and Bedrock Materials Interval</u>					
Formation ID:		931068793			
Layer:		2			
Color:		2			
General Color:		GREY			
Mat1:		14			
Most Common Material:		HARDPAN			
Mat2:		11			
Other Materials:		GRAVEL			
Mat3:					
Other Materials:					
Formation Top Depth:		22			
Formation End Depth:		31			
Formation End Depth UOM:		ft			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		961528163			
Method Construction Code:		5			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Method Construction:		Air Percussion			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		10598272			
Casing No:		1			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		930086871			
Layer:		1			
Material:		1			
Open Hole or Material:		STEEL			
Depth From:					
Depth To:		35			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Construction Record - Casing</u>					
Casing ID:		930086872			
Layer:		2			
Material:		4			
Open Hole or Material:		OPEN HOLE			
Depth From:					
Depth To:		223			
Casing Diameter:		6			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			
<u>Results of Well Yield Testing</u>					
Pump Test ID:		991528163			
Pump Set At:					
Static Level:		10			
Final Level After Pumping:		120			
Recommended Pump Depth:		120			
Pumping Rate:		12			
Flowing Rate:					
Recommended Pump Rate:		10			
Levels UOM:		ft			
Rate UOM:		GPM			
Water State After Test Code:		2			
Water State After Test:		CLOUDY			
Pumping Test Method:		1			
Pumping Duration HR:		1			
Pumping Duration MIN:		0			
Flowing:		N			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934656556			
Test Type:		Recovery			
Test Duration:		45			
Test Level:		10			
Test Level UOM:		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934905348			
Test Type:		Recovery			
Test Duration:		60			
Test Level:		10			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934112419			
Test Type:		Recovery			
Test Duration:		15			
Test Level:		11			
Test Level UOM:		ft			
<u>Draw Down & Recovery</u>					
Pump Test Detail ID:		934387228			
Test Type:		Recovery			
Test Duration:		30			
Test Level:		10			
Test Level UOM:		ft			
<u>Water Details</u>					
Water ID:		933487758			
Layer:		2			
Kind Code:		5			
Kind:		Not stated			
Water Found Depth:		218			
Water Found Depth UOM:		ft			
<u>Water Details</u>					
Water ID:		933487757			
Layer:		1			
Kind Code:		5			
Kind:		Not stated			
Water Found Depth:		150			
Water Found Depth UOM:		ft			

2 1 of 1 **W/118.3** **103.9 / -6.83** **Ottawa ON** **WWIS**

Well ID:	7277726	Data Entry Status:	
Construction Date:		Data Src:	
Primary Water Use:	Test Hole	Date Received:	12/23/2016
Sec. Water Use:		Selected Flag:	Yes
Final Well Status:	Monitoring and Test Hole	Abandonment Rec:	
Water Type:		Contractor:	7241
Casing Material:		Form Version:	7
Audit No:	Z238154	Owner:	
Tag:	A190844	Street Name:	TRAIL ROAD LANDFILL
Construction Method:		County:	OTTAWA-CARLETON
Elevation (m):		Municipality:	NEPEAN TOWNSHIP
Elevation Reliability:		Site Info:	
Depth to Bedrock:		Lot:	
Well Depth:		Concession:	
Overburden/Bedrock:		Concession Name:	
Pump Rate:		Easting NAD83:	
Static Water Level:		Northing NAD83:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
<u>Bore Hole Information</u>					
Bore Hole ID:	1006320626			Elevation:	102.61
DP2BR:				Elevrc:	
Spatial Status:				Zone:	18
Code OB:				East83:	440681
Code OB Desc:				Org CS:	UTM83
Open Hole:				North83:	5009540
Cluster Kind:				UTMRC:	4
Date Completed:	23-NOV-16			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	1006516858				
Layer:	2				
Color:	6				
General Color:	BROWN				
Mat1:	28				
Most Common Material:	SAND				
Mat2:	11				
Other Materials:	GRAVEL				
Mat3:	77				
Other Materials:	LOOSE				
Formation Top Depth:	.31				
Formation End Depth:	3.35				
Formation End Depth UOM:	m				
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:	1006516857				
Layer:	1				
Color:	6				
General Color:	BROWN				
Mat1:	02				
Most Common Material:	TOPSOIL				
Mat2:					
Other Materials:					
Mat3:	85				
Other Materials:	SOFT				
Formation Top Depth:	0				
Formation End Depth:	.31				
Formation End Depth UOM:	m				
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:	1006516865				
Layer:	1				
Plug From:	0				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Plug To:		.31			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1006516866			
Layer:		2			
Plug From:		.31			
Plug To:		1.52			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1006516867			
Layer:		3			
Plug From:		1.52			
Plug To:		3.35			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1006516864			
Method Construction Code:		6			
Method Construction:		Boring			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1006516856			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1006516861			
Layer:		1			
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:		0			
Depth To:		1.83			
Casing Diameter:		5.2			
Casing Diameter UOM:		cm			
Casing Depth UOM:		m			
<u>Construction Record - Screen</u>					
Screen ID:		1006516862			
Layer:		1			
Slot:		10			
Screen Top Depth:		1.83			
Screen End Depth:		3.35			
Screen Material:		5			
Screen Depth UOM:		m			
Screen Diameter UOM:		cm			
Screen Diameter:		6.03			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>Water Details</u>					
Water ID:		1006516860			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		m			
<u>Hole Diameter</u>					
Hole ID:		1006516859			
Diameter:		15.24			
Depth From:		0			
Depth To:		3.35			
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			

<u>3</u>	1 of 1	WSW/129.1	105.1 / -5.62	Ottawa ON	WWIS
Well ID:	7277725			Data Entry Status:	
Construction Date:				Data Src:	
Primary Water Use:	Test Hole			Date Received:	12/23/2016
Sec. Water Use:				Selected Flag:	Yes
Final Well Status:	Monitoring and Test Hole			Abandonment Rec:	
Water Type:				Contractor:	7241
Casing Material:				Form Version:	7
Audit No:	Z238155			Owner:	
Tag:	A190843			Street Name:	TRAIL ROAD LANDFILL
Construction Method:				County:	OTTAWA-CARLETON
Elevation (m):				Municipality:	NEPEAN TOWNSHIP
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					

Bore Hole Information

Bore Hole ID:	1006320623	Elevation:	104.81
DP2BR:		Elevrc:	
Spatial Status:		Zone:	18
Code OB:		East83:	440744
Code OB Desc:		Org CS:	UTM83
Open Hole:		North83:	5009359
Cluster Kind:		UTMRC:	4
Date Completed:	25-NOV-16	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock
Materials Interval

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Formation ID:		1006516845			
Layer:		1			
Color:		6			
General Color:		BROWN			
Mat1:		02			
Most Common Material:		TOPSOIL			
Mat2:		28			
Other Materials:		SAND			
Mat3:		85			
Other Materials:		SOFT			
Formation Top Depth:		0			
Formation End Depth:		.31			
Formation End Depth UOM:		m			
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:		1006516846			
Layer:		2			
Color:		6			
General Color:		BROWN			
Mat1:		28			
Most Common Material:		SAND			
Mat2:		11			
Other Materials:		GRAVEL			
Mat3:		85			
Other Materials:		SOFT			
Formation Top Depth:		.31			
Formation End Depth:		3.35			
Formation End Depth UOM:		m			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		1006516853			
Layer:		1			
Plug From:		0			
Plug To:		.31			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		1006516855			
Layer:		3			
Plug From:		1.52			
Plug To:		3.35			
Plug Depth UOM:		m			
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:		1006516854			
Layer:		2			
Plug From:		.31			
Plug To:		1.52			
Plug Depth UOM:		m			
<u>Method of Construction & Well</u>					
<u>Use</u>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Method Construction ID:		1006516852			
Method Construction Code:		6			
Method Construction:		Boring			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1006516844			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1006516849			
Layer:		1			
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:		0			
Depth To:		1.83			
Casing Diameter:		5.2			
Casing Diameter UOM:		cm			
Casing Depth UOM:		m			
<u>Construction Record - Screen</u>					
Screen ID:		1006516850			
Layer:		1			
Slot:		10			
Screen Top Depth:		1.83			
Screen End Depth:		3.35			
Screen Material:		5			
Screen Depth UOM:		m			
Screen Diameter UOM:		cm			
Screen Diameter:		6.03			
<u>Water Details</u>					
Water ID:		1006516848			
Layer:					
Kind Code:					
Kind:					
Water Found Depth:					
Water Found Depth UOM:		m			
<u>Hole Diameter</u>					
Hole ID:		1006516847			
Diameter:		15.24			
Depth From:		0			
Depth To:		3.35			
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			

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1 of 1

W/177.8

104.9 / -5.88

Ottawa ON

WWIS

Well ID: 7130131
Construction Date:
Primary Water Use: Monitoring and Test Hole
Sec. Water Use: 0

Data Entry Status:
Data Src:
Date Received: 9/22/2009
Selected Flag: Yes

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Final Well Status:	Monitoring and Test Hole			Abandonment Rec:	
Water Type:				Contractor:	7241
Casing Material:				Form Version:	5
Audit No:	M02588			Owner:	
Tag:	A087279			Street Name:	4375 TRAIL RD.
Construction Method:				County:	OTTAWA-CARLETON
Elevation (m):				Municipality:	OTTAWA CITY
Elevation Reliability:				Site Info:	
Depth to Bedrock:				Lot:	
Well Depth:				Concession:	
Overburden/Bedrock:				Concession Name:	
Pump Rate:				Easting NAD83:	
Static Water Level:				Northing NAD83:	
Flowing (Y/N):				Zone:	
Flow Rate:				UTM Reliability:	
Clear/Cloudy:					
<u>Bore Hole Information</u>					
Bore Hole ID:	1002827507			Elevation:	105.89
DP2BR:				Elevrc:	
Spatial Status:				Zone:	18
Code OB:				East83:	440684
Code OB Desc:				Org CS:	UTM83
Open Hole:				North83:	5009402
Cluster Kind:	This is a record from cluster log sheet			UTMRC:	3
Date Completed:	27-AUG-09			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1002827511				
Layer:					
Plug From:					
Plug To:					
Plug Depth UOM:					
<u>Method of Construction & Well Use</u>					
Method Construction ID:	1002827510				
Method Construction Code:					
Method Construction:					
Other Method Construction:	DIRECT PUSH				
<u>Pipe Information</u>					
Pipe ID:	1002827512				
Casing No:	0				
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:	1002827514				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Layer:					
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:					
Depth To:		2.74			
Casing Diameter:					
Casing Diameter UOM:					
Casing Depth UOM:		m			
<u>Construction Record - Screen</u>					
Screen ID:		1002827513			
Layer:					
Slot:					
Screen Top Depth:		2.74			
Screen End Depth:		3.66			
Screen Material:					
Screen Depth UOM:		m			
Screen Diameter UOM:					
Screen Diameter:					
<u>Results of Well Yield Testing</u>					
Pump Test ID:		1002827515			
Pump Set At:					
Static Level:					
Final Level After Pumping:					
Recommended Pump Depth:					
Pumping Rate:					
Flowing Rate:					
Recommended Pump Rate:					
Levels UOM:					
Rate UOM:					
Water State After Test Code:					
Water State After Test:					
Pumping Test Method:					
Pumping Duration HR:					
Pumping Duration MIN:					
Flowing:					
<u>Hole Diameter</u>					
Hole ID:		1002827509			
Diameter:		8.25			
Depth From:					
Depth To:		3.66			
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			
<u>Bore Hole Information</u>					
Bore Hole ID:	1002827498			Elevation:	106.24
DP2BR:				Elevrc:	
Spatial Status:				Zone:	18
Code OB:				East83:	440748
Code OB Desc:				Org CS:	UTM83
Open Hole:				North83:	5009219
Cluster Kind:	This is a record from cluster log sheet			UTMRC:	3
Date Completed:	27-AUG-09			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1002827502			
Layer:					
Plug From:					
Plug To:					
Plug Depth UOM:					
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1002827501			
Method Construction Code:					
Method Construction:					
Other Method Construction:		DIRECT PUSH			
<u>Pipe Information</u>					
Pipe ID:		1002827503			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1002827505			
Layer:					
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:					
Depth To:		2.13			
Casing Diameter:					
Casing Diameter UOM:					
Casing Depth UOM:		m			
<u>Construction Record - Screen</u>					
Screen ID:		1002827504			
Layer:					
Slot:					
Screen Top Depth:		2.13			
Screen End Depth:		3.1			
Screen Material:					
Screen Depth UOM:		m			
Screen Diameter UOM:					
Screen Diameter:					
<u>Results of Well Yield Testing</u>					
Pump Test ID:		1002827506			
Pump Set At:					
Static Level:					
Final Level After Pumping:					
Recommended Pump Depth:					
Pumping Rate:					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Flowing Rate: Recommended Pump Rate: Levels UOM: Rate UOM: Water State After Test Code: Water State After Test: Pumping Test Method: Pumping Duration HR: Pumping Duration MIN: Flowing:					
<u>Hole Diameter</u>					
Hole ID:			1002827500		
Diameter:			8.25		
Depth From:					
Depth To:			3.1		
Hole Depth UOM:			m		
Hole Diameter UOM:			cm		
<u>Bore Hole Information</u>					
Bore Hole ID:	1002723968			Elevation:	107.01
DP2BR:				Elevrc:	
Spatial Status:				Zone:	18
Code OB:				East83:	440833
Code OB Desc:				Org CS:	UTM83
Open Hole:				North83:	5009011
Cluster Kind:				UTMRC:	4
Date Completed:	27-AUG-09			UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Overburden and Bedrock</u>					
<u>Materials Interval</u>					
Formation ID:			1002827526		
Layer:			1		
Color:			6		
General Color:			BROWN		
Mat1:			28		
Most Common Material:			SAND		
Mat2:			06		
Other Materials:			SILT		
Mat3:			85		
Other Materials:			SOFT		
Formation Top Depth:			0		
Formation End Depth:			4.27		
Formation End Depth UOM:			m		
<u>Annular Space/Abandonment</u>					
<u>Sealing Record</u>					
Plug ID:			1002827528		
Layer:			1		
Plug From:			0		
Plug To:			.31		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Plug Depth UOM:		m			
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:		1002827529			
Layer:		2			
Plug From:		3.1			
Plug To:		4.27			
Plug Depth UOM:		m			
<u>Method of Construction & Well Use</u>					
Method Construction ID:		1002827534			
Method Construction Code:		D			
Method Construction:		Direct Push			
Other Method Construction:					
<u>Pipe Information</u>					
Pipe ID:		1002827525			
Casing No:		0			
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:		1002827530			
Layer:		1			
Material:		5			
Open Hole or Material:		PLASTIC			
Depth From:		0			
Depth To:		3.35			
Casing Diameter:		2.61			
Casing Diameter UOM:		cm			
Casing Depth UOM:		m			
<u>Construction Record - Screen</u>					
Screen ID:		1002827531			
Layer:		1			
Slot:		10			
Screen Top Depth:					
Screen End Depth:					
Screen Material:		5			
Screen Depth UOM:		m			
Screen Diameter UOM:		cm			
Screen Diameter:		3.34			
<u>Hole Diameter</u>					
Hole ID:		1002827527			
Diameter:		8.25			
Depth From:		0			
Depth To:		4.27			
Hole Depth UOM:		m			
Hole Diameter UOM:		cm			
<u>Bore Hole Information</u>					

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance (m)</i>	<i>Elev/Diff (m)</i>	<i>Site</i>	<i>DB</i>
Bore Hole ID:	1002827516			Elevation:	103.93
DP2BR:				Elevrc:	
Spatial Status:				Zone:	18
Code OB:				East83:	440616
Code OB Desc:				Org CS:	UTM83
Open Hole:				North83:	5009552
Cluster Kind:	This is a record from cluster log sheet			UTMRC:	3
Date Completed:	27-AUG-09			UTMRC Desc:	margin of error : 10 - 30 m
Remarks:				Location Method:	wwr
Elevrc Desc:					
Location Source Date:					
Improvement Location Source:					
Improvement Location Method:					
Source Revision Comment:					
Supplier Comment:					
<u>Annular Space/Abandonment Sealing Record</u>					
Plug ID:	1002827520				
Layer:					
Plug From:					
Plug To:					
Plug Depth UOM:					
<u>Method of Construction & Well Use</u>					
Method Construction ID:	1002827519				
Method Construction Code:					
Method Construction:					
Other Method Construction:	DIRECT PUSH				
<u>Pipe Information</u>					
Pipe ID:	1002827521				
Casing No:	0				
Comment:					
Alt Name:					
<u>Construction Record - Casing</u>					
Casing ID:	1002827523				
Layer:					
Material:	5				
Open Hole or Material:	PLASTIC				
Depth From:					
Depth To:	2.13				
Casing Diameter:					
Casing Diameter UOM:					
Casing Depth UOM:	m				
<u>Construction Record - Screen</u>					
Screen ID:	1002827522				
Layer:					
Slot:					
Screen Top Depth:	2.13				
Screen End Depth:	3.1				
Screen Material:					
Screen Depth UOM:	m				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Screen Diameter UOM:
Screen Diameter:

Results of Well Yield Testing

Pump Test ID: 1002827524
Pump Set At:
Static Level:
Final Level After Pumping:
Recommended Pump Depth:
Pumping Rate:
Flowing Rate:
Recommended Pump Rate:
Levels UOM:
Rate UOM:
Water State After Test Code:
Water State After Test:
Pumping Test Method:
Pumping Duration HR:
Pumping Duration MIN:
Flowing:

Hole Diameter

Hole ID: 1002827518
Diameter: 8.25
Depth From:
Depth To: 3.1
Hole Depth UOM: m
Hole Diameter UOM: cm

<u>5</u>	1 of 1	NNE/212.1	101.4 / -9.35	Mattamy (Half Moon Bay 3) Limited Ref. Plan 5R-1 3009, 5R-1 6254 Ottawa ON K2S 1B9	ECA
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Approval No:	0173-8GBHW6	SWP Area Name:	Rideau Valley
Approval Date:	2011-04-29	MOE District:	Ottawa
Status:	Revoked and/or Replaced	City:	Ottawa
Record Type:	ECA	Longitude:	-75.7448
Link Source:	IDS	Latitude:	45.2431
Approval Type:	ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS		
Project Type:	MUNICIPAL AND PRIVATE SEWAGE WORKS		
Address:	Ref. Plan 5R-1 3009, 5R-1 6254		
Full Address:			
Full PDF Link:	https://www.accessenvironment.ene.gov.on.ca/instruments/8172-8EXHTP-14.pdf		

Unplottable Summary

Total: **9** Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
CA	NEPEAN CITY	CEDARVIEW RD/BARRHAVEN MID.SCH	NEPEAN CITY ON	
CA	MINTO CONSTRUCTION LTD. FOSTER DRAIN	W. OF CEDARVIEW RD.	NEPEAN CITY ON	
CA	Mattamy (Half Moon Bay 3) Limited		Ottawa ON	
CA	Mattamy (Half Moon Bay 3) Limited	Ref. Plan 5R-1 3009, 5R-1 6254	Ottawa ON	
ECA	Mattamy (Half Moon Bay 3) Limited		Ottawa ON	K2S 1B9
SPL	Transport Company 2352357 Ontario Inc<UNOFFICIAL>	Hwy 416 Mile Marker 57 near Bankfield Rd	Ottawa ON	
SPL		HWY 416 1km North of RogerStevens Dr.	Ottawa ON	
SPL	Little Rock Transportation Ltd.<UNOFFICIAL>	HWY 416 southbound, 2 km south of Bankfield Express exchange<UNOFFICIAL>	Ottawa ON	
SPL	Papier Masson Ltee<UNOFFICIAL>	Hwy 416 at Fallowfield Exit<UNOFFICIAL>	Ottawa ON	

Unplottable Report

Site: NEPEAN CITY
CEDARVIEW RD/BARRHAVEN MID.SCH NEPEAN CITY ON

Database:
CA

Certificate #: 3-0147-94-
Application Year: 94
Issue Date: 2/24/1994
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: MINTO CONSTRUCTION LTD. FOSTER DRAIN
W. OF CEDARVIEW RD. NEPEAN CITY ON

Database:
CA

Certificate #: 3-0519-87-
Application Year: 87
Issue Date: 7/18/1987
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: Mattamy (Half Moon Bay 3) Limited
Ottawa ON

Database:
CA

Certificate #: 2539-8KRPBJ
Application Year: 2011
Issue Date: 8/18/2011
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: Mattamy (Half Moon Bay 3) Limited
Ref. Plan 5R-1 3009, 5R-1 6254 Ottawa ON

Database:
CA

Certificate #: 0173-8GBHW6

Application Year: 2011
Issue Date: 4/29/2011
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: **Mattamy (Half Moon Bay 3) Limited**
Ottawa ON K2S 1B9

Database:
ECA

Approval No: 2539-8KRPBJ
Approval Date: 2011-08-18
Status: Approved
Record Type: ECA
Link Source: IDS
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Address:
Full Address:
Full PDF Link: <https://www.accessenvironment.ene.gov.on.ca/instruments/2386-8KKHNNH-14.pdf>

SWP Area Name:
MOE District:
City: Ottawa
Longitude:
Latitude:

Site: **Transport Company 2352357 Ontario Inc<UNOFFICIAL>**
Hwy 416 Mile Marker 57 near Bankfield Rd Ottawa ON

Database:
SPL

Ref No: 3863-9BHAJ2
Site No:
Incident Dt: 2013/09/13
Year:
Incident Cause: Collision/Accident
Incident Event:
Contaminant Code: 13
Contaminant Name: DIESEL FUEL
Contaminant Limit 1:
Contam Limit Freq 1:
Contaminant UN No 1:
Contaminant Qty: 0 other - see incident description
Environment Impact: Confirmed
Nature of Impact: Soil Contamination; Surface Water Pollution
Receiving Medium:
Receiving Env:
Health/Env Conseq:
MOE Response:
Dt MOE Arvl on Scn:
MOE Reported Dt: 2013/09/13
Dt Document Closed:
Agency Involved:
SAC Action Class: Land Spills
Incident Reason: Unknown / N/A
Incident Summary: TT Accident, diesel to ditch, clng

Discharger Report:
Material Group:
Client Type:
Sector Type: Truck - Only Saddle Tanks
Source Type:
Nearest Watercourse:
Site Name: Southbound Ditch 416<UNOFFICIAL>
Site Address: Hwy 416 Mile Marker 57 near Bankfield Rd
Site District Office:
Site County/District:
Site Postal Code:
Site Region:
Site Municipality: Ottawa
Site Lot:
Site Conc:
Northing:
Easting:
Site Geo Ref Accu:
Site Geo Ref Meth:
Site Map Datum:

Site: **HWY 416 1km North of RogerStevens Dr. Ottawa ON**

Database:
SPL

Ref No: 1054-7C2HV7
Site No:
Incident Dt:
Year:
Incident Cause: Other Transport Accident

Discharger Report:
Material Group:
Client Type:
Sector Type: Transport Truck
Source Type:

Incident Event:		Nearest Watercourse:	
Contaminant Code:	13	Site Name:	HWY 416 Northbound<UNOFFICIAL>
Contaminant Name:	DIESEL FUEL	Site Address:	
Contaminant Limit 1:		Site District Office:	Ottawa
Contam Limit Freq 1:		Site County/District:	
Contaminant UN No 1:		Site Postal Code:	
Contaminant Qty:		Site Region:	
Environment Impact:	Not Anticipated	Site Municipality:	Ottawa
Nature of Impact:	Human Health/Safety	Site Lot:	
Receiving Medium:		Site Conc:	
Receiving Env:		Northing:	
Health/Env Conseq:		Easting:	
MOE Response:	No Field Response	Site Geo Ref Accu:	
Dt MOE Arvl on Scn:		Site Geo Ref Meth:	
MOE Reported Dt:	2/21/2008	Site Map Datum:	
Dt Document Closed:	3/28/2008		
Agency Involved:			
SAC Action Class:	Highway Spills (usually highway accidents)		
Incident Reason:	Debris on Road		
Incident Summary:	Bel Trans: TT Diesel Spill to HWY 416		

Site:	Little Rock Transportation Ltd.<UNOFFICIAL> HWY 416 southbound, 2 km south of Bankfield Express exchange<UNOFFICIAL> Ottawa ON	Database: SPL	
Ref No:	8373-7HNS6Y	Discharger Report:	
Site No:		Material Group:	
Incident Dt:		Client Type:	
Year:		Sector Type:	Transport Truck
Incident Cause:	Other Transport Accident	Source Type:	
Incident Event:		Nearest Watercourse:	
Contaminant Code:	13	Site Name:	HWY 416 southbound, 2 km south of Bankfield Express exchange<UNOFFICIAL>
Contaminant Name:	DIESEL FUEL	Site Address:	
Contaminant Limit 1:		Site District Office:	Ottawa
Contam Limit Freq 1:		Site County/District:	
Contaminant UN No 1:		Site Postal Code:	
Contaminant Qty:	50 L	Site Region:	
Environment Impact:	Not Anticipated	Site Municipality:	Ottawa
Nature of Impact:		Site Lot:	
Receiving Medium:		Site Conc:	
Receiving Env:		Northing:	
Health/Env Conseq:		Easting:	
MOE Response:	No Field Response	Site Geo Ref Accu:	
Dt MOE Arvl on Scn:		Site Geo Ref Meth:	
MOE Reported Dt:	8/19/2008	Site Map Datum:	
Dt Document Closed:	11/20/2008		
Agency Involved:			
SAC Action Class:	Highway Spills (usually highway accidents)		
Incident Reason:	Unknown - Reason not determined		
Incident Summary:	Little Rock Trans: 50 L oil/diesel to shoulder, contained		

Site:	Papier Masson Ltee<UNOFFICIAL> Hwy 416 at Fallowfield Exit<UNOFFICIAL> Ottawa ON	Database: SPL	
Ref No:	8546-6BZTJ4	Discharger Report:	0
Site No:		Material Group:	Oil
Incident Dt:	5/2/2005	Client Type:	
Year:		Sector Type:	Other Motor Vehicle
Incident Cause:	Other Transport Accident	Source Type:	
Incident Event:		Nearest Watercourse:	
Contaminant Code:		Site Name:	Hwy 416 at Fallowfield Exit<UNOFFICIAL>
Contaminant Name:	DIESEL FUEL	Site Address:	
Contaminant Limit 1:		Site District Office:	Ottawa
Contam Limit Freq 1:		Site County/District:	
Contaminant UN No 1:		Site Postal Code:	
Contaminant Qty:	100 L	Site Region:	

Environment Impact:	Not Anticipated	Site Municipality:	Ottawa
Nature of Impact:		Site Lot:	
Receiving Medium:	Land	Site Conc:	
Receiving Env:		Northing:	
Health/Env Conseq:		Easting:	
MOE Response:		Site Geo Ref Accu:	
Dt MOE Arvl on Scn:		Site Geo Ref Meth:	
MOE Reported Dt:	5/2/2005	Site Map Datum:	
Dt Document Closed:			
Agency Involved:			
SAC Action Class:	Spill to Highway (Accident)		
Incident Reason:	Damage By Moving Equipment - Containers damaged by moving		
Incident Summary:	MVA: Papier Masson 100 L to road.		

Appendix: Database Descriptions

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

Abandoned Aggregate Inventory:

Provincial [AAGR](#)

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

Government Publication Date: Sept 2002*

Aggregate Inventory:

Provincial [AGR](#)

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

Government Publication Date: Up to Sep 2018

Abandoned Mine Information System:

Provincial [AMIS](#)

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

Government Publication Date: 1800-Nov 2016

Anderson's Waste Disposal Sites:

Private [ANDR](#)

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

Government Publication Date: 1860s-Present

Automobile Wrecking & Supplies:

Private [AUWR](#)

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

Government Publication Date: 1999-Jul 31, 2018

Borehole:

Provincial [BORE](#)

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

Government Publication Date: 1875-Jul 2014

Certificates of Approval:

Provincial [CA](#)

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

Government Publication Date: 1985-Oct 30, 2011*

Commercial Fuel Oil Tanks:

Provincial **CFOT**

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

Government Publication Date: Feb 28, 2017

Chemical Register:

Private **CHEM**

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

Government Publication Date: 1999-Jul 31, 2018

Compressed Natural Gas Stations:

Private **CNG**

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

Government Publication Date: Dec 2012 - Jul 2018

Inventory of Coal Gasification Plants and Coal Tar Sites:

Provincial **COAL**

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

Government Publication Date: Apr 1987 and Nov 1988*

Compliance and Convictions:

Provincial **CONV**

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

Government Publication Date: 1989-Sep 2018

Certificates of Property Use:

Provincial **CPU**

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

Government Publication Date: 1994-Jul 31, 2018

Drill Hole Database:

Provincial **DRL**

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

Government Publication Date: 1886-Nov 30, 2017

Dry Cleaning Facilities:

Federal **DRYCLEANERS**

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

Government Publication Date: Jan 2004-Dec 2016

Environmental Activity and Sector Registry:

Provincial **EASR**

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

Government Publication Date: Oct 2011-Sep 30, 2018

Environmental Registry:

Provincial **EBR**

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

Government Publication Date: 1994-Jul 31, 2018

Environmental Compliance Approval:

Provincial **ECA**

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

Government Publication Date: Oct 2011-Sep 30, 2018

Environmental Effects Monitoring:

Federal **EEM**

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

Government Publication Date: 1992-2007*

ERIS Historical Searches:

Private **EHS**

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

Government Publication Date: 1999-Jul 31, 2018

Environmental Issues Inventory System:

Federal **EIIS**

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

Government Publication Date: 1992-2001*

Emergency Management Historical Event:

Provincial **EMHE**

List of locations of historical occurrences of emergency events, including those assigned to the Ministry of Natural Resources by Order-In-Council (OIC) under the Emergency Management and Civil Protection Act, as well as events where MNR provided requested emergency response assistance. Many of these events will have involved community evacuations, significant structural loss, and/or involvement of MNR emergency response staff. These events fall into one of ten (10) type categories: Dam Failure; Drought / Low Water; Erosion; Flood; Forest Fire; Soil and Bedrock Instability; Petroleum Resource Center Event, EMO Requested Assistance, Continuity of Operations Event, Other Requested Assistance. EMHE record details are reproduced by ERIS under License with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2017.

Government Publication Date: Dec 31, 2016

List of TSSA Expired Facilities:

Provincial **EXP**

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

Government Publication Date: Feb 28, 2017

Federal Convictions:

Federal **FCON**

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

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land:

Federal

FCS

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

Government Publication Date: Jun 2000-Aug 2018

Fisheries & Oceans Fuel Tanks:

Federal

FOFT

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

Government Publication Date: 1964-Sep 2017

Fuel Storage Tank:

Provincial

FST

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

Government Publication Date: Feb 28, 2017

Fuel Storage Tank - Historic:

Provincial

FSTH

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

Government Publication Date: Pre-Jan 2010*

Ontario Regulation 347 Waste Generators Summary:

Provincial

GEN

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

Government Publication Date: 1986-June 30, 2018

Greenhouse Gas Emissions from Large Facilities:

Federal

GHG

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

Government Publication Date: 2013-Dec 2016

TSSA Historic Incidents:

Provincial

HINC

List of historic incidences of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen recorded by the TSSA in their previous incident tracking system. The TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, the TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of historical fuel spills and leaks in the province. This listing is a copy of the data captured at one moment in time and is hence limited by the record date provided here.

Government Publication Date: 2006-June 2009*

Indian & Northern Affairs Fuel Tanks:

Federal

IAFT

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

Government Publication Date: 1950-Aug 2003*

TSSA Incidents:

Provincial [INC](#)

List of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen reported to the Spills Action Centre (SAC) and made available by the Technical Standards and Safety Authority (TSSA). Under the Technical Standards & Safety Act (2000), the TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors, and equipment or appliances that use fuels. Includes incidents from fuel-related hazards such as spills, fires, and explosions. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of fuel-related leaks, spills, and incidents in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

Landfill Inventory Management Ontario:

Provincial [LIMO](#)

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

Government Publication Date: Sep 30, 2017

Canadian Mine Locations:

Private [MINE](#)

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

Government Publication Date: 1998-2009*

Environmental Penalty Annual Report:

Provincial [MISA PENALTY](#)

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

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

Mineral Occurrences:

Provincial [MNR](#)

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

Government Publication Date: 1846-Jan 2018

National Analysis of Trends in Emergencies System (NATES):

Federal [NATE](#)

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

Government Publication Date: 1974-1994*

Non-Compliance Reports:

Provincial [NCPL](#)

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

Government Publication Date: Dec 31, 2016

National Defense & Canadian Forces Fuel Tanks:

Federal [NDFT](#)

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

Government Publication Date: Up to May 2001*

National Defense & Canadian Forces Spills:

Federal

NDSP

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

Government Publication Date: Mar 1999-Apr 2018

National Defence & Canadian Forces Waste Disposal Sites:

Federal

NDWD

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

Government Publication Date: 2001-Apr 2007*

National Energy Board Pipeline Incidents:

Federal

NEBI

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

Government Publication Date: 2008-Jun 30, 2018

National Energy Board Wells:

Federal

NEBW

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

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES):

Federal

NEES

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

Government Publication Date: 1974-2003*

National PCB Inventory:

Federal

NPCB

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

Government Publication Date: 1988-2008*

National Pollutant Release Inventory:

Federal

NPRI

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

Government Publication Date: 1993-May 2017

Oil and Gas Wells:

Private

OGW

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

Government Publication Date: 1988-August 31, 2018

Ontario Oil and Gas Wells:

Provincial

OGGW

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

Government Publication Date: 1800-May 2018

Inventory of PCB Storage Sites:

Provincial [OPCB](#)

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

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

Orders:

Provincial [ORD](#)

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

Government Publication Date: 1994-Jul 31, 2018

Canadian Pulp and Paper:

Private [PAP](#)

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

Government Publication Date: 1999, 2002, 2004, 2005, 2009-2014

Parks Canada Fuel Storage Tanks:

Federal [PCFT](#)

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

Government Publication Date: 1920-Jan 2005*

Pesticide Register:

Provincial [PES](#)

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

Government Publication Date: 1988-Mar 2018

TSSA Pipeline Incidents:

Provincial [PINC](#)

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

Government Publication Date: Feb 28, 2017

Private and Retail Fuel Storage Tanks:

Provincial [PRT](#)

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

Government Publication Date: 1989-1996*

Permit to Take Water:

Provincial [PTTW](#)

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

Government Publication Date: 1994-Jul 31, 2018

Ontario Regulation 347 Waste Receivers Summary:

Provincial [REC](#)

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

Government Publication Date: 1986-2016

Record of Site Condition:

Provincial **RSC**

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

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

Government Publication Date: 1997-Sept 2001, Oct 2004-Sep 2018

Retail Fuel Storage Tanks:

Private **RST**

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

Government Publication Date: 1999-Jul 31, 2018

Scott's Manufacturing Directory:

Private **SCT**

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

Government Publication Date: 1992-Mar 2011*

Ontario Spills:

Provincial **SPL**

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

Government Publication Date: 1988-Jul 2018

Wastewater Discharger Registration Database:

Provincial **SRDS**

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

Government Publication Date: 1990-Dec 31, 2016

Anderson's Storage Tanks:

Private **TANK**

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

Government Publication Date: 1915-1953*

Transport Canada Fuel Storage Tanks:

Federal **TCFT**

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

Government Publication Date: 1970-Aug 2017

TSSA Variances for Abandonment of Underground Storage Tanks:

Provincial **VAR**

List of variances granted for abandoned tanks. Under the Technical Standards and Safety Authority (TSSA) Liquid Fuels Handling Code and Fuel Oil Code, all underground storage tanks must be removed within two years of disuse. If removal of a tank is not feasible, an application may be sought for a variance from this code requirement.

Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of tank variances in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

Waste Disposal Sites - MOE CA Inventory:

Provincial

[WDS](#)

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

Government Publication Date: Oct 2011-Sep 30, 2018

Waste Disposal Sites - MOE 1991 Historical Approval Inventory:

Provincial

[WDSH](#)

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

Government Publication Date: Up to Oct 1990*

Water Well Information System:

Provincial

[WWIS](#)

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

Government Publication Date: Dec 31, 2017

Definitions

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX C

Regulatory Responses



Natural Areas and Features Information Request Form

Contact Information

Name: _____

Address: _____

Phone Number: _____ Owner Consultant

E-mail Address: _____

***All red fields are mandatory**

This includes X & Y Coordinates.

Please see _____ for assistance.

Site Information

Project Name: _____

Township: _____ Lot: _____ Concession: _____

X: _____ Y: _____ Address: _____

***If more than 1 site, please provide all individual coordinates in an attached spreadsheet*

Type of Proposal

- Severance / Zoning
- Drains / Roads / Culverts
- Hydroline clearing
- Small Scale Projects (less than 5 hectares)
- RE Projects
- Large Scale Projects (5 hectares or greater)
- Aggregate Project
- Other: _____

Attachments

*****Please attach a Site Map showing the area of interest**

- Picture
- Map(s)
- Engineered Drawings
- Other: _____

Request

I would like to request the following information for the property identified above:

To better respond to your request please briefly outline the purpose for which this information is required (e.g. proposed development, lot severance, etc. or attach details):

Date of works proposed: ____ / ____ / ____

Personal information contained in this form is collected in order to fulfill your request, respond to your inquiries and for other administration purposes. With regard to the personal information it collects, the ministry is bound by privacy protection rules under the Freedom of Information and Protection of Privacy Act and takes all necessary steps to safeguard personal information collected.

Please Note: This request MUST be made by the property owner or by someone acting on their behalf. Depending on the nature of the request, it may take 6-8 weeks to respond to your inquiry. If the request does not include the mandatory information, it may delay response time.

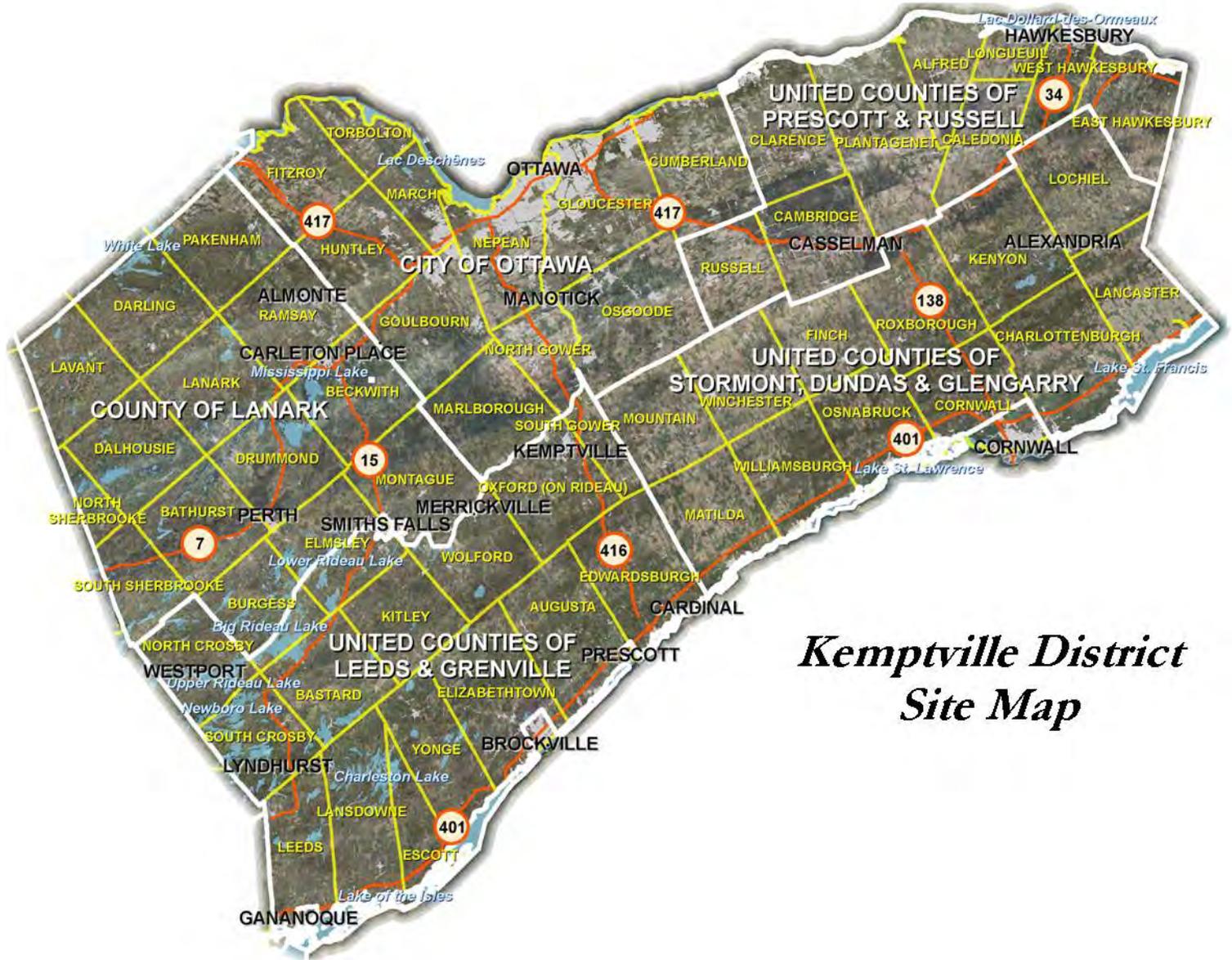
I have read the above and agree to all Terms and Conditions

Please forward the completed form to:

OR Fax: 613-258-3920

Attention: Information Requests
10 Campus Drive, Postal Bag 2002
Kempenville, ON K0G 1J0

MNR File Number: _____



Kemptville District Site Map

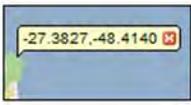
How to get X, Y coordinates from Google Maps (2 options):

- 1.) Right-click on the map, at the point of interest, and select 'What's here?'.
-The Latitude & Longitude of the mouse click, in decimal degrees, will automatically appear in the Search box.

OR

- 2.) Click on 'Maps Labs' in Google Maps.
-The following window will appear:

[Maps Labs](#) - [Help](#)
 Google Maps - ©2012 Google - [Terms of Use](#)

	<div style="border: 1px solid #ccc; border-radius: 5px; padding: 5px; margin-bottom: 5px;"> LatLng Tooltip </div> <p>Displays a tooltip next to the mouse cursor showing the latlng directly underneath it. Press SHIFT to activate tooltip.</p>	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
	<div style="border: 1px solid #ccc; border-radius: 5px; padding: 5px; margin-bottom: 5px;"> LatLng Marker <small>Marcelo C</small> </div> <p>Adds an option to the context menu that lets you drop a mini marker showing the latlng of the position that the cursor was pointing at when the context menu was evoked</p>	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

Important: To save your enabled Labs for next time, you must sign in to your Google account.

- Enable the LatLng Tooltip and then Save Changes.
- Now every time the **SHIFT** button is pressed in Google Maps, a Tool tip will appear with the Latitude and Longitude of the mouse location in decimal degrees.

From: [Public Information Services](#)
To: [Chowdhury, Shihan](#)
Subject: RE: TSSA Search Request for 3809 Borrisokane Road in Ottawa
Date: November 8, 2018 2:28:07 PM

No Records Found

Hello,

Thank you for your request for confirmation of public information.

- We confirm that there are **no fuel storage tanks records** in our database at the subject address(es).

For copies of documents, please complete the Release of Public Information form, found at <https://www.tssa.org/en/about-tssa/resources/Release-of-Records-form--Jan-2018Final.pdf> and email the completed form to publicinformationsservices@tssa.org or through mail along with the appropriate fee. TSSA's fee schedule can be found at: https://www.tssa.org/en/about-tssa/resources/Documents/Public-Information-Fee-Schedule_Jan_2018.pdf. Fees are payable with a credit card (Visa or MasterCard) or by a cheque made payable to TSSA.

Although TSSA believes the information provided pursuant to your request is accurate, please note that TSSA does not warrant this information in any way whatsoever.

Kind regards,

Connie

From: Chowdhury, Shihan <Shihan_Chowdhury@golder.com>
Sent: November 8, 2018 1:40 PM
To: Public Information Services <publicinformationsservices@tssa.org>
Subject: TSSA Search Request for 3809 Borrisokane Road in Ottawa

Good afternoon,

Please perform a TSSA database search for any underground storage tanks, registered fuel tanks, outstanding instructions, incident reports, fuel oil spills or contaminations records for the following properties located at:

- 3809 Borrisokane Road, Ottawa (Subject Site)
- 3713 Borrisokane Road, Ottawa
- 3640 Greenbank Road, Ottawa
- 3960 Greenbank Road, Ottawa
- 3718 Greenbank Road, Ottawa
- 3882 Barnsdale Road, Ottawa
- 4272 Trail Road, Ottawa
- 4475 Trail Road, Ottawa
- 670 Dundonald Drive, Ottawa
- 675 Dundonald Drive, Ottawa

Kindly let me know if you have any queries.

Best Regards,

Shihan A. Chowdhury, EIT | Junior Environmental Consultant | **Golder Associates Ltd.**
1931 Robertson Road, Ottawa, Ontario, Canada, K2H 5B7

T: +1 (613) 592 9600 | **F:** +1 (613) 592 9601 | **C:** +1 (613) 406-6892 | **E:**
Shihan_Chowdhury@golder.com
www.golder.com

Work Safe, Home Safe

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

From: Chowdhury, Shihan
To: ["jehanne.hurlbut@ontario.ca"](mailto:jehanne.hurlbut@ontario.ca)
Subject: Requesting Info on 3809 Borrisokane Road in Ottawa
Date: November 8, 2018 6:38:00 PM

Hello Jéhanne,

Hope this email finds you well.

I am working on a Phase I ESA for property addressed 3809 Borrisokane Road in Ottawa. The PIN associated with the property is 045920037. Appreciate if you kindly check for any approvals and/or orders associated with this address.

Please let me know if you have any queries.

Best regards,

Shihan A. Chowdhury, EIT | Junior Environmental Consultant | **Golder Associates Ltd.**

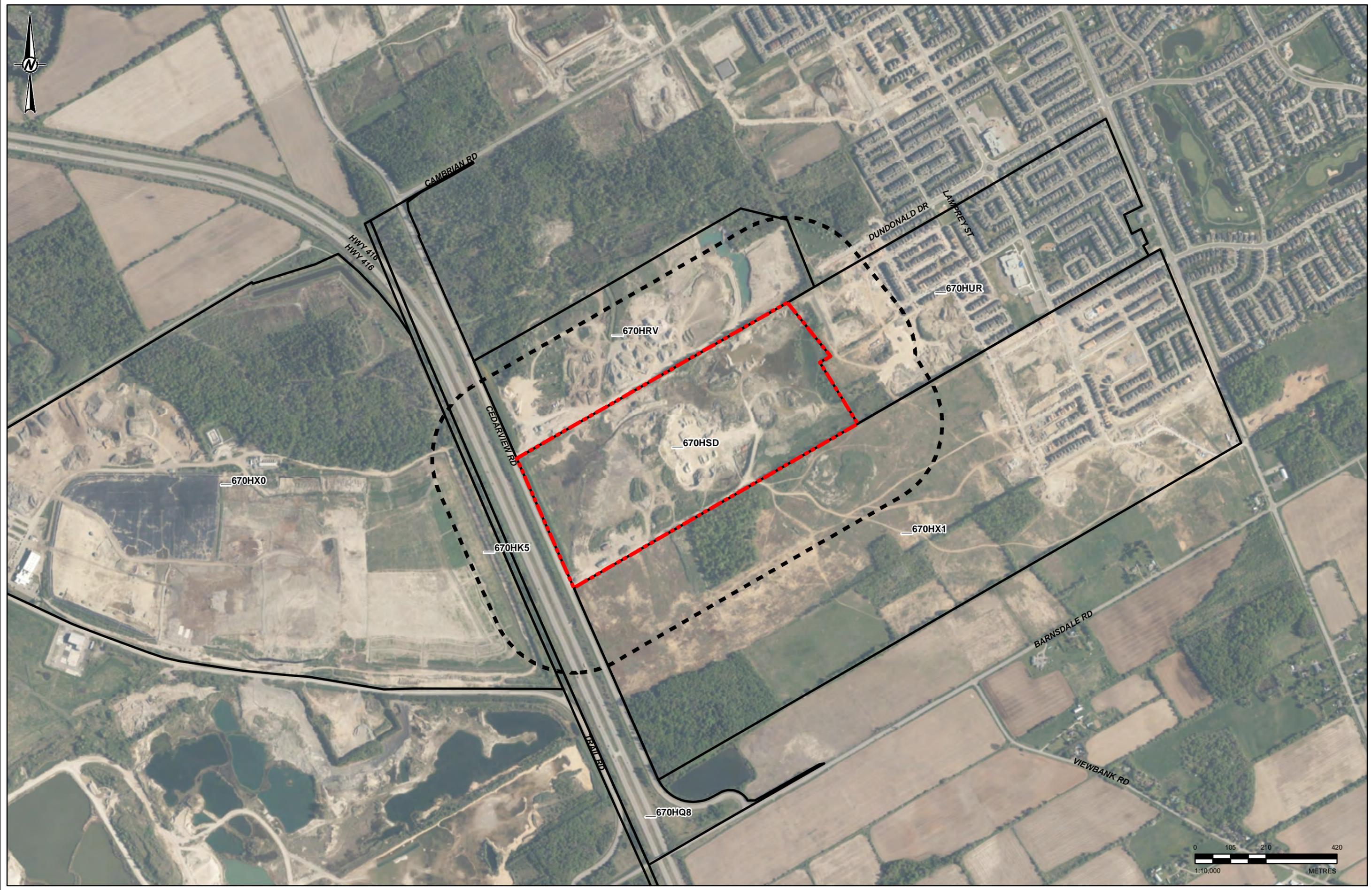
1931 Robertson Road, Ottawa, Ontario, Canada, K2H 5B7

T: +1 (613) 592 9600 | **F:** +1 (613) 592 9601 | **C:** +1 (613) 406-6892 | **E:**

Shihan_Chowdhury@golder.com

www.golder.com

Work Safe, Home Safe



Path: N:\Vector\Spatial_Maps\0309_Borriehave_Rd09_PROJ\1111227_CedarBrazos_Emer0001_Phase01r_ESA\1811227\001-HS-HLU.mxd



APPENDIX D

Aerial Photographs



LEGEND

-  PHASE ONE SITE
-  PHASE ONE STUDY AREA



REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83
 COORDINATE SYSTEM: MTM ZONE 9 VERTICAL DATUM: CGVD28

CLIENT
CAIVAN BRAZEAU DEVELOPMENT CORPORATION

PROJECT
**PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
 3809 BORRISOKANE ROAD, OTTAWA, ONTARIO**

TITLE
1946 AIR PHOTO

CONSULTANT	YYYY-MM-DD	2018-11-14
	DESIGNED	----
	PREPARED	JEM
	REVIEWED	SC
	APPROVED	KPH

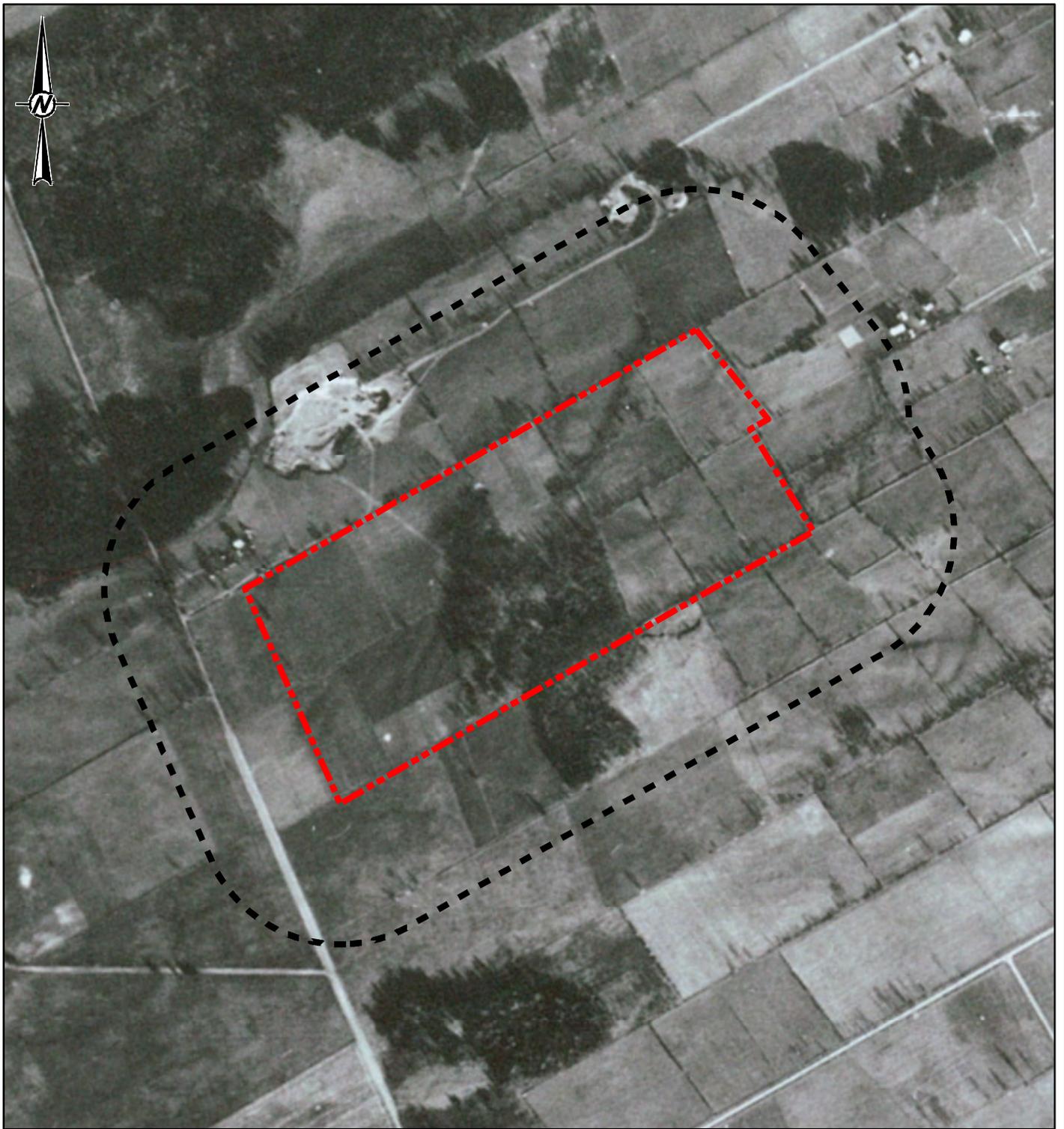
PROJECT NO.	CONTROL	REV.	APPENDIX
18112277	0001	0	D1

Path: N:\Active\Spatial\MC\Caivan\3809_Borrisokane_Rd\p1a_PROJ\18112277_Caivan\Brazeau_Develop\0001_PhaseOne_ESA\18112277-0001-HS-001.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:

25mm

0



LEGEND

-  PHASE ONE SITE
-  PHASE ONE STUDY AREA



REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83
 COORDINATE SYSTEM: MTM ZONE 9 VERTICAL DATUM: CGVD28

CLIENT
CAIVAN BRAZEAU DEVELOPMENT CORPORATION

PROJECT
**PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
 3809 BORRISOKANE ROAD, OTTAWA, ONTARIO**

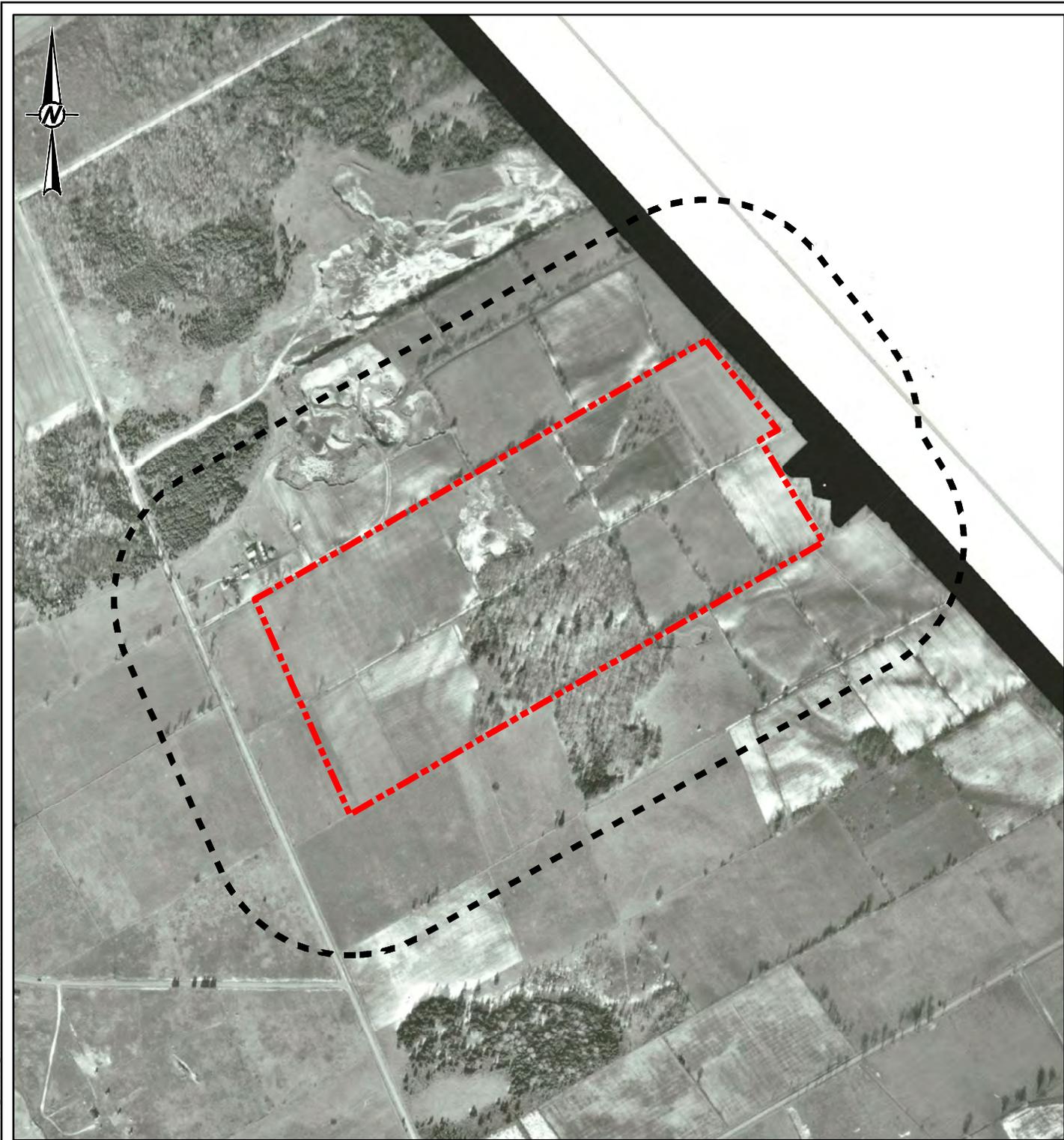
TITLE
1956 AIR PHOTO

CONSULTANT	YYYY-MM-DD	2018-11-14
	DESIGNED	----
	PREPARED	JEM
	REVIEWED	SC
	APPROVED	KPH

PROJECT NO.	CONTROL	REV.	APPENDIX
18112277	0001	0	D2

Path: N:\Active\Spatial\MC\Caivan\3809 Borriskane Rd.jpg_PROJ\18112277_CaivanBrazeau_Enviro\0001_PhaseOne_ESA\18112277-0001-HS-002.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm



LEGEND

-  PHASE ONE SITE
-  PHASE ONE STUDY AREA



REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83
 COORDINATE SYSTEM: MTM ZONE 9 VERTICAL DATUM: CGVD28

CLIENT
CAIVAN BRAZEAU DEVELOPMENT CORPORATION

PROJECT
**PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
 3809 BORRISOKANE ROAD, OTTAWA, ONTARIO**

TITLE
1967 AIR PHOTO

CONSULTANT



YYYY-MM-DD	2018-11-14
DESIGNED	----
PREPARED	JEM
REVIEWED	SC
APPROVED	KPH

PROJECT NO. 18112277	CONTROL 0001	REV. 0	APPENDIX D3
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Path: N:\Active\Site\18112277 - Borriskane - Rd.jpg PROJ:18112277 - CaivanBrazeau - Enviro\0001 - PhaseOne - ESA\18112277\0001-HS-00D3.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 297mm



LEGEND

-  PHASE ONE SITE
-  PHASE ONE STUDY AREA



REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83
 COORDINATE SYSTEM: MTM ZONE 9 VERTICAL DATUM: CGVD28

CLIENT
CAIVAN BRAZEAU DEVELOPMENT CORPORATION

PROJECT
**PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
 3809 BORRISOKANE ROAD, OTTAWA, ONTARIO**

TITLE
1987 AIR PHOTO

CONSULTANT	YYYY-MM-DD	2018-11-14
	DESIGNED	----
	PREPARED	JEM
	REVIEWED	SC
	APPROVED	KPH

PROJECT NO.	CONTROL	REV.	APPENDIX
18112277	0001	0	D4

APPENDIX E

Site Photographs



Photo 1 – View of a portion of the northern Site, looking northeast.



Photo 2 – View of a portion of the eastern Site perimeter, looking southeast.

CLIENT

Caivan Brazeau Development Corporation

CONSULTANT



YYYY-MM-DD 2018-11-13

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PROJECT

Phase I ESA – 3809 Borrisokane Road, Ottawa, Ontario

TITLE

Photographic Record

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FIGURE

C1



Photo 3 – View of typical tree coverage along southern Site perimeter, looking southwest.



Photo 4 – General view of vegetation covered western portion of the Site.

CLIENT

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PROJECT

Phase I ESA – 3809 Borrisokane Road, Ottawa, Ontario

TITLE

Photographic Record

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FIGURE

C2



Photo 5 – Asphalt paved driveway access to the Site, off Borrisokane Road.



Photo 6 – View of scale office building located on the southwest corner of the Site, looking southeast.

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TITLE

Photographic Record

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FIGURE

C3



Photo 7 – A storage shed located on the southwest corner of the Site (formerly used for tool storage).



Photo 8 – View of open storage area adjacent to the storage shed on the Site.

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PROJECT

Phase I ESA – 3809 Borrisokane Road, Ottawa, Ontario

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FIGURE

C4



Photo 9 – View of water storage tank (according to the Site Representative) located north of the storage shed.



Photo 10 – View of the excavation with typical stockpiles on the eastern portion of the Site.

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PROJECT

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TITLE

Photographic Record

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FIGURE

C5



Photo 11 – Imported clay/red brick stockpiles located on the excavation floor of the Site.



Photo 12 – Imported concrete materials stockpiled located on the excavation floor of the Site.

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FIGURE

C6



Photo 13 – General view of typical excavation floor of the Site.



Photo 14 – Excavated materials stockpiled (following screening) as clean sand on the eastern portion of the Site.

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FIGURE

C7



Photo 15 – Inactive incinerator located on the eastern portion of the Site.



Photo 16 – Sand filter machine (currently inactive) located on the east portion of the Site (no evidence of any stains or spills observed).

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TITLE

Photographic Record

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FIGURE

C8



Photo 17 – View of active quarry (sand, gravel and other materials) facility at 3717 Borrisokane Road, immediate north of the Site.



Photo 18 – View of residential developments located east of the Site.

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PROJECT

Phase I ESA – 3809 Borrisokane Road, Ottawa, Ontario

TITLE

Photographic Record

PROJECT No. 18112277

FIGURE

C9



Photo 19 – View of undeveloped lands (proposed for residential developments) adjacent south of the Site.



Photo 20 – View of Borrisokane Road (immediately west of the Site) followed by divided highway ON 416.

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FIGURE

C10



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