

# Project File Report for the City of Kawartha Lakes New Highway 7 Sewage Pumping Station and Forcemain

September 2<sup>nd</sup>, 2024



**Prepared for:**

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Project No.: 2337786

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## 1. INTRODUCTION

### 1.1. Background

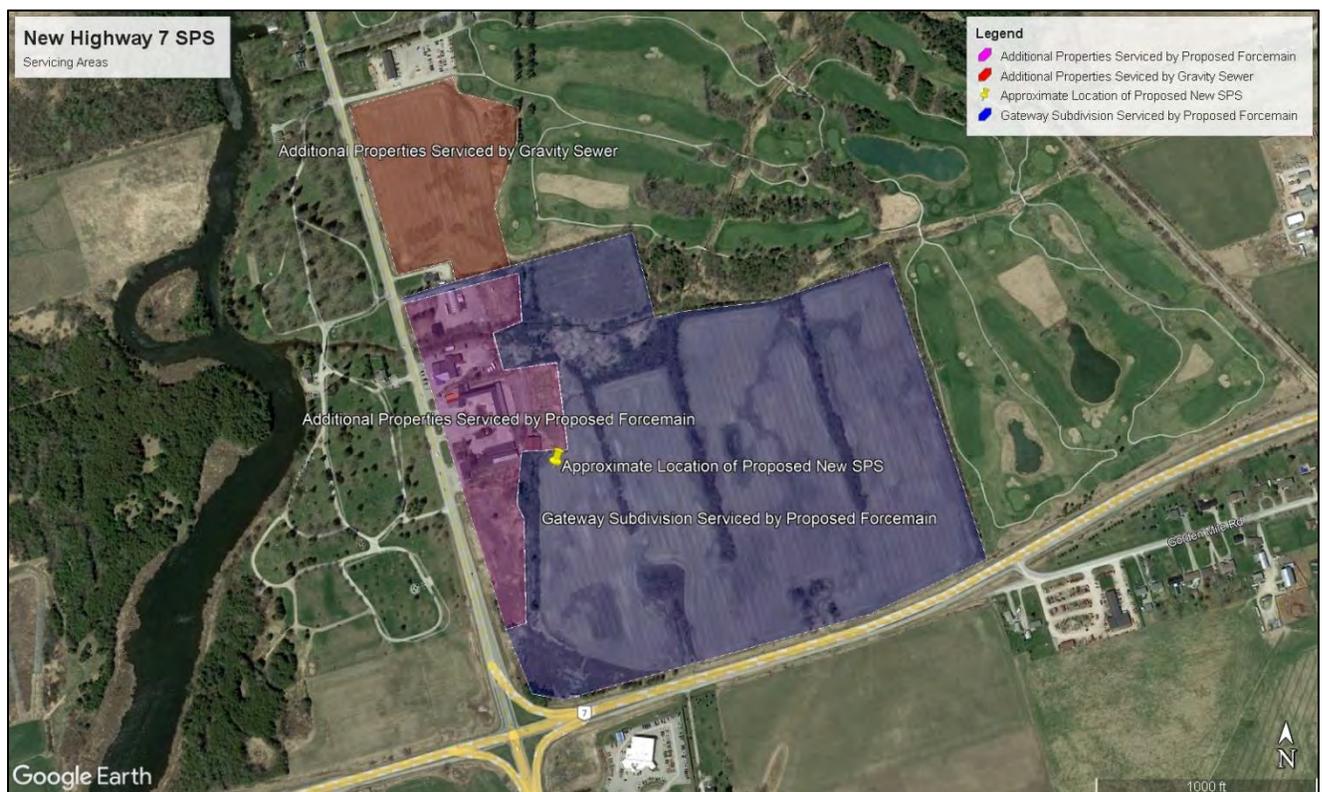
The City of Kawartha Lakes (City) is initiating a planning process to expand the wastewater collection system for the community of Lindsay. The community of Lindsay is rapidly expanding with new developments and requires upgrades to the wastewater collection system to support the increasing needs of the residents of the community.

The Gateway Subdivision, located on Highway 7 and Lindsay Street South, is one of the new developments within the community of Lindsay. To support the new homes to be built, upgrades to the wastewater collection system will be required.

These upgrades and recommendations will be carried out as a Schedule 'B' project under the terms of the Municipal Class Environmental Assessment (Class EA) process, which is approved under the Environmental Assessment Act. A Notice of Commencement was released on February 6<sup>th</sup>, 2024, to mark the beginning of the project. A Public Information Centre (PIC) was held on May 22<sup>nd</sup>, 2024, during which proposed alternatives and the preferred alternative were presented. A notice of completion will be issued subsequent to this report.

### 1.2. Study Areas

The relevant area of study is within the proposed servicing areas. This EA considers solutions within the previously undeveloped agriculturally, and highway commercially zoned areas of the proposed developments.



*Figure 1: Aerial view of relevant study area*

### 1.3. Municipal Class Environmental Assessment Process

In Ontario, municipal water and wastewater projects are subject to the provisions of the Municipal Class Environmental Assessment (2000, amended in 2007, 2011 and 2015). The Class Environmental Assessment (Class EA) is an approved planning document which describes the process that proponents must follow in order to meet the requirements of the Environmental Assessment Act (EAA) of Ontario. The Class EA approach allows for the evaluation of the environmental effects of carrying out a project and alternative methods, includes mandatory requirements for public input, and expedites the environmental assessment of smaller recurring projects.

The Class EA planning process was developed to ensure that the potential social, economic, and natural environmental effects are considered in planning water, storm water and sewage projects. Class EAs are a method of dealing with projects which display the following important common characteristics: recurring, usually small in nature, usually limited in scale, predictable range of environmental effects, and responsive to mitigation measures.

Projects which do not display these characteristics must undergo an individual environmental assessment. The Class EA planning process represents an alternative for Ontario municipalities to carry out individual environmental assessments for most municipal sewage, storm water management, and water projects. Since sewage, storm water management, and water projects undertaken by municipalities under the Class EA planning process vary in their environmental impact, such projects are classified in terms of schedules.

**EXHIBIT A.2. MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS**

NOTE: This flow chart is to be read in conjunction with Part A of the MCEA

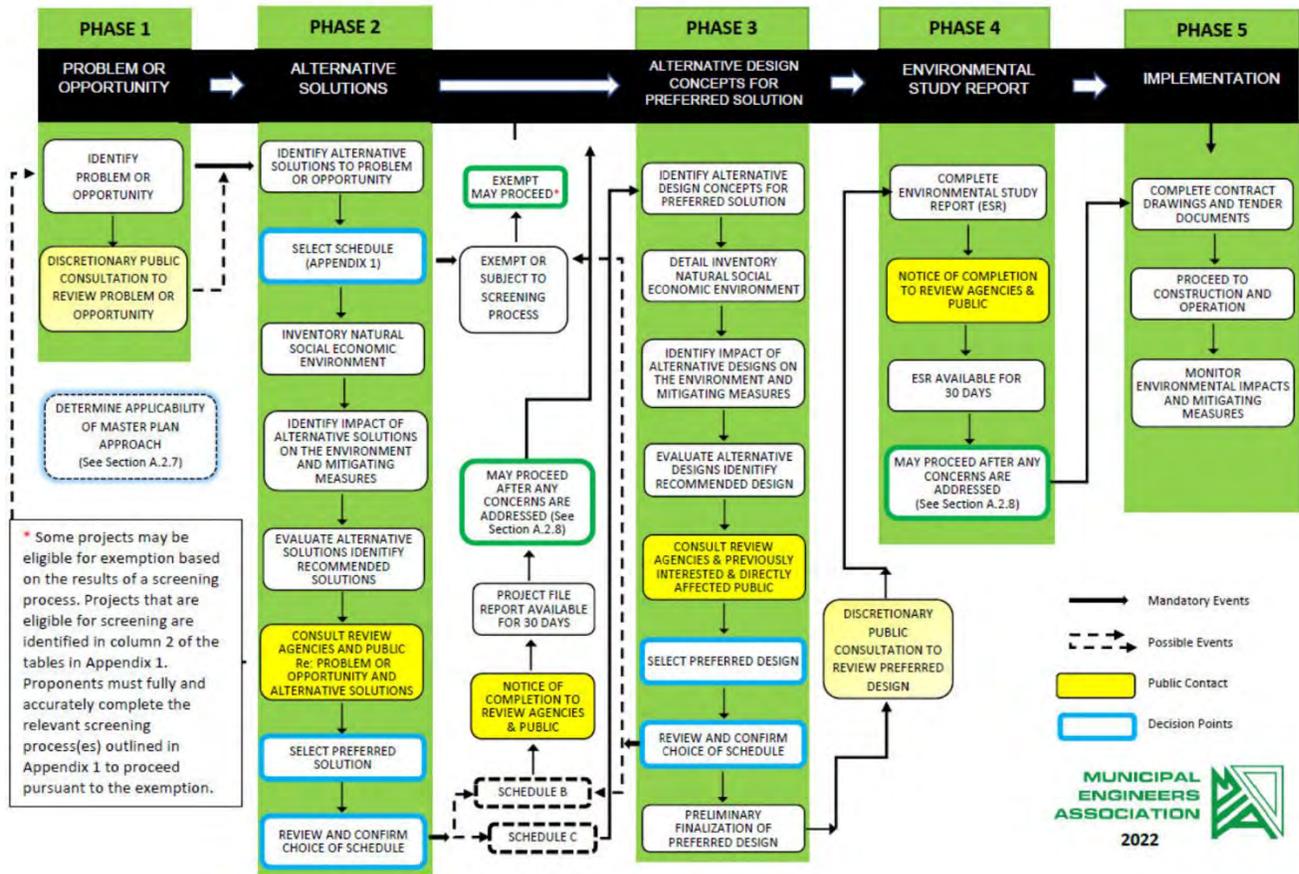


Figure 2: Municipal Class EA Planning and Design Process Flow Diagram.

Schedule A projects are limited in scale, have minimal adverse effects and include the majority of municipal sewage, storm water management, and water operations as well as maintenance activities. These projects are pre-approved and may proceed to implementation without any further requirements under the provisions of the Class EA planning process. Schedule A+ projects are also pre-approved; however, the public must be informed prior to implementation.

Schedule B projects have the potential for some adverse environmental effects. The proponent is required to undertake a screening process involving mandatory contact with directly affected public and with relevant government agencies to ensure that they are aware of the project and that their concerns are addressed. If there are no outstanding concerns, then the proponent may proceed to implementation. If, however, the screening process raises a concern which cannot be resolved, then the Part II Order ("bump-up") procedure may be invoked; alternatively, the proponent may elect voluntarily to plan the project as a Schedule C undertaking. Typically, Schedule B projects involve extensions to existing Municipal infrastructure such as sewage collection systems and water distribution systems.

Schedule C projects have the potential for significant environmental effects and must proceed under the full planning and documentation procedures specified in the Class EA process. Schedule C projects require that an ESR be prepared and submitted for review by the public. If concerns are raised that cannot be

resolved, the "bump-up" procedure may be invoked, which may result in the requirement to complete a full environmental assessment. Typically, these projects involve the construction of Municipal infrastructure such as wastewater treatment facilities, new sewage collection and water distribution systems, and water treatment facilities.

Proponents then proceed through the planning process beginning with Phase 1 (Problem Definition) and advancing towards the end of Phase 2 (Evaluation of Alternative Solutions), where the preferred alternative solution is determined. Having determined the preferred alternative solution, the appropriate project schedule and process for the completion of the project can be followed.

For a Schedule B project, Phase 1 defines the nature and extent of the problem and the project opportunity. Often a discretionary public meeting is held to inform interested parties of the EA planning process and to discuss the problem.

Phase 2 involves the identification of the alternative solutions. Also included is an inventory of the natural, social, and economic environment; the identification of the impacts of alternative solutions on the environment; the identification of mitigation measures; an evaluation of alternative solutions; consultation with review agencies and the public regarding the identified problem and alternative solutions; the identification of the preferred alternative solution; and confirmation of the path or schedule to follow for the balance of the Class EA process. Public consultation is mandatory at this phase and includes review agencies and the affected public. The appropriate EA schedule for the project is also identified.

Phases 3 and 4 are relevant to a Schedule "C" EA. Phase 3 involves the identification of alternative designs for the selected alternative solution. Also included are a detailed inventory of the natural, social, and economic environment relating to the selected alternative solution; the identification of the impacts of alternative designs on the environment; the identification of mitigation measures; consultation with review agencies and the public regarding the alternative designs; and the identification of the recommended alternative design. Public consultation is mandatory at this phase and includes review agencies and the affected public.

Phase 4 represents the culmination of the planning and design process as set out in the Class EA. Phase 4 involves the completion of the documentation including the ESR, if required, and the Notice of Completion. The ESR documents all of the activities undertaken through Phases 1, 2, and 3 including the consultation. The ESR is filed with the Clerk of the Municipality and is placed on the public record for at least 30 days to allow for public review. The public and mandatory agencies are notified through the Notice of Completion, which also discloses the Part II Order ("bump-up") provisions.

Phase 5 is the implementation phase of the Class EA process. Phase 5 includes final design, construction plans and specifications, tender documents, and construction and operation. It also includes monitoring for environmental provisions and commitments (e.g. mitigation measures) as defined in the ESR.

There is an opportunity for any interested parties to request a Part II Order that results in the project being bumped up from a Class Environmental Assessment to an Individual Environmental Assessment. The "bump-up" opportunity exists at the Notice of Completion stage and must be filed with the Minister of Environment within thirty (30) days of the notice date. The Notice of Completion occurs near the end

of Phase 4 for Schedule C projects. The Notice of Completion signifies that the Class EA process has been completed for the project and that the resulting document has been placed on public record.

For projects subject to the provisions of the Class Environmental Assessment Process, a person or agency with a significant concern must communicate the concern to the proponent any time between Phases 2 and 4. If the concern cannot be resolved between the party and the proponent, then that person or agency can request a Part II Order from the Minister. This must be done during the thirty-day public review period after the Notice of Completion has been issued.

The Environmental Assessment Branch of the Ministry of the Environment then has forty-five days to prepare a report to the Minister, who then has twenty-one days to decide. The Minister may deny the request, deny the request with conditions, refer to the Environmental Assessment Advisory Committee, or comply with the request. Obviously, since the Part II Order procedure is arduous, an individual or agency with a significant and legitimate concern is wise to engage in an early and meaningful dialogue with the proponent. The process is specifically referenced in the Notice and addressed in detail during the PICs.

This project is a Schedule "B" Class EA.

The **Proponent** for the project is:

City of Kawartha Lakes  
26 Francis Street  
Lindsay, ON  
K9V 5R8  
*Attention: Marten Leclerc, Senior Engineering Tech*

The **Consulting Engineer** is:

The Greer Galloway Group Inc.  
1620 Wallbridge Loyalist Rd.  
Belleville, ON  
K8N 4Z5  
*Attention: Tony Guerrero, P.Eng.*

## 2. PROBLEM OR OPPORTUNITY

### 2.1. Opportunity Statement

New and future developments within the community of Lindsay including the Gateway subdivision, require upgrades to the capacity of the existing wastewater collection system.

### 2.2. Existing System

The Community of Lindsay has an existing wastewater collection system comprises of approximately 117 linear kilometres of gravity sewer and 9 sewage pumping stations to distribute wastewater to the Lindsay Waste Pollution Control Plant (Appendix P).

### 2.3. Growth

The proposed Gateway Subdivision and additional serviced properties lie on previously undeveloped agriculturally and highway commercially zoned areas, respectively (Kawartha GIS). There is currently no existing wastewater infrastructure located in these development areas nor along the adjacent roadways of Lindsay St S or Highway 7. As such, the wastewater collection system requires substantial expansion in these areas to accommodate the additional flows due to the proposed developments.

The development of the Gateway Subdivision is planned for the community of Lindsay. The Southeast Development Charges (SEDC) Study confirms that the development of the Gateway Subdivision will include 246 additional residential units which contribute 30.7 L/s of wastewater flow (Appendix Q). The additional properties to be serviced by the proposed sewage pumping have been estimated to contribute an additional 3.5 L/s of flow. After review, it has been confirmed that the proposed sewage pumping station will have a design flow of 35 L/s with approximately 1000 m of forcemain for the new wastewater collection system.

## 3. EVALUATION OF ALTERNATIVE SOLUTIONS

### 3.1. Alternative Solutions

The following alternative solutions to address the need for additional capacity of the wastewater collection system to support the needs of the community of Lindsay were considered:

- 1) Do Nothing
- 2) Gravity Sewer System for New Development
- 3) New Sewage Pumping Station

### 3.2. Evaluation of Alternatives

Selection of a preferred solution involves evaluating the relative merits of each alternative from a technical perspective as well as assessing the potential impacts on the natural, cultural, social, and economic environments. Technical considerations include the ability to satisfy the problem statement while meeting applicable regulations, codes, and standards (including requirements for MECP approvals). Natural environment includes impacts to groundwater, surface water, terrestrial and aquatic environments, and species at risk. Cultural environment refers to cultural heritage and archaeological resources. Social environment includes impacts to people and communities (e.g., property impacts, noise, odour, aesthetics, recreation). Economic environment includes capital and operating costs as well as impacts on commercial or other activities contributing to overall economic health.

A description of each alternative and evaluation of environmental impacts is presented below:

#### 3.2.1. Alternative 1: Do Nothing

This alternative would have the lowest capital cost and would involve continuing to use the existing wastewater system without any changes. This alternative is not feasible as the current collection system will not be able to support future developments.

#### 3.2.2. Alternative 2: Gravity Sewer System for New Development

This option involves servicing new properties with gravity sewers. This is not a viable option as not all properties meet the required elevations to allow for gravity sewers to tie into the existing wastewater collection system.

#### 3.2.3. Alternative 3: New Sewage Pumping Station

This alternative involves constructing a new pumping station within the new Gateway Subdivision development. The construction of a new wet well system of sufficient storage volume with submersible pumps to meet the flow requirements for the wastewater collection system is considered a viable option.

City of Kawartha Lakes Highway 7 Pumping Station							
Project No. 2337786							
<i>Evaluation of Alternative Solutions</i>							
Description/Elements	Weighing Factor	Alt. 1		Alt. 2		Alt. 3	
		Do Nothing		Gravity Sewer System for New Development		New Sewage Pumping Station	
		Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
Meet Flow Capacity Requirements	0.25	0	0	0	0	5	1.25
Site/Neighbourhood/Impact/Noise/Odour/Aesthetics	0.05	5	0.25	5	0.25	4	0.2
Property Acquisition/Availability	0.05	5	0.25	5	0.25	5	0.25
Expansion Potential	0.2	0	0	1	0.2	5	1
Ease of Integration/Constructability	0.05	5	0.25	2	0.1	4	0.2
Terrestrial Habitat/Wildlife	0.05	5	0.25	5	0.25	5	0.25
Archaeological Resources	0.05	5	0.25	5	0.25	5	0.25
Operability	0.1	0	0	0	0	5	0.5
Capital/Operating Costs	0.2	5	1	4	0.8	3	0.6
<b>Total Weighted Score</b>	<b>1</b>		<b>2.25</b>		<b>2.1</b>		<b>4.5</b>

\*Scoring: 5 is the highest (best). The highest scoring alternative reflects the preferred solution

Figure 3: Alternatives Evaluation Matrix

## 4. PREFERRED ALTERNATIVE

The preferred alternative is to construct a new sewage pumping station located within the new Gateway Subdivision. The pumping station will be designed to provide sufficient storage volume and pumping capacity to meet the flow requirements for the wastewater collection system, while minimizing effects on ecological, aquatic, and cultural heritage environments.

The preferred alternative is to construct a new sewage pumping station located within the Gateway Subdivision. The new station is expected to be a wet well system with two submersible pumps rated to provide the required flow of 35 L/s each, configured in a duty-standby configuration. The pumping station will be equipped with emergency power system with an outdoor generator to allow for operations to continue if utility power is lost. Additionally, approximately 1000 m of forcemain will be required to support the proposed subdivision.

The proposed pumping station location is to be in the designated Block 45 of the new Gateway Subdivision. The station property is to be enclosed with a fence.

### 4.1. Mitigating Measures

Minimal impact to the natural environment is expected, as the chosen location will be within the redeveloped area containing the new Gateway Subdivision, away from trees, vegetation, and potential natural habitats. Typical environmental protection measures such as silt fencing and sediment control will

be implemented. See the Environmental Site Assessment, Source Water Protection Assessment, and Tree Impact Assessment Reports available in Appendices A, B, and C, respectfully.

#### 4.2. Estimated Cost

The high-level estimated cost of the new sewage pumping station installation is approximately \$3,400,000 including HST. The cost estimate breakdown is included in Appendix G.

## 5. EXISTING ENVIRONMENT INVENTORY

A detailed inventory was taken as part of the Environmental Site Assessment. The Environmental Site Assessment, Surface Water Protection Assessment and Tree Impact Reports are available in Appendices A, B, and C, respectfully. A geotechnical report for the development site was completed and is available in Appendix D.

### 5.1. Land Use and Planning

The study areas have a mixture of land uses. The proposed Gateway Subdivision is to be on an agriculturally zoned area, with the additional properties proposed on a zoned highway commercial area. Both areas are previously undeveloped land. The proposed Sewage Pumping Station is to be located in the Northwest corner of the newly developed Gateway Subdivision.

### 5.2. Natural Environment

#### 5.2.1. Environmental Site Assessment

The environmental concerns pertaining to the site location are inventoried in the Phase I Environmental Site Assessment available in Appendix A.

#### 5.2.2. Geophysical Environment - Geotechnical Investigation

The full geotechnical Investigation Report is available in Appendix D.

#### 5.2.3. Source Water Protection Assessment

Potential drinking water threats associated with the proposed development are inventoried in the Source Water Protection Assessment available in Appendix B.

### 5.3. Archaeological, Heritage, and Cultural Potential

The archeological features are inventoried in the Stage 1 and 2 Archeological Assessment Report available in Appendix E. The report concluded that there is no presence of any archeological resources of cultural value or interest.

The following screening checklists developed by MCM were completed as a part of the Project File (see Appendix F).

- 1) Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes
- 2) Criteria for Evaluating Archeological Potential
- 3) Criteria for Evaluating Marine Archeological Potential

As the site was subjected to an Archeological Assessment, the conclusion of the checklists is that the study area has low potential for archeological, built heritage, cultural heritage, and marine archaeological resources.

## 6. CONSULTATION

### 6.1. Notice of Commencement

The Notice of Commencement (available in Appendix H) dated February 6<sup>th</sup>, 2024, was published on the City of Kawartha Lakes website available at the following link:

<https://www.kawarthalakes.ca/en/news/notice-of-commencement-highway-7-sewage-pumping-station-class-environmental-assessment.aspx>

The notice provided contact information for the project and invited public participation and comments.

### 6.2. Public Information Centre

The notice of the PIC was advertised on the City's website (see following link) and distributed by email to relevant agencies, first nations groups, and public stakeholders using the notice prepared in Appendix I.

<https://www.kawarthalakes.ca/en/news/notice-of-public-information-centre-highway-7-sewage-pumping-station.aspx>

The public information centre was held on May 22<sup>nd</sup>, 2024. There were 5 attendees (sign in sheet available in Appendix I) and a prepared presentation was completed (available in Appendix I).

### 6.3. Agency Consultation

Consultation with review agencies has been undertaken throughout the project to establish requirements for approvals, determine the need for technical studies, evaluate environmental impacts of potential solutions, and develop mitigating measures.

Project Notices were circulated to the list of project contacts (available in Appendix J). Records of correspondence, and responses from review agencies including MECP and MCM are included in Appendix K.

#### ***Highlights of Agency Consultation/Correspondence:***

Emails:

- Notice of Commencement – Highway 7 Sewage Pumping Station – MCM response
- Notice of Commencement – Highway 7 Sewage Pumping Station – MECP response

Automatic Responses have not been included.

### 6.4. First Nations Consultation

Consultation with First Nations groups has been undertaken throughout the project to assess the impacts of the project on Aboriginal or treaty rights.

Project Notices were circulated to the list of project contacts (available in Appendix J). Records of correspondence, and responses First Nations groups are included in Appendix L.

***Highlights of First Nations Consultation/Correspondence:***

Emails:

- Notice of Commencement – Highway 7 Sewage Pumping Station – Alderville First Nations Response

Automatic Responses have not been included.

The original notice with information regarding the EA process and goals of the project were distributed to First Nations groups in February 2024. The EA report and Notice of Completion will be provided to the contacts for each group.

## 6.5. Public Consultation

Consultation with interested public stakeholders has been undertaken throughout the project.

Project Notices were circulated to the list of project contacts (available in Appendix J) and posted to the City of Kawartha Lakes website (link below).

<https://www.kawarthalakes.ca/en/news/notice-of-commencement-highway-7-sewage-pumping-station-class-environmental-assessment.aspx>

Questions and responses from and to interested members of the public can be found in Appendix M. Automatic responses have not been included.

## 6.6. Notice of Completion

The Notice of Completion (see Appendix N) was issued on **September 2<sup>nd</sup>, 2024** for publication on the City of Kawartha Lakes website. This environmental study report is now available for the required 30-day review period.

## 7. CONCLUSION

The City of Kawartha Lakes has identified a need for upgrades to the wastewater collection system within the rapidly expanding community of Lindsay. To support new developments within the community of Lindsay (including the Gateway Subdivision), upgrades to the wastewater collection system are required.

An additional 35 L/s of flow capacity will be required to support the new homes to be built in the Gateway Subdivision. Various options were considered to address the required capacity upgrades to the wastewater collection system. Three alternatives were considered, and one feasible alternative was selected and refined. Detailed evaluations of the alternatives have resulted in the preferred alternative of a new sewage pumping station located within the designated Block 45 of the new Gateway Subdivision. The proposed new sewage pumping station will be a wet well system complete with two submersible pumps each rated to provide the required 35 L/s of flow, in a duty-standby configuration. The new pumping station will provide sufficient storage volume and pumping capacity to meet the flow requirements for the wastewater collection system. This option constitutes the final selected alternative.

Respectfully Submitted,

**THE GREER GALLOWAY GROUP INC.  
CONSULTING ENGINEERS**



**Tony Guerrero, P. Eng.  
Senior Project Manager**

**APPENDIX A: Environmental Site Assessment**



# Phase I Environmental Site Assessment – 318 and 322 Lindsay Street South, 2387 Highway 7, and Part of Lot 17, Concession 6, Lindsay, Ontario

July 6, 2023

Prepared for:  
Bromont Lindsay 2 Corp

Cambium Reference: 18234-001

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## **Executive Summary**

Bromont Lindsay 2 Corp retained Cambium Inc. (Cambium) to complete a Phase I Environmental Site Assessment (ESA) of the property at 318 and 322 Lindsay Street South, 2387 Highway 7, and Part of Lot 17, Concession 6 in Lindsay, Ontario (Site). The 35.42 ha Site is developed with two single-storey commercial buildings (Site Buildings A and B) and a Quonset hut. Site Building A is located at 318 Lindsay Street South, on the west portion of the Site. Site Building B is located at 322 Lindsay Street South, on the west portion of the Site.

The Phase I ESA was undertaken to identify potential and actual environmental concerns associated with current and historical activities at the Site and surrounding properties, for the purpose of internal due diligence and refinancing and will not be used to support a site plan application. The Phase I ESA was conducted consistent with the standard practices established in Canadian Standards Association Standard Z768-01 (CSA, 2016).

Based on the findings of the Phase I ESA, no further work (i.e., Phase II ESA) is warranted at this time.

Due to the age of the Site Buildings and the potential for designated substances (e.g., asbestos, lead), a designated substance survey should be completed if a renovation/demolition is completed. It should be noted that the Site Buildings are currently vacant, and the Client reported that all buildings materials are in good condition.

A response to a Freedom of Information request to the Ministry of the Environment, Conservation and Parks was not received prior to completion of the report. The response will be provided under separate cover if it changes the findings of the Phase I ESA.



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## **1.0 Introduction**

Bromont Lindsay 2 Corp (the 'Client') retained Cambium to complete a Phase I ESA of the property which includes 318 and 322 Lindsay Street South, 2387 Highway 7, and Part of Lot 17, Concession 6 in Lindsay, Ontario (the Site). The due diligence assessment was completed to identify actual and/or potential environmental concerns associated with current and historical activities at the Site and surrounding properties. It is understood the report has been requested for the purpose of internal due diligence and refinancing and will not be used to support a site plan application.

This Phase I ESA was conducted consistent with the standard practices established in the CSA Standard Z768-01 (CSA, 2016). This report describes the methods used to investigate environmental concerns that may affect the Site at the time of the assessment.

### **1.1 Scope of Work**

The Phase I ESA consisted of the following:

- A review of pertinent background and historical information including documents such as aerial photographs, city directories, and topographic maps (as available).
- A review and summary of available environmental records obtained from the Site and/or public and private sources.
- A site visit and observation of the surrounding properties from publicly accessible areas.
- Interview(s) with person(s) knowledgeable of the history of the Site.
- Preparation of this report documenting the findings of the Phase I ESA and recommendations for further work, if any, required to ascertain the environmental condition of the Site.

No intrusive sampling was completed as part of this Phase I ESA. While the report considers environmental concerns, both past and present, it is limited by the availability of information obtained at the time of the assessment.



## 2.0 Site Description

The Site consists of a 35.42 ha (87.52 acre) land parcel of 318 and 322 Lindsay Street South, 2387 Highway 7, and Part of Lot 17, Concession 6 in Lindsay, Ontario. The Universal Transverse Mercator coordinates for the centre of the Site are Zone 17T, 681,379 m east, 4,911,599 m north. The Site location is shown on Figure 1.

The 35.42 ha Site is largely developed as agricultural land and developed with two single-storey commercial buildings (Site Buildings A and B) and a Quonset hut. Site Building A is located at 318 Lindsay Street South on the west portion of the Site. Site Building B is located at 322 Lindsay Street South on the west portion of the Site. The remainder of the Site is used for agricultural land, with fragmented woodland areas, and an onsite creek that flows south of Building B travelling in a east to west direction towards the Scugog River.

Site Building A was constructed between 1965 and 1976 based on the aerial image and Site Building B was constructed in approximately between 1928 and 1959. The Site Buildings are currently vacant.

The Site is generally flat with some moderate localized changes in elevation. The Site is surrounded on all sides by parkland, community and commercial properties.

The Site and surrounding land uses are shown on Figure 2. Photographs of the Site are included in Appendix A.



### 3.0 Phase I ESA Investigation Methodology

The Phase I ESA methodology is described in the following sub-sections.

#### 3.1 Records Review

Cambium made appropriate inquiries to obtain information and documents as were reasonably ascertainable and pertained to the Site. The following documents were available for review and were used to develop the information database for this report.

- Ontario Base and Topographic Mapping accessed through Land Information Ontario.
- The Physiography of Southern Ontario map (Chapman & Putnam, 2007).
- 1928, 1959, 1965, 1976, 1981, 2008, 2013 and 20191 aerial imagery (Figure 3 to Figure 10).
- A Freedom of Information (FOI) request was submitted to the Ministry of the Environment, Conservation and Parks (Ministry). A copy of the FOI request is included in Appendix B.
- A search of available city directories for the Site and surrounding properties was requested from Environmental Risk Information Services Ltd. (ERIS). A copy of the city directories is included in Appendix C.
- Cambium contracted ERIS to provide a Database Report for the Site (ERIS, 2023). ERIS is a private environmental database and information service company. The ERIS report summarizes the findings of a search of various federal, provincial, and private source databases for the Site and properties within a search radius of 250 m from the centre of the Site. This search radius was chosen to ensure that all parts of the adjacent properties were included in the database search. A copy of the ERIS report is provided in Appendix D.
- A request was submitted to Opta Information Intelligence (Opta) for available Fire Insurance Plans (FIPs), insurance inspection reports, and site plans pertaining to the Site. A copy of the Opta report is included in Appendix E.
- The *Waste Disposal Site Inventory* (MOE, 1991) was reviewed to identify waste disposal sites within 1,000 m of the Site.
- The *Inventory of Industrial Facilities Producing or Using Coal Tar or Related Tars in Ontario* (MOE, 1988a) was reviewed to identify facilities that produced or used coal or related tars within 1,000 m of the Site.
- The *Inventory of Coal Gasification Plant Waste Sites in Ontario* (MOE, 1988b) was reviewed to identify coal gasification plant waste sites within 1,000 m of the Site.



- Previous environmental reports pertaining to the Site were requested from the Client.

### **3.2 Site Visit**

A Site visit was conducted on June 13, 2023, to observe the Site and adjacent properties (from the Site as well as nearby publicly accessible areas) to identify actual and potential on-site and off-site sources of environmental contamination. The site visit was used to identify the following, if present:

- Areas of surface staining or stressed vegetation.
- Areas with fill and/or debris.
- The location, contents, construction details, and volumes of aboveground storage tanks (ASTs) and underground storage tanks (USTs), and drums, totes, bins, or other containers.
- Potable or non-potable water sources, including current and/or historical water sources.
- Current and historical sewage works, including locations.
- Wastewater discharge points.
- Water bodies and intermittent ditches.
- Ground cover and surface materials.
- Below ground access points (e.g., manholes).
- Location of current or historical railway lines or spurs.
- Unidentified substances, staining, or corrosion observed at the Site, including within buildings and/or structures.
- Existing structures to obtain a general description of the structures, including the number, age, and height of all buildings.
- Improvements to the building(s) and/or structures at the Site.
- Entries and exits to the buildings and structures.
- Heating and cooling systems of each building and/or structure.
- Drains, pits, and sumps, including documenting the purpose and use.

Additionally, the following aspects were discussed and identified, if applicable:

- Hazardous materials currently and historically stored at the Site.
- By-products and/or wastes of the current or historical operations at the Site.
- Raw materials currently or historically stored/handled at the Site.
- Oil/water separators and/or hydraulic lift equipment (e.g., elevators, in-ground hoists, and loading docks), if any, at the Site.
- Vehicle or equipment maintenance areas.



- Spills or releases of materials, including dates, locations, materials involved, and volumes.

### **3.3 Site Interviews**

In an effort to obtain further information regarding the site use, occupancy history, and environmental conditions at the Site, interviews are conducted with persons knowledgeable of the Site. This may include current occupants and/or owners of the Site, or an individual with control of the Site or authority to act on behalf of the owner; previous owners and/or occupants; and/or, where the owner/occupant is not available, at least one owner or occupant of an adjacent property and one provincial or municipal government official, both of whom should be familiar with the Site.



## 4.0 Phase I ESA Findings

### 4.1 Records Review

Information obtained from the documents summarized in Section 3.1 is discussed below.

#### 4.1.1 Miscellaneous Document Review

The following information was obtained from the documents collected as part of the records review:

- A topographic map (MNRF, 2023) of the study area provided information regarding the regional topography, inferred groundwater flow direction, surface water drainage, and general development in the area surrounding the Site. Refer to Figure 1.
  - The ground surface at the Site generally slopes down towards the southwest.
  - Surface water drainage at the Site is expected to infiltrate the ground surface or be directed toward catch basins on the Site (or on the adjacent roadways).
  - Regional surface water drainage is expected to flow overland to the west toward Scugog River about 180 m west of the Site.
  - Based on the topography, drainage flow pattern of the area and proximity to Scugog River, the inferred shallow groundwater flow is westerly.
- Physiography of Southern Ontario mapping (Chapman & Putnam, 2007) indicates that the Site is within the Clay Plains physiographic region, characterized by fine-textured glaciolacustrine deposits.
- Overburden is mapped as silt and clay, minor sand and gravel (OGS, 2010).
- Bedrock is mapped as limestone, dolostone, shale, arkose, sandstone Ottawa Group; Simcoe Group; Shadow Lake Formation (OGS, 2007).
- A detailed review of aerial imagery is presented in Appendix F. The following summarizes the findings of the aerial photograph review:
  - A railway is present on the site in 1928 and appears to have been removed from the Site and surrounding properties between the 1928 and 1959 aerial images. Two dwellings are present on the south portion of the Site with agricultural or undeveloped land occupying the remaining portion of the Site between 1928 to 1976. The buildings at 318 and 322 are present in the 1976 image, and the two dwellings on the south portion of the Site appear to have been removed by 2008.



- The surrounding properties are agricultural fields in 1928 with some residential or farm dwellings. The car dealership to the south of the Site, and the golf course to the east of the Site are developed by 2008. Structures are present at 344 and 354 Lindsay Street South to the west of the Site, are developed by 1959, and were further developed by 1976 to their current configuration.

The presence of the railway line in the 1928 aerial image is considered a potential environmental concern; however, it is Cambium's opinion that no further work is warranted at this time given the lack of staining observed, as well as the source has been removed. Based on the above, confirmation soil samples should be collected at the time of Site redevelopment and/or divestiture.

As identified in the aerial images, and site visit, an automotive repair facility is located adjacent to the west of the Site and south of 332 Lindsay Street South. It should be noted that the building at this property where repairs are conducted is located approximately 60 m west and 20 m south of the closest Site boundaries. This property is situated hydraulically downgradient of the Site relative to the inferred groundwater flow direction. Furthermore, a tributary of the Scugog River intersects the north boundary of this property to the south boundary of the Site (332 Lindsay Street South). Based on the above-noted information, including the distance between this property and the Site, the inferred groundwater flow direction, and the presence of the creek intersecting the north property boundary, this property does not pose an environmental concern for the Site at this time.

An automotive dealership/repair facility was located approximately 25 m south of the Site, with the building where repairs are conducted located approximately 60 m south of the Site. In addition, this property is situated hydraulically cross-gradient of the Site relative to the inferred groundwater flow direction. Based on the distance between the building at this property and the Site and the inferred groundwater flow direction, this property does not pose an environmental concern for the Site at this time.

- City directories dated 1962 to 2021 were reviewed in approximately five-year intervals. It should be noted that no city directories were available for Lindsay, Ontario prior to 1962 or subsequent to 2021. The city directory search identified the following for the Site:



- 318 Lindsay Street South – RMR Memorials Ltd. (2012-2017). Based on available google street view of this property from 2009, RMR Memorials was a retailer of cemetery monuments and headstones. Based on these operations and observations made during the Site visit, this former use does not pose an environmental concern for the Site.
- 322 Lindsay Street South – Site not listed. Based on available google street view of this property from 2009, the Site was occupied by Organics which was a retailer of mulches, top soil, interlocking, sand and gravel. Based on these operations and observations made during the Site visit, this former use does not pose an environmental concern for the Site.

Significant listings for nearby properties included the following:

- 344 Lindsay Street South – Moynes Collision/Moynes Auto Body (2012-2021). This property is located adjacent to the west portion of the Site and approximately 10 m south of the central portion of the Site. It should be noted that the building at this property where repairs are conducted is located approximately 60 m west and 20 m south of the closest Site boundaries. In addition, this property is situated hydraulically downgradient of the Site relative to the inferred groundwater flow direction. Furthermore, a tributary of the Scugog River intersects the north boundary of this property to the south boundary of the Site (332 Lindsay Street South). Based on the above-noted information, including the distance between this property and the Site, the inferred groundwater flow direction, and the presence of the creek intersecting the north property boundary, this property does not pose an environmental concern for the Site at this time.
- 15 Willowdale Court – Boyer Chevrolet Ltd. (2017-2021). This property is located approximately 25 m south of the Site, with the building where repairs are conducted located approximately 60 m south of the Site. In addition, this property is situated hydraulically cross-gradient of the Site relative to the inferred groundwater flow direction. Based on the distance between the building at this property and the Site and the inferred groundwater flow direction, this property does not pose an environmental concern for the Site.
- Review of the Waste Disposal Site Inventory (MOE, 1991) did not identify waste disposal sites within 500 m of the Site.



- Review of the *Inventory of Industrial Facilities Producing or Using Coal Tar or Related Tars in Ontario* (MOE, 1988a) did not identify industrial facilities that produced or used coal tar or related tars within 500 m of the Site.
- Review of the *Inventory of Coal Gasification Plant Waste Sites in Ontario* (MOE, 1988b) did not identify coal gasification plant waste sites within 500 m of the Site.
- A response was received from Opta indicating that no FIPs, Insurance Inspection Reports or Site Plans were available for review.

#### **4.1.2 Regulatory Records Review**

A response from the Ministry was not received prior to completion of this report. The FOI response will be provided under separate cover if it changes the findings of the Phase I ESA. A copy of the FOI request is included in Appendix B.

The ERIS report contained the following pertinent listings for the Site and neighbouring properties. A copy of the ERIS report is provided in Appendix D.

No environmentally significant on-site records were identified.

#### **Off-Site Records**

##### ***282 Lindsay Street South (adjacent to the north portion of the Site)***

- The Ontario Regulation 347 Waste Generators Summary database indicated that Lindsay Golf and Country Club (ON1374581) was registered for the hazardous waste generation of petroleum distillates and waste oils and lubricants since 2003. A total of 1,599 kg of wastes were generated at this property between 2009 and 2014.

This property is located adjacent to the north portion of the Site, with the closest building approximately 20 m north of the Site. This property is situated hydraulically cross-gradient of the Site relative to the inferred groundwater flow direction. Based on the limited quantities of hazardous waste generated at this property, the distance between the building at this property and the cross-gradient position based on inferred groundwater flow direction, this property does not pose an environmental concern for the Site at this time.



### ***364 Lindsay Street South (adjacent to the west portion of the Site)***

- The Delisted Fuel Tanks database indicated that a 65,000 L double-walled fibreglass gasoline UST and a 65,000 L double-walled fibreglass diesel UST were installed at this property in 2017.

This municipal address no longer exists but appears to be located north of the Site, on the east side of Lindsay Street South. Based on this position and surrounding municipal addressed to the north, this listing is likely related to the Lindsay Golf Course (282 Lindsay Street South).

This property is located adjacent to the north portion of the Site, with the closest building approximately 20 m north of the Site. This property is situated hydraulically cross-gradient of the Site relative to the inferred groundwater flow direction. Based on the limited quantities of hazardous waste generated at this property, the fact that the USTs are double-walled fibreglass construction, the distance between the building at this property and the cross-gradient position based on inferred groundwater flow direction, this property does not pose an environmental concern for the Site at this time.

### ***Highway 7 and Highway 35 (adjacent to the southwest portion of the Site)***

- The Ontario Spills database indicated a spill of 1,000 L of furnace oil spilled onto a diked area at this property due to a container overflow that occurred on March 13, 1990.

The exact location of this property is unknown as it only refers to the intersection located adjacent to the southwest portion of the Site. This intersection is situated hydraulically downgradient of the Site relative to the inferred groundwater flow direction. In addition, during Cambium's site visit, no staining or odours were noted in this area. Based on visual observations during Cambium's site visit (i.e., lack of staining/odours), the inferred groundwater flow direction, the receiving medium (i.e., a diked area), and the length of time and development around this intersection since 1990, it is Cambium's opinion that this historical spill does not pose an environmental concern for the Site.

### **Other ERIS Listings**

The ERIS report also contained additional off-site listings in various databases. Review of these records indicated the data was for properties not in close proximity to the Site or was not environmentally significant.



Several unplottable records were identified in the ERIS report. A review of these records did not identify additional environmental concerns for the Site.

## **4.2 Site Visit**

Mr. Connor Frazer, conducted a site visit on June 13, 2023. Akinola Ifelola, Director of Engineering/ Land Development with Bromont Homes, was available to provide exterior access, and access to one storage shed. It should be noted that at the time of the site visit, Cambium was not provided with access within the Site Buildings A and B at 332 and 318 Lindsay Street South, and limited observations were made where possible.

The weather during the site visit was warm and clear, and weather conditions did not impede the assessment. A photographic record of the site visit is presented in Appendix A. The site visit findings are described below.

### **4.2.1 Buildings and Site Usage**

The 35.42 ha Site is developed with two single-storey commercial buildings (Site Buildings A and B) and a Quonset hut. Site Building A is located at 318 Lindsay Street South on the west portion of the Site. Site Building B is located at 322 Lindsay Street South on the west portion of the Site. In addition, a Quonset hut is located adjacent to the east portion of Site Building B. The portion of the property located at 322 Lindsay Street South had various items stored, including some machinery, fill material, a camping trailer, boat and seadoo storage and trailers, seacan containers, and some various pieces of scrap metal, wood and plastic. The remainder of the Site is used for agricultural use or undeveloped fragmented woodlands.

The two site buildings were originally constructed in approximately the 1950s. Access to the Site is from Lindsay Street South, or from Highway 7. Landscaped areas are located throughout developed portion of the Site. Car parking is permitted along the east side of the Site Buildings.



#### **4.2.2 Storage Tanks**

One 900 L, single-walled empty AST was observed adjacent to the east portion of the Quonset hut. The AST was installed on a competent concrete floor, and no visible evidence of spills (i.e., staining) was observed on the ground surface in the vicinity of the AST. Based on the above-noted information, this empty AST does not pose an environmental concern at this time. At the time the AST is removed from the Site, confirmation soil sampling should be completed if staining is observed.

Cambium's presence/absence assessment of storage tanks was based on visual observations, review of available information (e.g., ERIS), and information available from relevant regulatory agencies (e.g., the TSSA). Visual observation may not identify storage tanks that may have been present historically or that currently exist without documentation.

#### **4.2.3 Materials and Storage**

Significant quantities of chemicals or materials storage were not observed on the Site. It should be noted that at the time of the Site reconnaissance, Cambium was not provided access within the Site Buildings; however, it was reported to Cambium that small amounts of cleaning chemicals may potentially be stored in manufacturer supplied containers within the Site Buildings. No significant staining or spills were reported in the vicinity of these materials.

#### **4.2.4 Oil/Water Separators**

No oil/water separators were observed where accessed or reported during the site visit.

#### **4.2.5 Vehicle and Equipment Maintenance**

Vehicle parts were noted around the property of Site Building B; however, it was reported by the owner this was for storage, and no vehicle or equipment maintenance occurred on-site. In addition, no staining was reported by the Client or observed by Cambium.



#### **4.2.6 Waste – Solid, Liquid, or Hazardous/Industrial**

Domestic waste is stored in on-site containers and is picked-up periodically for disposal. No hazardous waste is generated on the Site.

#### **4.2.7 Sumps, Drains, Pits, and Lagoons**

No sumps, drains, pits, or lagoons were noted during the site visit where accessed.

#### **4.2.8 Spills**

No spills were observed or reported during the site visit.

#### **4.2.9 Stains**

No significant staining was observed where accessed during the site visit.

#### **4.2.10 Fill**

A fill pile was observed north of Site Building B. Based on conversations with Mr. Akinola Ifelola, the fill was reported as reworked native from other areas at the Site and was not brought in from an off-site location. Based on the above-noted information, it is Cambium's opinion that the reworked native soil is not considered a potential environmental concern to the Site.

#### **4.2.11 Air Emissions**

There was no evidence of sources of process-related air emissions at the Site.

#### **4.2.12 Special Attention Items**

##### **4.2.12.1 Polychlorinated Biphenyls**

Based on the age of the Site Buildings (more than 70 years ago), PCB containing light ballasts are potentially present. Prior to disposal, light ballasts should be checked for the presence or absence of PCBs to determine proper disposal.

No records of PCBs were identified at the Site in the ERIS report.



#### 4.2.12.2 Asbestos

Based on the age of the Site Buildings (more than 70 years ago), it is possible that asbestos-containing materials (ACM) are present in building materials. It should be noted that at the time of Cambium's site visit access within the Site Buildings was not provided; however, Cambium was advised by Mr. Akinola Ifelola that all building materials are reportedly in good condition.

#### 4.2.12.3 Lead

Based on the age of the Site Buildings (more than 70 years ago), there is potential for the presence of lead in originally painted surfaces. It should be noted that at the time of Cambium's site visit access within the Site Buildings was not provided; however, Mr. Akinola Ifelola reported that no peeling and flaking paint is located within the Site Buildings.

#### 4.2.12.4 Microbial Contamination and Mould

It should be noted that at the time of Cambium's Site visit access within the Site Buildings was not provided; however, Cambium was advised by Mr. Akinola Ifelola that no evidence of mould (e.g., odour or surficial mould) was not anticipated within the Site Buildings.

#### 4.2.12.5 Ozone Depleting Substances

Ozone depleting substances may be present as R22 refrigerant in heating, ventilation, and air conditioning units. No service contractor was reported for the Site.

No evidence of ozone depleting substances was reported at the Site, with the possible exception of refrigerants in on-site refrigerators, fire extinguishers, etc.

#### 4.2.12.6 Urea Formaldehyde Foam Insulation

No evidence of urea formaldehyde foam insulation (UFFI) was observed during the Site visit; however, based on the age of the Site Buildings (more than 70 years ago), it is possible that UFFI is within building cavities. The use of UFFI was banned in Canada in 1980.



#### 4.2.12.7 Radon, Noise, Electric and Magnetic Fields, and Vibration

Radon is a colourless, odourless, and tasteless gas formed by the natural breakdown of uranium in soil, rocks, and water. Based on a review of the Radon Potential Map of Ontario (REMC, 2013), the Site is within Zone 3 for radon potential. Zone 3 depicts geologic conditions where lower radon concentrations might be found when compared to Zones 1 or 2. Actual radon concentrations can only be determined using an on-site test.

A review of testing completed in residential homes by the Haliburton, Kawartha, Pine Ridge District Health unit indicated the risk of radon concentrations in Lindsay is low. Only 6.0% of residences tested in Lindsay had radon at levels exceeding the Canadian standard of 200 Bq/m<sup>3</sup> (Carex, 2019).

No significant sources of noise, electric or magnetic fields, or vibration were observed during the site visit.

#### 4.2.13 Pesticides and Herbicides

No pesticides or herbicides were observed during the site visit.

#### 4.2.14 Potable Water Supply

The Site is serviced by a municipal water system. No evidence of drinking water wells was observed during the site visit.

#### 4.2.15 Septic Fields

The Site is serviced by a municipal sewer system. No evidence of a septic field was observed during the site visit.

#### 4.2.16 Environmental Monitoring

No evidence of previous environmental monitoring (e.g., groundwater monitoring wells) was observed or reported during the site visit.



#### **4.2.17 Stressed Vegetation**

There was no evidence of stressed vegetation or differential plant growth observed during the site visit.

#### **4.2.18 Fires**

There was no evidence of historical fires observed during the site visit.

#### **4.2.19 Odours**

No strong, pungent, or noxious odours were observed during the site visit.

#### **4.2.20 Unidentified Substances**

No unidentified substances were observed or reported during the site visit.

#### **4.2.21 Adjacent Land Uses**

The properties within 100 m surrounding the Site are utilized for agricultural, commercial, residential and parkland purposes. Adjacent property uses, includes:

North – Commercial (Golf Course).

South – Highway 7 followed by commercial (Car Dealer, Farm Equipment Retailer and Repair Shop) and agricultural land.

The farm equipment repair shop is about 185 m southeast of the Site. Based on this distance, this is not considered a potential environmental concern to the Site.

East – Commercial (Golf Course)

West – Commercial buildings (Motel and Banquet Hall, Gas Station, Restaurant, Moynes Collision Repair Shop) followed by Lindsay Street South and parkland (Cemetery). As discussed in Section 4.1.1. under the city directories, based on the distance between this property and the Site, the inferred groundwater flow direction, and the presence of the creek intersecting the north property boundary, this property does not pose an environmental concern for the Site at this time.

Based on the aerial images, the gas station was not present in the 2019 aerial image, and therefore has been constructed in the past 4 years. Based on the inferred groundwater flow direction, as well as the short duration of operations, the gas station does not pose an environmental concern for the Site at this time.



### **4.3 Interviews**

Cambium interviewed Mr. Akinola Ifelola, Director of Engineering/Land Development with Bromont Homes. Mr. Ifelola has been associated with the Site for about five years. Information obtained during the interview is incorporated throughout Section 4.0.



## 5.0 Environmental Concerns

Based on the findings of the records review and site visit, an empty 900-L AST is evident on-site; however, no staining was observed in the vicinity of the AST. In addition, a former railway line was present on-site in the 1928 aerial photograph and appeared to have been removed from the Site and surrounding properties between the 1928 and 1959 aerial images. Based on observations at the time of Cambium's site visit (i.e., no staining), no further work is warranted at this time; however, at the time of site redevelopment and/or sale, confirmation soil samples should be collected in the vicinity of the former railway line, as well in the vicinity of the empty AST (if staining is observed at the time of removal).

Off-site sources of environmental concern were identified at neighbouring properties. However, based on the distance between these properties and the Site, the inferred groundwater flow direction, and/or short duration of operations, these sources are not considered a potential environmental concern for the Site at this time.



## **6.0 Conclusions and Recommendations**

Conclusions and recommendations regarding the current environmental conditions at the Site were based solely on the results from the document review, regulatory records review, and portions accessed during the site visit.

Based on the findings of the Phase I ESA, no further work (i.e., Phase II ESA) is warranted at this time.

Due to the age of the Site Buildings and the potential for designated substances (e.g., asbestos, lead), a designated substance survey should be completed if a renovation/demolition is completed. It should be noted that the Site Buildings are currently vacant, and the Client reported that all buildings materials are in good condition.

A response to an FOI request to the Ministry was not received prior to completion of the report. The response will be provided under separate cover if it changes the findings of the Phase I ESA.



## 7.0 Qualifications of the Assessor

This Phase I ESA was completed by Dave Labelle, B.A., EPT, as per CSA Standard Z768-01. Credentials are presented in Appendix G. Information presented in this report is true and accurate to the best of the assessors' knowledge.

Respectfully submitted,

**Cambium Inc.**

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Dave Labelle, B.A., EPT  
Project Coordinator

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Project Manager

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Senior Project Manager



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## 9.0 Standard Limitations

### Limited Warranty

In performing work on behalf of a client, Cambium relies on its client to provide instructions on the scope of its retainer and, on that basis, Cambium determines the precise nature of the work to be performed. Cambium undertakes all work in accordance with applicable accepted industry practices and standards. Unless required under local laws, other than as expressly stated herein, no other warranties or conditions, either expressed or implied, are made regarding the services, work or reports provided.

### Reliance on Materials and Information

The findings and results presented in reports prepared by Cambium are based on the materials and information provided by the client to Cambium and on the facts, conditions and circumstances encountered by Cambium during the performance of the work requested by the client. In formulating its findings and results into a report, Cambium assumes that the information and materials provided by the client or obtained by Cambium from the client or otherwise are factual, accurate and represent a true depiction of the circumstances that exist. Cambium relies on its client to inform Cambium if there are changes to any such information and materials. Cambium does not review, analyze or attempt to verify the accuracy or completeness of the information or materials provided, or circumstances encountered, other than in accordance with applicable accepted industry practice. Cambium will not be responsible for matters arising from incomplete, incorrect or misleading information or from facts or circumstances that are not fully disclosed to or that are concealed from Cambium during the provision of services, work or reports.

Facts, conditions, information and circumstances may vary with time and locations and Cambium's work is based on a review of such matters as they existed at the particular time and location indicated in its reports. No assurance is made by Cambium that the facts, conditions, information, circumstances or any underlying assumptions made by Cambium in connection with the work performed will not change after the work is completed and a report is submitted. If any such changes occur or additional information is obtained, Cambium should be advised and requested to consider if the changes or additional information affect its findings or results.

When preparing reports, Cambium considers applicable legislation, regulations, governmental guidelines and policies to the extent they are within its knowledge, but Cambium is not qualified to advise with respect to legal matters. The presentation of information regarding applicable legislation, regulations, governmental guidelines and policies is for information only and is not intended to and should not be interpreted as constituting a legal opinion concerning the work completed or conditions outlined in a report. All legal matters should be reviewed and considered by an appropriately qualified legal practitioner.

### Site Assessments

A site assessment is created using data and information collected during the investigation of a site and based on conditions encountered at the time and particular locations at which fieldwork is conducted. The information, sample results and data collected represent the conditions only at the specific times at which and at those specific locations from which the information, samples and data were obtained and the information, sample results and data may vary at other locations and times. To the extent that Cambium's work or report considers any locations or times other than those from which information, sample results and data was specifically received, the work or report is based on a reasonable extrapolation from such information, sample results and data but the actual conditions encountered may vary from those extrapolations.

Only conditions at the site and locations chosen for study by the client are evaluated; no adjacent or other properties are evaluated unless specifically requested by the client. Any physical or other aspects of the site chosen for study by the client, or any other matter not specifically addressed in a report prepared by Cambium, are beyond the scope of the work performed by Cambium and such matters have not been investigated or addressed.

### Reliance

Cambium's services, work and reports may be relied on by the client and its corporate directors and officers, employees, and professional advisors. Cambium is not responsible for the use of its work or reports by any other party, or for the reliance on, or for any decision which is made by any party using the services or work performed by or a report prepared by Cambium without Cambium's express written consent. Any party that relies on services or work performed by Cambium or a report prepared by Cambium without Cambium's express written consent, does so at its own risk. No report of Cambium may be disclosed or referred to in any public document without Cambium's express prior written consent. Cambium specifically disclaims any liability or responsibility to any such party for any loss, damage, expense, fine, penalty or other such thing which may arise or result from the use of any information, recommendation or other matter arising from the services, work or reports provided by Cambium.

### Limitation of Liability

Potential liability to the client arising out of the report is limited to the amount of Cambium's professional liability insurance coverage. Cambium shall only be liable for direct damages to the extent caused by Cambium's negligence and/or breach of contract. Cambium shall not be liable for consequential damages.

### Personal Liability

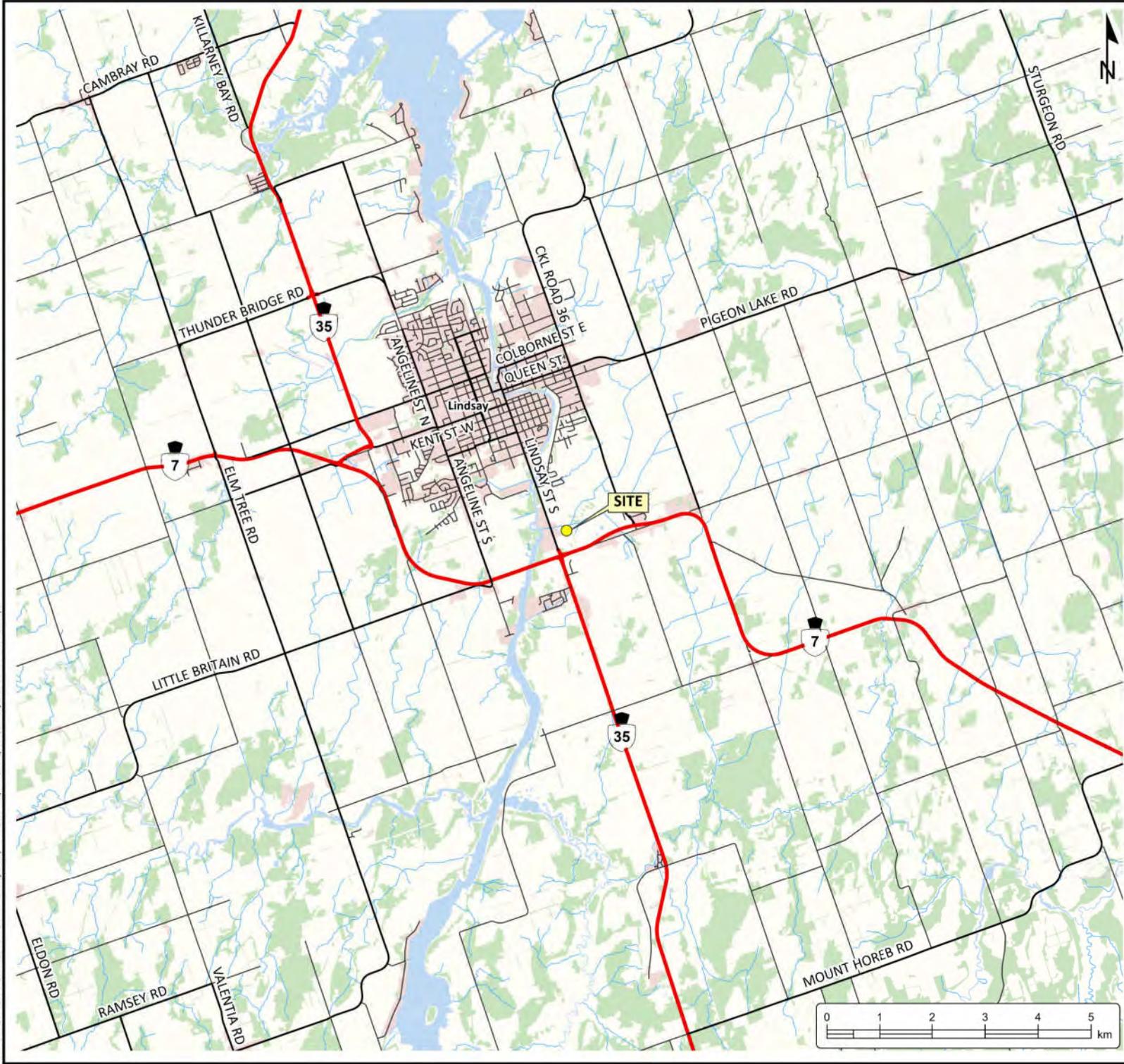
The client expressly agrees that Cambium employees shall have no personal liability to the client with respect to a claim, whether in contract, tort and/or other cause of action in law. Furthermore, the client agrees that it will bring no proceedings nor take any action in any court of law against Cambium employees in their personal capacity.



---

## Appended Figures

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**PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**  
**BROMONT LINDSAY 2 CORP**  
 318 and 322 Lindsay Street South,  
 2387 Highway 7, and  
 Part of Lot 17, Concession 6  
 Lindsay, Ontario

**LEGEND**

- Highway
- Major Road
- Minor Road
- Watercourse
- Water Area
- Wooded Area
- Built Up Area

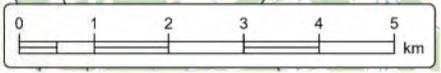
**Notes:**  
 - Base mapping features are © King's Printer of Ontario, 2022 (this does not constitute an endorsement by the Ministry of Natural Resources of the Ontario Government).  
 - Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.  
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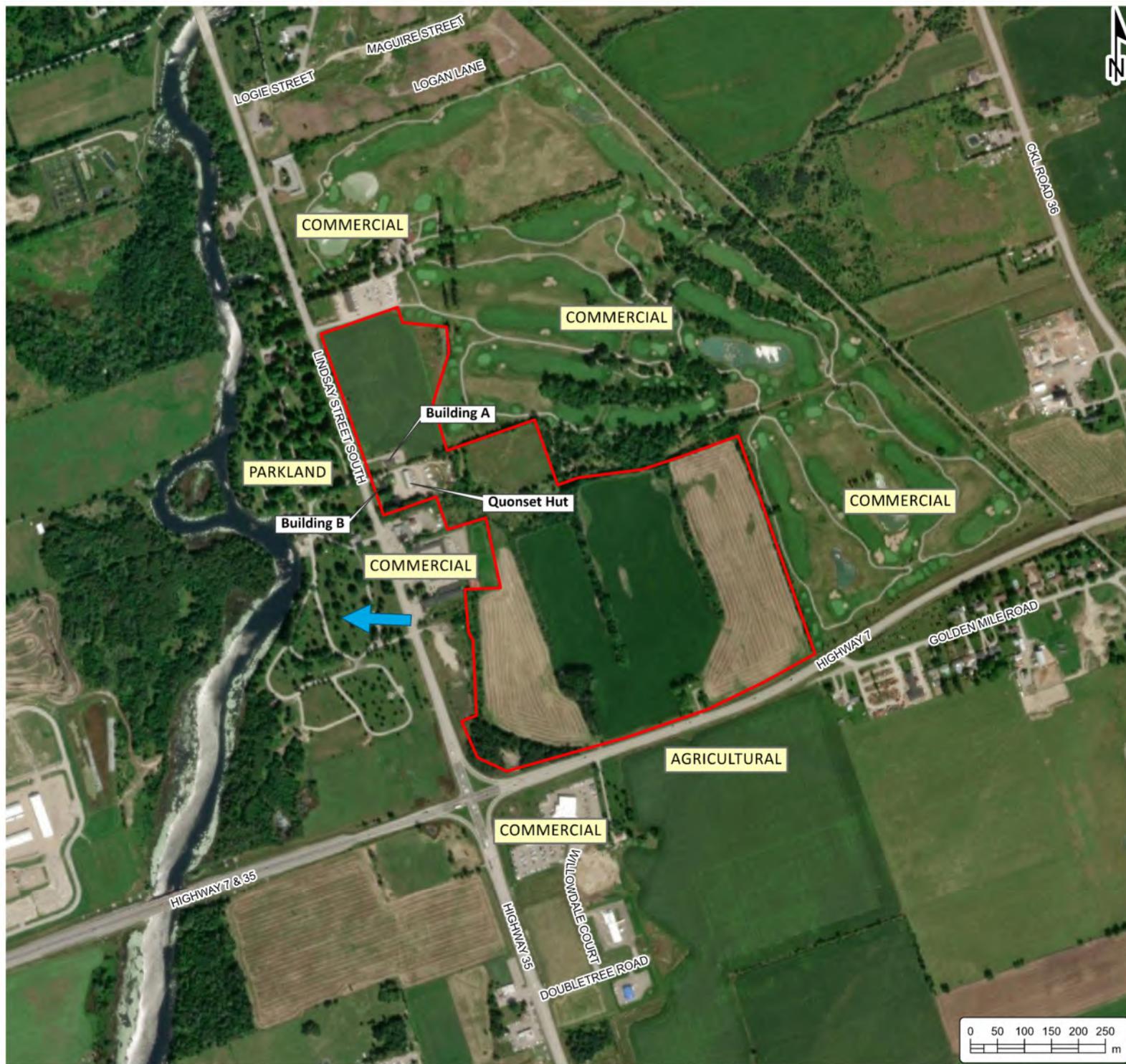
194 Sophia Street  
 Peterborough, Ontario, K9H 1E5  
 Tel: (705) 742.7900 Fax: (705) 742.7907  
 www.cambium-inc.com

**SITE LOCATION PLAN**

Project No.:	18234-001	Date:	July 2023
Scale:	1:100,000	Rev.:	
Created by:	TLC	Checked by:	LF
		Figure:	<b>1</b>



C:\GIS\AMDC\18234-001\18234-001\_Bromont Lindsay 2 Corp - Ph I ESA - Hwy 7 & Lindsay St S\_Lindsay\2023-06-15 Phase I ESA.aprx



**PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**  
BROMONT LINDSAY 2 CORP  
318 and 322 Lindsay Street South,  
2387 Highway 7, and  
Part of Lot 17, Concession 6  
Lindsay, Ontario

**LEGEND**

Site (approximate)

← Inferred Groundwater Flow Direction

**LAND USE**

**Notes:**  
- Base mapping features are © King's Printer of Ontario, 2022 (this does not constitute an endorsement by the Ministry of Natural Resources of the Ontario Government).  
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**SITE PLAN AND  
SURROUNDING LAND USE**

Project No.:	18234-001	Date:	July 2023
Scale:	1:10,000	Rev.:	
Created by:	TLC	Projection:	NAD 1983 UTM Zone 17N
Checked by:	LF	Figure:	<b>2</b>



**PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**  
**BROMONT LINDSAY 2 CORP**  
 318 and 322 Lindsay Street South,  
 2387 Highway 7, and  
 Part of Lot 17, Concession 6  
 Lindsay, Ontario

**LEGEND**

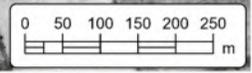
Site (approximate)

**Notes:**  
 - 1928 imagery was obtained from the National Air Photo Library  
 - Base mapping features are © King's Printer of Ontario, 2022 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).  
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**1928 AERIAL IMAGERY**

Project No.:	18234-001	Date:	July 2023
Scale:	1:10,000	Rev.:	
Created by:	TLC	Projection:	NAD 1983 UTM Zone 17N
Checked by:	LF	Figure:	<b>3</b>



O:\GIS\MXD\18230-18299\18234-001 Bromont Lindsay 2 Corp - Ph1 ESA - Hwy 7 & Lindsay St S. Lindsay\2023-06-15 Phase I ESA.aprx



**PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**  
 BROMONT LINDSAY 2 CORP  
 318 and 322 Lindsay Street South,  
 2387 Highway 7, and  
 Part of Lot 17, Concession 6  
 Lindsay, Ontario

**LEGEND**

Site (approximate)

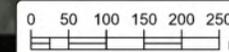
**Notes:**  
 - 1959 imagery was obtained from the National Air Photo Library.  
 - Base mapping features are © King's Printer of Ontario, 2022 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).  
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**1959 AERIAL IMAGERY**

Project No.:	18234-001	Date:	July 2023
Scale:	1:10,000	Rev.:	
Created by:	TLC	Projection:	NAD 1983 UTM Zone 17N
Checked by:	LF	Figure:	<b>4</b>



**PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**  
**BROMONT LINDSAY 2 CORP**  
 318 and 322 Lindsay Street South,  
 2387 Highway 7, and  
 Part of Lot 17, Concession 6  
 Lindsay, Ontario

**LEGEND**

 Site (approximate)

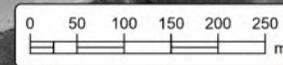
**Notes:**  
 - 1965 imagery was obtained from the National Air Photo Library.  
 - Base mapping features are © King's Printer of Ontario, 2022 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).  
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**1965 AERIAL IMAGERY**

Project No.:	18234-001	Date:	July 2023
Scale:	1:8,000	Rev.:	
Created by:	TLC	Projection:	NAD 1983 UTM Zone 17N
Checked by:	LF	Figure:	<b>5</b>



C:\GIS\MXD\182300-182991\18234-001 Bromont Lindsay 2 Corp - Ph I ESA - Hwy 7 & Lindsay St S. Lindsay 2023-06-15 Phase I ESA.aprx



**PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**  
BROMONT LINDSAY 2 CORP  
318 and 322 Lindsay Street South,  
2387 Highway 7, and  
Part of Lot 17, Concession 6  
Lindsay, Ontario

**LEGEND**

Site (approximate)

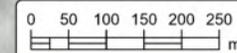
**Notes:**  
- 1976 imagery was obtained from the National Air Photo Library.  
- Base mapping features are © King's Printer of Ontario, 2022 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).  
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**1976 AERIAL IMAGERY**

Project No.:	18234-001	Date:	July 2023
Scale:	1:10,000	Rev.:	
Created by:	TLC	Projection:	NAD 1983 UTM Zone 17N
Checked by:	LF	Figure:	<b>6</b>





**PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**  
**BROMONT LINDSAY 2 CORP**  
 318 and 322 Lindsay Street South,  
 2387 Highway 7, and  
 Part of Lot 17, Concession 6  
 Lindsay, Ontario

**LEGEND**

Site (approximate)

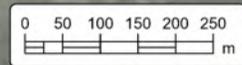
**Notes:**  
 - 1981 imagery was obtained from the National Air Photo Library.  
 - Base mapping features are © King's Printer of Ontario, 2022 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).  
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**1981 AERIAL IMAGERY**

Project No.:	18234-001	Date:	July 2023
Scale:	1:10,000	Rev.:	
Created by:	TLC	Projection:	NAD 1983 UTM Zone 17N
Checked by:	LF	Figure:	<b>7</b>



O:\GIS\MXDs\18200-18299\18234-001 Bromont Lindsay 2 Corp - Ph I ESA - Hwy 7 & Lindsay St S, Lindsay\2023-06-15 Phase I ESA.aprx



**PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**  
BROMONT LINDSAY 2 CORP  
318 and 322 Lindsay Street South,  
2387 Highway 7, and  
Part of Lot 17, Concession 6  
Lindsay, Ontario

**LEGEND**

 Site (approximate)

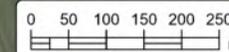
**Notes:**  
- 2008 imagery was obtained from the City of Kawartha Lakes online GIS.  
- Base mapping features are © King's Printer of Ontario, 2022 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).  
- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.  
- Cambium Inc. makes every effort to ensure this map is free from errors but cannot be held responsible for any damages due to error or omissions. This map should not be used for navigation or legal purposes. It is intended for general reference use only.

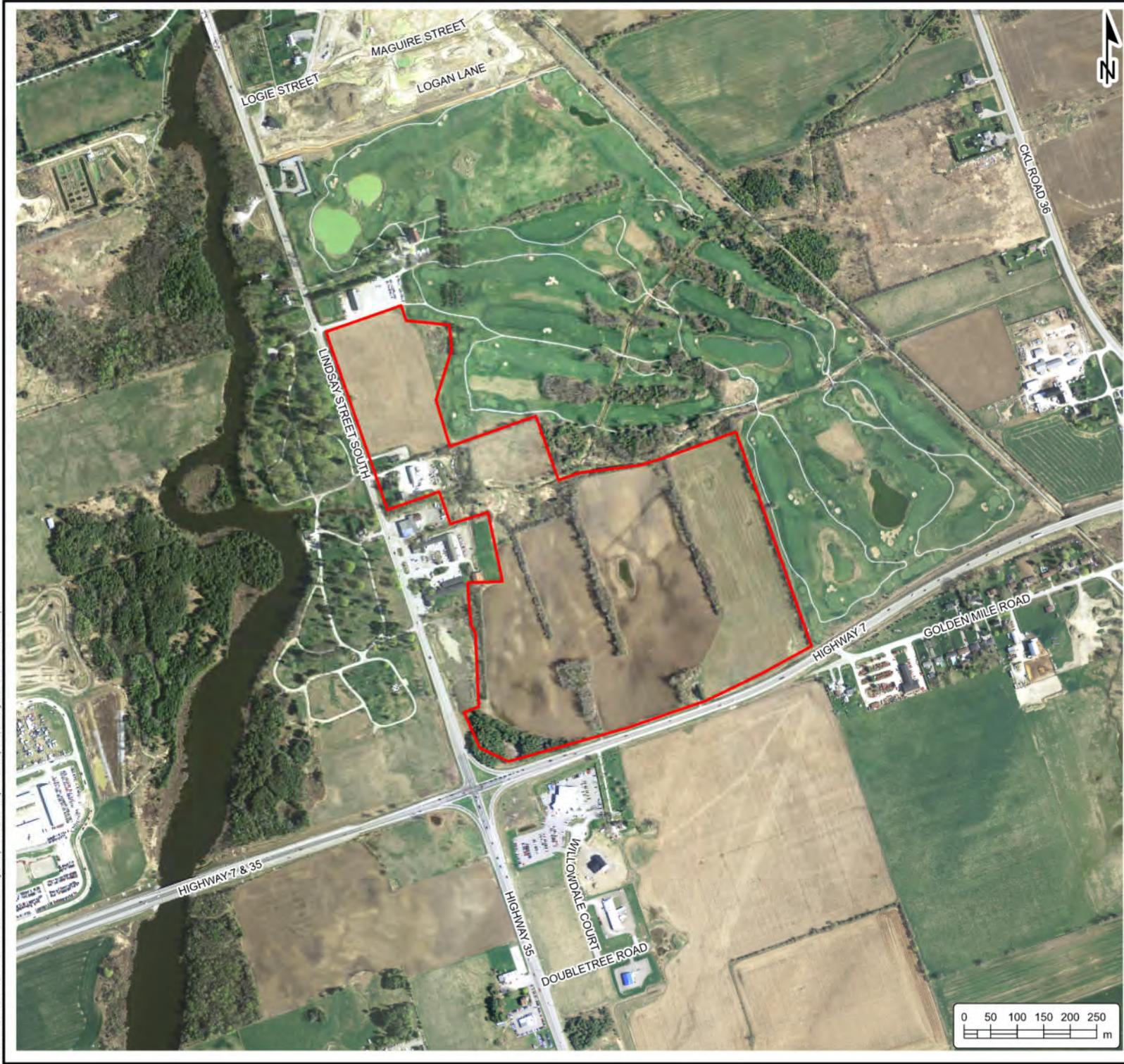


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**2008 AERIAL IMAGERY**

Project No.:	18234-001	Date:	July 2023
Scale:	1:10,000	Rev.:	
Created by:	TLC	Projection:	NAD 1983 UTM Zone 17N
Checked by:	LF	Figure:	<b>8</b>





**PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**  
**BROMONT LINDSAY 2 CORP**  
 318 and 322 Lindsay Street South,  
 2387 Highway 7, and  
 Part of Lot 17, Concession 6  
 Lindsay, Ontario



**LEGEND**

Site (approximate)

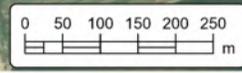
**Notes:**  
 - 2013 imagery was obtained from the City of Kawartha Lakes online GIS.  
 - Base mapping features are © King's Printer of Ontario, 2022 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).  
 - Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.  
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**2013 AERIAL IMAGERY**

Project No.:	18234-001	Date:	July 2023
Scale:	1:10,000	Rev.:	
Created by:	TLC	Projection:	NAD 1983 UTM Zone 17N
Checked by:	LF	Figure:	<b>9</b>



C:\GIS\MXD\18230-18299\18234-01 Bromont Lindsay 2 Corp - Ph I ESA - Hwy 7 & Lindsay St. S. Lindsay\2023-06-15 Phase I ESA.aprx



**PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**  
BROMONT LINDSAY 2 CORP  
318 and 322 Lindsay Street South,  
2387 Highway 7, and  
Part of Lot 17, Concession 6  
Lindsay, Ontario

**LEGEND**

 Site (approximate)

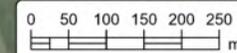
**Notes:**  
- 2019 imagery was obtained from Google Earth.  
- Base mapping features are © King's Printer of Ontario, 2022 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).  
- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.  
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**2019 AERIAL IMAGERY**

Project No.:	18234-001	Date:	July 2023
Scale:	1:10,000	Rev.:	
Created by:	TLC	Projection:	NAD 1983 UTM Zone 17N
Checked by:	LF	Figure:	<b>10</b>





Phase I Environmental Site Assessment – 318 and 322 Lindsay Street South, 2387 Highway 7, and Part of Lot 17, Concession 6, Lindsay, Ontario  
Bromont Lindsay 2 Corp  
Cambium Reference: 18234-001  
July 6, 2023

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## **Appendix A**

## **Photographs**

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***Photo 1 East portion of Site Building A. June 13, 2023.***



***Photo 2 East side of Quonset hut, June 13, 2023***



**Photo 3** AST located adjacent to the east portion of the Quonset hut. June 13, 2023.



**Photo 4** Interior of Quonset hut, marine storage, building supplies, hay. June 13, 2023.



***Photo 5 East portion of Site Building B, June 13, 2023***



***Photo 6 North portion of Site Building B, June 13, 2023***



**Photo 7** *Fill material pile (i.e., gravel) located on the east central portion of the Site, June 13, 2023.*



**Photo 8** *Fill material pile located on the east central portion of the Site, June 13, 2023.*



***Photo 9 Tributary of Scugog River located adjacent to the south elevation of the Site, June 13, 2023.***



***Photo 10 West portion of the Site, June 13, 2023.***



***Photo 11 South portion of Site Building A, June 13, 2023.***



***Photo 12 East portion of Site Building A, June 13, 2023.***



***Photo 13 Automotive repair facility located south and west of the central portion of the Site. June 13, 2023.***



***Photo 14 Property located south and west of the Site, June 13, 2023.***



***Photo 15 Property located west of the Site, June 13, 2023.***



***Photo 16 Property located adjacent to the north of the Site, June 13, 2023.***



***Photo 17 Automotive dealership located south of Site, June 13, 2023.***



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**Appendix B**  
**Freedom of Information Requests**

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# Ministry of the Environment, Conservation and Parks

## Freedom of Information Request for Property Information

### Instructions

Use this form to:

- submit and pay for a new FOI request for access to records/information about a property
- pay for a deposit or a final fee on an existing FOI request

Fields marked with an asterisk (\*) are mandatory.

**Are you: \***

- Submitting a new FOI Request for Property Information
- Paying a deposit or final fee for an existing FOI Request for Property Information

### Section 1 – Description of Records Requested

#### Time Period for Records Requested

From (yyyy/mm/dd) \*

To (yyyy/mm/dd) \*

1900/01/01

2023/06/09

**Type of Record(s) \***

- All environmental records relating to the identified property/site exclusive of Environmental Approvals and Registrations
- Environmental Approvals and Registrations (e.g. Environmental Compliance Approvals; Certificate of Approval; Renewable Energy Approvals; Environmental Activity and Sector Registry Registrations)

Select only if you are seeking access to an Approval or Registration that is not publicly available or if you are also seeking supporting documents relating to the Approval or Registration.

Operator and vendor Pesticide Licenses from September 4, 2018, final Approvals and Registrations are publicly available on the Access Environment website at:

<https://www.accessenvironment.ene.gov.on.ca/AEWeb/ae/GoSearch.action?search=basic&lang=en>.

Records of Site Condition (RSC) records are publicly available on the Brownfields Environmental Site Registry (BSER).

- RSC records between 2004 to June 30, 2011 are available at:  
<https://www.lrcsde.lrc.gov.on.ca/besrWebPublic/generalSearch>
- RSC records filed after July 2011 are available at:  
[https://www.lrcsde.lrc.gov.on.ca/BFISWebPublic/pub/earchFiledRsc\\_search?request\\_locale=en](https://www.lrcsde.lrc.gov.on.ca/BFISWebPublic/pub/earchFiledRsc_search?request_locale=en)

Other Specific Document(s)

**Type of Approval/Registration \***

- Drinking Water Licenses
  - No Supporting Documents
  - All Supporting Documents
  - Some Supporting Documents
- Pesticide Licenses

Only pesticide licenses post September 2018 are available. Prior to September 2018, only Pesticide license applications and supporting documentation is available

No Supporting Documents  All Supporting Documents  Some Supporting Documents

Permits to Take Water

No Supporting Documents  All Supporting Documents  Some Supporting Documents

Water Source \*

Groundwater  Surface Water

Noise Vibrations Approvals/Registrations

No Supporting Documents  All Supporting Documents  Some Supporting Documents

Air Emissions Approvals/Registrations

No Supporting Documents  All Supporting Documents  Some Supporting Documents

Water Approvals/Registrations - Ontario Water Resources Commission, treatment, ground level, standpipes & elevated storage, pumping stations (local & booster), mains

No Supporting Documents  All Supporting Documents  Some Supporting Documents

Sewage – Treatment, Stormwater, Storm, Leachate & Lieachate Treatment & Sewage pump stations, Sanitary

No Supporting Documents  All Supporting Documents  Some Supporting Documents

Waste Water - Industrial discharge

No Supporting Documents  All Supporting Documents  Some Supporting Documents

Waste Sites - Disposal, Landfill sites, Transfer stations, Processing sites, Incinerator sites

No Supporting Documents  All Supporting Documents  Some Supporting Documents

Waste Management Systems - haulers: sewage, non-hazardous & hazardous waste, mobile waste processing units, Polychlorinated Biphenyls (PCBs) storage, transfer or destruction, Waste Generator Systems)

No Supporting Documents  All Supporting Documents  Some Supporting Documents

Company Name

Waste Generator Registration - number/class

List any record(s) that should be excluded from the scope of your request (e.g. email correspondences; records originating from your organization/business; records already in your possession, prior year(s) annual reports for approvals)

Please provide any additional relevant information relating to your request. For example, does your request relate to any other ministry business? Please note that this information is being requested only in order to provide contextual information to the Access and Privacy Office and will not in any way affect or expedite the status of any related ministry business identified.

## Section 2 – Requester Information

Last Name \*  First Name \*  Middle Initial

Business/Organization Name (if applicable or indicate "N/A") \*

Project/Reference Number (if applicable)

Are you submitting this request on behalf of a client? \*  
 Yes  No

### Mailing Address

Unit Number  Street Number \*  Street Name \*

PO Box  City/Town \*  Province \*  Postal Code \*

Telephone Number \*  ext.  Email Address \*

Is there an alternate contact (e.g. office admin)? \*  
 Yes  No

### Alternate Contact

Last Name \*  First Name \*

Telephone Number \*  ext.  Email Address \*

## Section 3 – Current Property Address Information

Is the property a:

Park  Lake  First Nation Band  Wind Farm  Federal Land  Island  Unsurveyed Land

Are you requesting information about multiple addresses? \*

Yes  No

Please only submit a request with multiple addresses if the property is one site. To be considered one site, addresses must be adjacent to each other and owned by the same owner(s).

Do the multiple addresses belong to one site? \*

Yes  No

Please submit a separate FOI request for each address.

Site Name

### Property Address

Unit Number  Street Number  Street Name

Full Lot Number

Concession

Geographic Township

City/Town/Village \*

Lindsay

Closest Intersection

Lindsay Street South and Highway 7

### Section 4 – Previous Property Address Information

Do you want the ministry to search all prior historical addresses for this property/site for the time period of the records requested? \*

Yes  No

### Section 5 – Owner Information

Please provide all present and previous property owner and/or tenant names for the search years requested.

#### Current Property Owner/Tenant

318 and 332 Lindsay Street South  
Lindsay

Owner Name

N/A

Date of Ownership (yyyy/mm/dd)

Tenant Name

### Section 6 – Supporting Documents

Please upload any documents (e.g. Maps) that are relevant to your FOI request.

The total size of all attachments must not be more than 8 MB.

1. File Name

lindsay st s lkanduse.pdf

Total File Size

0.07 MB



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**Appendix C**  
**City Directories**

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CITY  
**DIRECTORY**

**Project Property:**     *18234-001 - Hwy 7 and Lindsay St S  
Hwy 7 and Lindsay St S  
Kawartha Lakes, ON*

**Project No:**

**Requested By:**       *Cambium Inc.*

**Order No:**            *23060900290*

**Date Completed:**    *June 19, 2023*

**Environmental Risk Information Services**

*A division of Glacier Media Inc.*

1.866.517.5204 | [info@erisinfo.com](mailto:info@erisinfo.com) | [erisinfo.com](http://erisinfo.com)

June 19, 2023  
RE: CITY DIRECTORY RESEARCH  
Hwy 7 and Lindsay St S  
Kawartha Lakes, ON

Thank you for contacting ERIS regarding our City Directory Search services. Our staff has conducted a reverse listing City Directory search to determine prior occupants of the subject site and adjacent properties. When searching a range of addresses, all civic addresses within that range found in the Directory are included.

Note: Reverse Listing Directories generally are focused on highly developed areas, while newly developed areas may be covered in the more recent years, older directories tend to cover only "central" parts of the city. To complete the search, we have either utilized the Toronto Reference Library, Library & Archives Canada and multiple digitized directories. While these do not claim to be a complete collection of all reverse listing city directories produced, ERIS has made every effort to provide accurate and complete information. ERIS shall not be held liable for missing, incomplete, or inaccurate information. If you believe there are additional addresses or streets that require searching, please contact us.

**Search Criteria:**

1-40 of Golden Mile Road  
549 of Halter Road  
2366 of Highway 7  
275-365 of Lindsay Street South  
15 of Willowdale Court

**Search Notes:**

## Search Results Summary

Date	Source	Comment
2021	DIGITAL BUSINESS DIRECTORY	
2017	DIGITAL BUSINESS DIRECTORY	
2012	DIGITAL BUSINESS DIRECTORY	
2001/02	VERNONS	
1997/98	VERNONS	
1995	POLKS	
1993/94	VERNONS	
1989	VERNONS	
1983	VERNONS	
1977	VERNONS	
1972	VERNONS	
1967	BOWERS	
1962	BOWERS	

### Environmental Risk Information Services

*A division of Glacier Media Inc.*

1.866.517.5204 | [info@erisinfo.com](mailto:info@erisinfo.com) | [erisinfo.com](http://erisinfo.com)

**ERIS City Directory Search**

as of 06/19/2023

**Project Property:** 18234-001 - Hwy 7 and Lindsay St S - Hwy 7 and Lindsay St S, Kawartha Lakes, ON CA

**Product Description:** CD - QUOTE Custom City Directory Search

**Notes to Client:**

ERIS Order No: 23060900290

ADDRESS	YEAR	LISTING	COMMENTS	SOURCE	CITY	COUNTY	STATE
1-40 GOLDEN MILE ROAD	2001/02	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1997/98	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1995	STREET NOT LISTED		POLKS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1993/94	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1989	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1983	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1977	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1972	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1967	STREET NOT LISTED		BOWERS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1962	STREET NOT LISTED		BOWERS	KAWARTHA LAKES	KAWARTHA LAKES	ON
12 GOLDEN MILE ROAD	2021	HUB INTERNATIONAL EQUIP LTD	HYDRAULIC EQUIPMENT & SUPPLIES (WHLS)	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2017	HUB INTERNATIONAL EQUIP LTD	FARM & GARDEN EQUIP MERCHANT WHOLS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2012	HUB INTERNATIONAL EQUIP LTD	OTHER METAL VALVE & PIPE FITTING MFG	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
36 GOLDEN MILE ROAD	2021	MIKE REDMOND HAULAGE	WRECKER SERVICE	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2017	MIKE REDMOND CONSTRUCTION	MASONRY MATERIAL MERCHANT WHOLS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2017	MIKE REDMOND PORTABLE TOILETS	SEPTIC TANK & RELATED SVCS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2012	MIKE REDMOND CONSTRUCTION	MASONRY MATERIAL MERCHANT WHOLS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
549 HALTER ROAD	2021	NO LISTING FOUND		DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2017	NO LISTING FOUND		DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2012	NO LISTING FOUND		DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2001/02	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1997/98	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1995	STREET NOT LISTED		POLKS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1993/94	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1989	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1983	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1977	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1972	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1967	STREET NOT LISTED		BOWERS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1962	STREET NOT LISTED		BOWERS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	2366 HIGHWAY 7	2021	HOEK VAN HOLLAND LANDSCAPING	LAWN & GROUNDS MAINTENANCE	DIGITAL BUSINESS DIRECTORY	LINDSAY	
2017		HOEK VAN HOLLAND LANDSCAPING	LANDSCAPE CONTRACTORS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
2012		NO LISTING FOUND		DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
2001/02		STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
1997/98		STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
1995		ADDRESS NOT LISTED		POLKS	KAWARTHA LAKES	KAWARTHA LAKES	ON
1993/94		STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
1989		STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
1983		STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
1977		STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
1972		STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
1967		STREET NOT LISTED		BOWERS	KAWARTHA LAKES	KAWARTHA LAKES	ON
1962		STREET NOT LISTED		BOWERS	KAWARTHA LAKES	KAWARTHA LAKES	ON
275-365 LINDSAY STREET SOUTH		2001/02	ALL RESIDENTIAL		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES
	1997/98	ALL RESIDENTIAL		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1995	NO LISTINGS WITHIN RADIUS		POLKS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1993/94	ALL RESIDENTIAL		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON

	1989	ALL RESIDENTIAL		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1983	ALL RESIDENTIAL		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1977	ALL RESIDENTIAL		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1972	ALL RESIDENTIAL		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1967	STREET NOT LISTED		BOWERS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1962	STREET NOT LISTED		BOWERS	KAWARTHA LAKES	KAWARTHA LAKES	ON
282 LINDSAY STREET SOUTH	2021	PRO SHOP	SPORTING GOODS-RETAIL	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2021	LINDSAY GOLF COUNTRY CLUB	BANQUET ROOMS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2017	PRO SHOP	SPORTING GOODS STORES	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2017	LINDSAY GOLF & COUNTRY CLUB	GOLF COURSES & COUNTRY CLUBS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2017	MURPHY'S GRILL	SPORTING GOODS STORES	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2012	LINDSAY GOLF & COUNTRY CLUB	GOLF COURSES & COUNTRY CLUBS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
318 LINDSAY STREET SOUTH	2017	RMR MEMORIALS LTD	STORE RETAILERS NOT SPECIFIED ELSEWHERE	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2012	RMR MEMORIALS LTD	STORE RETAILERS NOT SPECIFIED ELSEWHERE	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
332 LINDSAY STREET SOUTH	2012	CALIBRE CABINetry	FINISH CARPENTRY CONTRS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2001/02	ARBRO TRANSPORT LIMITED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1997/98	AMBRO TRANSPORT LIMITED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
344 LINDSAY STREET SOUTH	2021	MOYNES COLLISION	RECREATIONAL VEHICLES-TRANSPORTING	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2017	MOYNES AUTO BODY	AUTOMOTIVE BODY & INTERIOR REPAIR	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2012	MOYNES AUTO BODY	AUTOMOTIVE BODY & INTERIOR REPAIR	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
347 LINDSAY STREET SOUTH	2021	RIVERSIDE CEMETERY	CEMETERIES	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2017	RIVERSIDE CEMETERY	CEMETERIES & CREMATORIES	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2017	RIVERSIDE CREMATORIUM	CEMETERIES & CREMATORIES	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2012	RIVERSIDE CEMETERY	CEMETERIES & CREMATORIES	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2001/02	RIVERSIDE CEMETERY		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1997/98	RIVERSIDE CEMETERY		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
354 LINDSAY STREET SOUTH	2021	HOWARD JOHNSON BY WYNDHAM	HOTELS & MOTELS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2017	LINDSAY INN	HOTELS & MOTELS, EXCEPT CASINO HOTELS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2017	GREYHOUND COURIER EXPRESS	HOTELS & MOTELS, EXCEPT CASINO HOTELS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2012	LINDSAY INN	HOTELS & MOTELS, EXCEPT CASINO HOTELS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2001/02	LINDSAY INN		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	2001/02	GREYHOUND CANADA		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1997/98	LINDSAY INN		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
358 LINDSAY STREET SOUTH	2017	TOWN COUNTRY CERAMICS	HOBBY, TOY, & GAME STORES	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2012	TOWN & COUNTRY CERAMICS	HOBBY, TOY, & GAME STORES	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2001/02	TOWN & COUNTRY CERAMICS		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
** LINDSAY STREET SOUTH	2001/02	RMR MEMORIALS LTS		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	2001/02	MOYNES FORD AUTO BODY		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1997/98	RMR MEMORIALS		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1997/98	MOYNES FORD AUTO BODY		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1993/94	RMR MEMORIALS		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1993/94	MOYNES FORD AUTO BODY		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1993/94	RIVERSIDE CEMETERY		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1993/94	RED CARPET INN		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1989	RMR MEMORIALS		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1989	MOYNES FORD AUTO BODY		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1989	RIVERSIDE CEMETERY		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1989	RED CARPET INN		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1983	RMR MEMORIALS		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1983	FIGHTERS NEW & USED FURNITURE & APPLIANCES		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1983	CAMELOT COATS OF ARMS		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1983	BURNETT AUTO BODY LTD		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1983	RIVERSIDE CEMETERY		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1983	CORNIEL TRANSPORT		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1983	K & B INFLATION		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON

	1983	RED CARPET INN		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1977	RMR MEMORIALS		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1977	HONEST WILLY'S SECOND HAND STORE		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1977	KAWARTHA FEED MILLS LTD		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1977	CAMELOT COATS OF ARMS		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1977	BURNETT AUTO BODY LTD		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1977	MEYERS TRANSPORT LTD		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1977	RIVERSIDE CEMETERY		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1977	RED CARPET INN		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1972	RMR MEMORIALS		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1972	STOREY'S SECOND HAND STORE		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1972	BURNETT AUTO BODY LTD		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1972	MEYERS TRANSPORT LTD		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1972	RIVERSIDE CEMETERY		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1972	CAMELOT GIFT SHOP		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1972	RED CARPET INN		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
15 WILLOWDALE COURT	2021	BOYER CHEVROLET LTD	AUTOMOBILE DEALERS-USED CARS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2017	BOYER CHEVROLET LINDSAY	NEW CAR DEALERS	DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2012	NO LISTING FOUND		DIGITAL BUSINESS DIRECTORY	LINDSAY		ON
	2001/02	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1997/98	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1995	STREET NOT LISTED		POLKS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1993/94	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1989	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1983	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1977	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1972	STREET NOT LISTED		VERNONS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1967	STREET NOT LISTED		BOWERS	KAWARTHA LAKES	KAWARTHA LAKES	ON
	1962	STREET NOT LISTED		BOWERS	KAWARTHA LAKES	KAWARTHA LAKES	ON



Phase I Environmental Site Assessment – 318 and 322 Lindsay Street South, 2387 Highway 7, and Part of Lot 17, Concession  
6, Lindsay, Ontario  
Bromont Lindsay 2 Corp  
Cambium Reference: 18234-001  
July 6, 2023

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## **Appendix D**

## **ERIS Report**

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# DATABASE REPORT

**Project Property:** 18234-001 - Hwy 7 and Lindsay St S  
Hwy 7 and Lindsay St S  
Kawartha Lakes ON

**Project No:**

**Report Type:** Quote - Custom-Build Your Own Report

**Order No:** 23060900290

**Requested by:** Cambium Inc.

**Date Completed:** June 14, 2023

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# Executive Summary

## **Property Information:**

**Project Property:** 18234-001 - Hwy 7 and Lindsay St S  
Hwy 7 and Lindsay St S Kawartha Lakes ON

**Project No:**

## **Order Information:**

**Order No:** 23060900290  
**Date Requested:** June 9, 2023  
**Requested by:** Cambium Inc.  
**Report Type:** Quote - Custom-Build Your Own Report

## **Historical/Products:**

**City Directory Search** CD - QUOTE Custom City Directory Search  
**ERIS Xplorer** [ERIS Xplorer](#)  
**Insurance Products** Fire Insurance Maps/Inspection Reports/Site Plans

## Executive Summary: Report Summary

<i>Database</i>	<i>Name</i>	<i>Searched</i>	<i>Project Property</i>	<i>Boundary to 0.25km</i>	<i>Total</i>
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
AST	<i>Aboveground Storage Tanks</i>	Y	0	0	0
AUWR	<i>Automobile Wrecking &amp; Supplies</i>	Y	0	0	0
BORE	<i>Borehole</i>	Y	0	0	0
CA	<i>Certificates of Approval</i>	Y	0	7	7
CDRY	<i>Dry Cleaning Facilities</i>	Y	0	0	0
CFOT	<i>Commercial Fuel Oil Tanks</i>	Y	0	0	0
CHEM	<i>Chemical Manufacturers and Distributors</i>	Y	0	0	0
CHM	<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
DTNK	<i>Delisted Fuel Tanks</i>	Y	0	6	6
EASR	<i>Environmental Activity and Sector Registry</i>	Y	0	2	2
EBR	<i>Environmental Registry</i>	Y	0	2	2
ECA	<i>Environmental Compliance Approval</i>	Y	0	9	9
EEM	<i>Environmental Effects Monitoring</i>	Y	0	0	0
EHS	<i>ERIS Historical Searches</i>	Y	7	3	10
EIIS	<i>Environmental Issues Inventory System</i>	Y	0	0	0
EMHE	<i>Emergency Management Historical Event</i>	Y	0	0	0
EPAR	<i>Environmental Penalty Annual Report</i>	Y	0	0	0
EXP	<i>List of Expired Fuels Safety 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 &amp; Oceans Fuel Tanks</i>	Y	0	0	0
FRST	<i>Federal Identification Registry for Storage Tank Systems (FIRSTS)</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	24	24
GHG	<i>Greenhouse Gas Emissions from Large Facilities</i>	Y	0	0	0
HINC	<i>TSSA Historic Incidents</i>	Y	0	1	1

<b>Database</b>	<b>Name</b>	<b>Searched</b>	<b>Project Property</b>	<b>Boundary to 0.25km</b>	<b>Total</b>
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0	0	0
INC	Fuel Oil Spills and Leaks	Y	0	0	0
LIMO	Landfill Inventory Management Ontario	Y	0	0	0
MINE	Canadian Mine Locations	Y	0	0	0
MNR	Mineral Occurrences	Y	0	0	0
NATE	National Analysis of Trends in Emergencies System (NATES)	Y	0	0	0
NCPL	Non-Compliance Reports	Y	0	0	0
NDFT	National Defense & Canadian Forces Fuel Tanks	Y	0	0	0
NDSP	National Defense & Canadian Forces Spills	Y	0	0	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0
NEBI	National Energy Board Pipeline Incidents	Y	0	0	0
NEBP	National Energy Board Wells	Y	0	0	0
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	Y	0	0	0
OGWE	Oil and Gas Wells	Y	0	0	0
OOGW	Ontario Oil and Gas Wells	Y	0	0	0
OPCB	Inventory of PCB Storage Sites	Y	0	0	0
ORD	Orders	Y	0	0	0
PAP	Canadian Pulp and Paper	Y	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0
PES	Pesticide Register	Y	0	0	0
PINC	Pipeline Incidents	Y	0	0	0
PRT	Private and Retail Fuel Storage Tanks	Y	0	1	1
PTTW	Permit to Take Water	Y	0	1	1
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0
RSC	Record of Site Condition	Y	0	0	0
RST	Retail Fuel Storage Tanks	Y	0	0	0
SCT	Scott's Manufacturing Directory	Y	0	0	0
SPL	Ontario Spills	Y	0	1	1
SRDS	Wastewater Discharger Registration Database	Y	0	0	0
TANK	Anderson's Storage Tanks	Y	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	Y	0	0	0
VAR	Variances for Abandonment of Underground Storage Tanks	Y	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	Y	0	0	0
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	Y	0	0	0
WWIS	Water Well Information System	Y	18	29	47
<b>Total:</b>			25	86	111

## 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>
<a href="#"><u>1</u></a>	EHS		2387 Highway 7 Lindsay ON	ESE/0.0	1.00	<a href="#"><u>31</u></a>
<a href="#"><u>1</u></a>	EHS		2387 Highway 7 Lindsay ON	ESE/0.0	1.00	<a href="#"><u>31</u></a>
<a href="#"><u>1</u></a>	EHS		2387 Highway 7 Lindsay ON	ESE/0.0	1.00	<a href="#"><u>31</u></a>
<a href="#"><u>1</u></a>	EHS		2387 Highway 7 Lindsay ON	ESE/0.0	1.00	<a href="#"><u>31</u></a>
<a href="#"><u>2</u></a>	EHS		Highway 7 And Lindsay Street South Lindsay ON	ESE/0.0	1.12	<a href="#"><u>32</u></a>
<a href="#"><u>3</u></a>	WWIS		lot 16 con 6 ON  <i>Well ID:</i> 6404785	W/0.0	-1.31	<a href="#"><u>32</u></a>
<a href="#"><u>4</u></a>	WWIS		2376 TRANS CANADA HIGHWAY LINDSAY ON  <i>Well ID:</i> 7270543	NW/0.0	-1.31	<a href="#"><u>35</u></a>
<a href="#"><u>5</u></a>	WWIS		2376 TRANS CANADA HWY LINDSAY ON  <i>Well ID:</i> 7270544	NE/0.0	-0.31	<a href="#"><u>38</u></a>

<b>Map Key</b>	<b>DB</b>	<b>Company/Site Name</b>	<b>Address</b>	<b>Dir/Dist (m)</b>	<b>Elev diff (m)</b>	<b>Page Number</b>
<a href="#">6</a>	WWIS		2376 TRANS CANADA HWY LINDSAY ON  <i>Well ID: 7270545</i>	NW/0.0	-0.46	<a href="#">40</a>
<a href="#">7</a>	WWIS		2376 TRANS CANADA HIGHWAY LINDSAY ON  <i>Well ID: 7270542</i>	WSW/0.0	-0.31	<a href="#">43</a>
<a href="#">8</a>	WWIS		2376 TRANS CANADA HIGHWAY LINDSAY ON  <i>Well ID: 7270541</i>	ESE/0.0	2.75	<a href="#">45</a>
<a href="#">9</a>	WWIS		lot 16 con 6 ON  <i>Well ID: 6402599</i>	ESE/0.0	3.39	<a href="#">48</a>
<a href="#">10</a>	EHS		2387 Highway No. 7 City of Kawartha Lakes ON	S/0.0	3.61	<a href="#">50</a>
<a href="#">11</a>	WWIS		2376 TRANSCANADA HWY LINDSAY ON  <i>Well ID: 7270539</i>	SSW/0.0	1.60	<a href="#">51</a>
<a href="#">12</a>	WWIS		lot 17 con 6 ON  <i>Well ID: 6402602</i>	WNW/0.0	-1.25	<a href="#">53</a>
<a href="#">13</a>	WWIS		lot 16 con 6 ON  <i>Well ID: 6411990</i>	E/0.0	2.69	<a href="#">56</a>
<a href="#">13</a>	WWIS		lot 16 con 6 ON  <i>Well ID: 6412640</i>	E/0.0	2.69	<a href="#">61</a>
<a href="#">13</a>	WWIS		lot 16 con 6 ON	E/0.0	2.69	<a href="#">65</a>

<b>Map Key</b>	<b>DB</b>	<b>Company/Site Name</b>	<b>Address</b>	<b>Dir/Dist (m)</b>	<b>Elev diff (m)</b>	<b>Page Number</b>
			<b>Well ID:</b> 6415029			
<a href="#">13</a>	WWIS		lot 16 con 6 ON	E/0.0	2.69	<a href="#">68</a>
			<b>Well ID:</b> 6415093			
<a href="#">14</a>	WWIS		lot 16 con 6 ON	ESE/0.0	5.66	<a href="#">72</a>
			<b>Well ID:</b> 6404200			
<a href="#">15</a>	WWIS		2376 TRANS CANADA HWY LINDSAY ON	NW/0.0	1.39	<a href="#">76</a>
			<b>Well ID:</b> 7270546			
<a href="#">16</a>	EHS		Lindsay St S Kawartha Lakes ON K9V4R4	NW/0.0	1.66	<a href="#">78</a>
<a href="#">17</a>	WWIS		lot 17 con 6 ON	WNW/0.0	1.93	<a href="#">78</a>
			<b>Well ID:</b> 6402603			
<a href="#">18</a>	WWIS		LINDSAY STREET SOUTH LINDSAY ON	NW/0.0	2.69	<a href="#">81</a>
			<b>Well ID:</b> 7295790			
<a href="#">19</a>	WWIS		LINDSAY STRET SOUTH LINDSAY ON	NW/0.0	2.69	<a href="#">84</a>
			<b>Well ID:</b> 7295789			

## Executive Summary: Site Report Summary - Surrounding Properties

<b>Map Key</b>	<b>DB</b>	<b>Company/Site Name</b>	<b>Address</b>	<b>Dir/Dist (m)</b>	<b>Elev Diff (m)</b>	<b>Page Number</b>
<a href="#">20</a>	WWIS		2376 TRANSCANADA HWY LINDSAY ON <i>Well ID: 7270540</i>	ESE/4.4	5.64	<a href="#">86</a>
<a href="#">21</a>	WWIS		354 LINDSAY ST. SOUTH lot 16 con 6 LINDSAY ON <i>Well ID: 7238851</i>	W/6.6	-1.61	<a href="#">89</a>
<a href="#">22</a>	WWIS		354 LONDSAY STREET SOUTH LINDSAY ON <i>Well ID: 7270525</i>	WNW/8.7	2.39	<a href="#">92</a>
<a href="#">22</a>	WWIS		357 LINDSAY STREET SOUTH LINDSAY ON <i>Well ID: 7270526</i>	WNW/8.7	2.39	<a href="#">94</a>
<a href="#">23</a>	EASR	MOYNES FORD SALES LIMITED	344 LINDSAY STREET S. LINDSAY ON K9V 4R4	WNW/9.7	1.66	<a href="#">97</a>
<a href="#">24</a>	GEN	The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	WNW/13.2	-1.27	<a href="#">97</a>
<a href="#">25</a>	WWIS		lot 16 con 6 ON <i>Well ID: 6402597</i>	WNW/15.8	-2.63	<a href="#">97</a>
<a href="#">26</a>	WWIS		lot 16 con 6 ON <i>Well ID: 7349956</i>	SW/17.4	0.66	<a href="#">100</a>
<a href="#">27</a>	CA	LINDSAY CEMETERY COMPANY	RR #4, RIVERSIDE CEMETERY LINDSAY TOWN ON	W/23.1	-2.67	<a href="#">101</a>
<a href="#">27</a>	GEN	Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	W/23.1	-2.67	<a href="#">102</a>
<a href="#">27</a>	CA	Lindsay Cemetery Company	347 Lindsay St S Kawartha Lakes ON	W/23.1	-2.67	<a href="#">102</a>
<a href="#">27</a>	GEN	Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	W/23.1	-2.67	<a href="#">102</a>

<b>Map Key</b>	<b>DB</b>	<b>Company/Site Name</b>	<b>Address</b>	<b>Dir/Dist (m)</b>	<b>Elev Diff (m)</b>	<b>Page Number</b>
<a href="#">27</a>	GEN	Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	W/23.1	-2.67	<a href="#">103</a>
<a href="#">27</a>	EBR	The Lindsay Cemetery Corporation	347 Lindsay Street South Kawartha Lakes K9V 4R4 CITY OF KAWARTHA LAKES ON	W/23.1	-2.67	<a href="#">104</a>
<a href="#">27</a>	GEN	The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON	W/23.1	-2.67	<a href="#">104</a>
<a href="#">27</a>	ECA	The Lindsay Cemetery Corporation	347 Lindsay Street South Lot 17, Concession 5 Kawartha Lakes ON K9V4R4	W/23.1	-2.67	<a href="#">104</a>
<a href="#">27</a>	GEN	The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	W/23.1	-2.67	<a href="#">105</a>
<a href="#">27</a>	GEN	The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	W/23.1	-2.67	<a href="#">105</a>
<a href="#">27</a>	GEN	The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	W/23.1	-2.67	<a href="#">105</a>
<a href="#">27</a>	GEN	The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	W/23.1	-2.67	<a href="#">106</a>
<a href="#">27</a>	GEN	The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	W/23.1	-2.67	<a href="#">106</a>
<a href="#">28</a>	WWIS		LINDSAY ST lot 16 con 6 LINDSAY ON <b>Well ID:</b> 7162140	WSW/32.6	-0.24	<a href="#">106</a>
<a href="#">29</a>	EHS		Pt Lot 16 Kawartha Lakes ON	WSW/34.7	0.69	<a href="#">114</a>
<a href="#">30</a>	PRT	MOYNES FORD SALES LTD	LOT 16 CON 6 OPS TWP ON	W/40.5	-3.20	<a href="#">114</a>
<a href="#">30</a>	EBR	Moynes Ford Sales Ltd.	344 Lindsay Street South Kawartha Lakes Ontario K9V 4R4 CITY OF KAWARTHA LAKES ON	W/40.5	-3.20	<a href="#">114</a>

<b>Map Key</b>	<b>DB</b>	<b>Company/Site Name</b>	<b>Address</b>	<b>Dir/Dist (m)</b>	<b>Elev Diff (m)</b>	<b>Page Number</b>
<a href="#">30</a>	CA	Moynes Ford Sales Ltd.	344 Lindsay Street South Kawartha Lakes ON	W/40.5	-3.20	<a href="#">115</a>
<a href="#">30</a>	DTNK	MOYNES FORD SALES LTD	LOT 16 CON 6 OPS TWP ON L4G 1P4	W/40.5	-3.20	<a href="#">115</a>
<a href="#">30</a>	DTNK	MOYNES FORD SALES LTD	LOT 16 CON 6 OPS TWP ON	W/40.5	-3.20	<a href="#">116</a>
<a href="#">30</a>	DTNK	MOYNES FORD SALES LTD	LOT 16 CON 6 OPS TWP ON	W/40.5	-3.20	<a href="#">116</a>
<a href="#">30</a>	EASR	MOYNES FORD SALES LIMITED	344 LINDSAY STREET S. LINDSAY ON K9V 4R4	W/40.5	-3.20	<a href="#">117</a>
<a href="#">30</a>	ECA	Moynes Ford Sales Ltd.	344 Lindsay Street South Kawartha Lakes ON K9V 4R4	W/40.5	-3.20	<a href="#">117</a>
<a href="#">31</a>	WWIS		lot 17 con 5 ON <b>Well ID:</b> 6406530	WNW/57.7	2.39	<a href="#">117</a>
<a href="#">32</a>	WWIS		lot 16 con 6 ON <b>Well ID:</b> 6402598	WSW/58.4	0.61	<a href="#">120</a>
<a href="#">33</a>	WWIS		lot 16 con 6 ON <b>Well ID:</b> 6402600	WSW/66.3	-0.31	<a href="#">123</a>
<a href="#">34</a>	SPL	CANADIAN PACIFIC BULK SYSTEMS	LINDSAY BULK PLANT HWY 7 AND HWY 35 TANK TRUCK (CARGO) LINDSAY TOWN ON	SW/66.3	1.69	<a href="#">126</a>
<a href="#">35</a>	WWIS		282 LINDSAY ST. lot 17 con 6 LINDSAY ON <b>Well ID:</b> 6417663	NW/72.6	2.69	<a href="#">127</a>
<a href="#">36</a>	WWIS		lot 16 con 6 ON <b>Well ID:</b> 6408831	WSW/74.2	1.69	<a href="#">135</a>
<a href="#">37</a>	WWIS		ON <b>Well ID:</b> 6401747	W/75.9	-1.25	<a href="#">138</a>

<b>Map Key</b>	<b>DB</b>	<b>Company/Site Name</b>	<b>Address</b>	<b>Dir/Dist (m)</b>	<b>Elev Diff (m)</b>	<b>Page Number</b>
<a href="#">38</a>	WWIS		354 LINDSAY ST. SOUTH lot 16 con 6 LINDSAY ON <i>Well ID:</i> 7238850	WSW/78.0	0.78	<a href="#">140</a>
<a href="#">39</a>	EHS		354 Lindsay Street South Lindsay ON K9V 4R4	WSW/83.9	0.78	<a href="#">143</a>
<a href="#">40</a>	WWIS		lot 15 con 6 ON <i>Well ID:</i> 6402590	ESE/87.4	5.78	<a href="#">143</a>
<a href="#">41</a>	WWIS		356 LINDSAY ST. S lot 16 con 6 LINDSAY ON <i>Well ID:</i> 7238852	W/91.3	-0.84	<a href="#">146</a>
<a href="#">42</a>	EHS		15 Willowdale Court Lindsay ON K9V 4S5	S/92.1	4.63	<a href="#">148</a>
<a href="#">43</a>	WWIS		1279 LINDSAY ST SOUTH ON <i>Well ID:</i> 7181573	NW/106.3	1.73	<a href="#">149</a>
<a href="#">44</a>	WWIS		lot 16 con 5 ON <i>Well ID:</i> 6402526	W/111.0	-5.31	<a href="#">151</a>
<a href="#">45</a>	WWIS		lot 16 con 5 ON <i>Well ID:</i> 6402531	W/115.7	-1.24	<a href="#">154</a>
<a href="#">46</a>	WWIS		lot 15 con 6 ON <i>Well ID:</i> 6416505	ESE/150.2	5.66	<a href="#">157</a>
<a href="#">47</a>	HINC		323 LINDSAY STREET SOUTH LINDSAY ON	NW/153.5	0.69	<a href="#">161</a>
<a href="#">48</a>	GEN	LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	NW/180.9	1.26	<a href="#">162</a>
<a href="#">48</a>	CA	Lindsay Golf and Country Club (1965) Incorporated	282 Lindsay St S Kawartha Lakes ON	NW/180.9	1.26	<a href="#">162</a>
<a href="#">48</a>	CA	Lindsay Golf and Country Club (1965) Incorporated	282 Lindsay Street South Kawartha Lakes ON	NW/180.9	1.26	<a href="#">162</a>

<b>Map Key</b>	<b>DB</b>	<b>Company/Site Name</b>	<b>Address</b>	<b>Dir/Dist (m)</b>	<b>Elev Diff (m)</b>	<b>Page Number</b>
<a href="#">48</a>	GEN	LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	NW/180.9	1.26	<a href="#">163</a>
<a href="#">48</a>	GEN	LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	NW/180.9	1.26	<a href="#">163</a>
<a href="#">48</a>	GEN	LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	NW/180.9	1.26	<a href="#">164</a>
<a href="#">48</a>	GEN	LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	NW/180.9	1.26	<a href="#">164</a>
<a href="#">48</a>	GEN	LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON	NW/180.9	1.26	<a href="#">164</a>
<a href="#">48</a>	ECA	Lindsay Golf and Country Club (1965) Incorporated	282 Lindsay St S Kawartha Lakes ON K9V 4R8	NW/180.9	1.26	<a href="#">165</a>
<a href="#">48</a>	ECA	Lindsay Golf and Country Club (1965) Incorporated	282 Lindsay Street South Kawartha Lakes ON K9V 4R8	NW/180.9	1.26	<a href="#">165</a>
<a href="#">48</a>	GEN	LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	NW/180.9	1.26	<a href="#">165</a>
<a href="#">48</a>	GEN	LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	NW/180.9	1.26	<a href="#">166</a>
<a href="#">48</a>	GEN	LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	NW/180.9	1.26	<a href="#">166</a>
<a href="#">48</a>	GEN	LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	NW/180.9	1.26	<a href="#">167</a>
<a href="#">48</a>	GEN	LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	NW/180.9	1.26	<a href="#">167</a>
<a href="#">48</a>	PTTW	Lindsay Golf and Country Club (1965) Incorporated	282 Lindsay Street South Lindsay, ON Canada ON	NW/180.9	1.26	<a href="#">167</a>

<b>Map Key</b>	<b>DB</b>	<b>Company/Site Name</b>	<b>Address</b>	<b>Dir/Dist (m)</b>	<b>Elev Diff (m)</b>	<b>Page Number</b>
<a href="#">48</a>	GEN	LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	NW/180.9	1.26	<a href="#">168</a>
<a href="#">49</a>	GEN	LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	NW/181.4	1.26	<a href="#">168</a>
<a href="#">50</a>	WWIS		lot 15 con 6 ON <b>Well ID:</b> 6405829	ESE/184.6	6.73	<a href="#">169</a>
<a href="#">50</a>	WWIS		lot 16 con 7 ON <b>Well ID:</b> 6405845	ESE/184.6	6.73	<a href="#">172</a>
<a href="#">51</a>	ECA	Lindsay Cemetery Company	347 Lindsay St S Kawartha Lakes ON K9V 4R4	W/196.7	-4.00	<a href="#">175</a>
<a href="#">51</a>	ECA	The Lindsay Cemetery Corporation	347 Lindsay St S Lot 17 Concession 5 former Ops Township Kawartha Lakes ON K9V 4R4	W/196.7	-4.00	<a href="#">175</a>
<a href="#">51</a>	GEN	The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	W/196.7	-4.00	<a href="#">176</a>
<a href="#">51</a>	GEN	The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	W/196.7	-4.00	<a href="#">176</a>
<a href="#">52</a>	CA	Mike Redmond Septic Service Ltd.	36 Golden Mile Road, Lindsay Kawartha Lakes ON	ESE/201.8	6.73	<a href="#">176</a>
<a href="#">52</a>	CA	Mike Redmond Septic Service Ltd.	36 Golden Mile Road Kawartha Lakes ON	ESE/201.8	6.73	<a href="#">177</a>
<a href="#">52</a>	ECA	Mike Redmond Septic Service Ltd.	36 Golden Mile Road Kawartha Lakes ON L9V 4R2	ESE/201.8	6.73	<a href="#">177</a>
<a href="#">52</a>	ECA	Mike Redmond Septic Service Ltd.	36 Golden Mile Road, Lindsay Kawartha Lakes ON	ESE/201.8	6.73	<a href="#">177</a>
<a href="#">53</a>	ECA	2317438 Ontario Inc.	364 Lindsay St S Kawartha Lakes ON M4V 1P5	NW/203.5	2.41	<a href="#">178</a>

<b>Map Key</b>	<b>DB</b>	<b>Company/Site Name</b>	<b>Address</b>	<b>Dir/Dist (m)</b>	<b>Elev Diff (m)</b>	<b>Page Number</b>
<a href="#">53</a>	DTNK	2317438 ONTARIO INC	364 LINDSAY ST S LINDSAY ON CA ON	NW/203.5	2.41	<a href="#">178</a>
<a href="#">53</a>	DTNK	2317438 ONTARIO INC	364 LINDSAY ST S LINDSAY ON CA ON	NW/203.5	2.41	<a href="#">179</a>
<a href="#">53</a>	DTNK		364 LINDSAY ST S LINDSAY ON NULL	NW/203.5	2.41	<a href="#">179</a>
<a href="#">54</a>	WWIS		lot 15 con 6 ON <i>Well ID:</i> 6402592	ESE/204.8	6.85	<a href="#">180</a>
<a href="#">55</a>	WWIS		18 GOLDEN MILE RD lot 15 con 6 LINDSAY ON <i>Well ID:</i> 7159851	ESE/206.8	6.61	<a href="#">183</a>
<a href="#">56</a>	WWIS		lot 15 con 6 ON <i>Well ID:</i> 6404526	ESE/207.7	6.61	<a href="#">186</a>
<a href="#">57</a>	WWIS		lot 15 con 7 ON <i>Well ID:</i> 6405256	E/222.4	3.78	<a href="#">190</a>
<a href="#">58</a>	WWIS		lot 17 con 6 ON <i>Well ID:</i> 6402601	NW/233.0	2.39	<a href="#">193</a>
<a href="#">59</a>	WWIS		lot 15 con 6 ON <i>Well ID:</i> 6402594	ESE/241.8	6.74	<a href="#">197</a>
<a href="#">60</a>	WWIS		lot 15 con 6 ON <i>Well ID:</i> 6404077	ESE/246.4	8.00	<a href="#">200</a>

# Executive Summary: Summary By Data Source

## **CA - Certificates of Approval**

A search of the CA database, dated 1985-Oct 30, 2011\* has found that there are 7 CA site(s) within approximately 0.25 kilometers of the project property.

<b><u>Site</u></b>	<b><u>Address</u></b>	<b><u>Distance (m)</u></b>	<b><u>Map Key</u></b>
Lindsay Cemetery Company	347 Lindsay St S Kawartha Lakes ON	23.1	<a href="#"><u>27</u></a>
LINDSAY CEMETERY COMPANY	RR #4, RIVERSIDE CEMETERY LINDSAY TOWN ON	23.1	<a href="#"><u>27</u></a>
Moynes Ford Sales Ltd.	344 Lindsay Street South Kawartha Lakes ON	40.5	<a href="#"><u>30</u></a>
Lindsay Golf and Country Club (1965) Incorporated	282 Lindsay St S Kawartha Lakes ON	180.9	<a href="#"><u>48</u></a>
Lindsay Golf and Country Club (1965) Incorporated	282 Lindsay Street South Kawartha Lakes ON	180.9	<a href="#"><u>48</u></a>
Mike Redmond Septic Service Ltd.	36 Golden Mile Road, Lindsay Kawartha Lakes ON	201.8	<a href="#"><u>52</u></a>
Mike Redmond Septic Service Ltd.	36 Golden Mile Road Kawartha Lakes ON	201.8	<a href="#"><u>52</u></a>

## **DTNK - Delisted Fuel Tanks**

A search of the DTNK database, dated Feb 28, 2022 has found that there are 6 DTNK site(s) within approximately 0.25 kilometers of the project property.

<b><u>Site</u></b>	<b><u>Address</u></b>	<b><u>Distance (m)</u></b>	<b><u>Map Key</u></b>
MOYNES FORD SALES LTD	LOT 16 CON 6 OPS TWP ON	40.5	<a href="#"><u>30</u></a>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
MOYNES FORD SALES LTD	LOT 16 CON 6 OPS TWP ON L4G 1P4	40.5	<a href="#">30</a>
MOYNES FORD SALES LTD	LOT 16 CON 6 OPS TWP ON	40.5	<a href="#">30</a>
2317438 ONTARIO INC	364 LINDSAY ST S LINDSAY ON CA ON	203.5	<a href="#">53</a>
	364 LINDSAY ST S LINDSAY ON NULL	203.5	<a href="#">53</a>
2317438 ONTARIO INC	364 LINDSAY ST S LINDSAY ON CA ON	203.5	<a href="#">53</a>

### **EASR - Environmental Activity and Sector Registry**

A search of the EASR database, dated Oct 2011- Apr 30, 2023 has found that there are 2 EASR 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>
MOYNES FORD SALES LIMITED	344 LINDSAY STREET S. LINDSAY ON K9V 4R4	9.7	<a href="#">23</a>
MOYNES FORD SALES LIMITED	344 LINDSAY STREET S. LINDSAY ON K9V 4R4	40.5	<a href="#">30</a>

### **EBR - Environmental Registry**

A search of the EBR database, dated 1994 - Apr 30, 2023 has found that there are 2 EBR 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>
The Lindsay Cemetery Corporation	347 Lindsay Street South Kawartha Lakes K9V 4R4 CITY OF KAWARTHA LAKES ON	23.1	<a href="#">27</a>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
Moynes Ford Sales Ltd.	344 Lindsay Street South Kawartha Lakes Ontario K9V 4R4 CITY OF KAWARTHA LAKES ON	40.5	<a href="#">30</a>

### **ECA - Environmental Compliance Approval**

A search of the ECA database, dated Oct 2011- Apr 30, 2023 has found that there are 9 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>
The Lindsay Cemetery Corporation	347 Lindsay Street South Lot 17, Concession 5 Kawartha Lakes ON K9V4R4	23.1	<a href="#">27</a>
Moynes Ford Sales Ltd.	344 Lindsay Street South Kawartha Lakes ON K9V 4R4	40.5	<a href="#">30</a>
Lindsay Golf and Country Club (1965) Incorporated	282 Lindsay St S Kawartha Lakes ON K9V 4R8	180.9	<a href="#">48</a>
Lindsay Golf and Country Club (1965) Incorporated	282 Lindsay Street South Kawartha Lakes ON K9V 4R8	180.9	<a href="#">48</a>
Lindsay Cemetery Company	347 Lindsay St S Kawartha Lakes ON K9V 4R4	196.7	<a href="#">51</a>
The Lindsay Cemetery Corporation	347 Lindsay St S Lot 17 Concession 5 former Ops Township Kawartha Lakes ON K9V 4R4	196.7	<a href="#">51</a>
Mike Redmond Septic Service Ltd.	36 Golden Mile Road Kawartha Lakes ON L9V 4R2	201.8	<a href="#">52</a>
Mike Redmond Septic Service Ltd.	36 Golden Mile Road, Lindsay Kawartha Lakes ON	201.8	<a href="#">52</a>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
2317438 Ontario Inc.	364 Lindsay St S Kawartha Lakes ON M4V 1P5	203.5	<a href="#"><u>53</u></a>

### **EHS - ERIS Historical Searches**

A search of the EHS database, dated 1999-Mar 31, 2023 has found that there are 10 EHS 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>
	2387 Highway 7 Lindsay ON	0.0	<a href="#"><u>1</u></a>
	2387 Highway 7 Lindsay ON	0.0	<a href="#"><u>1</u></a>
	2387 Highway 7 Lindsay ON	0.0	<a href="#"><u>1</u></a>
	2387 Highway 7 Lindsay ON	0.0	<a href="#"><u>1</u></a>
	Highway 7 And Lindsay Street South Lindsay ON	0.0	<a href="#"><u>2</u></a>
	2387 Highway No. 7 City of Kawartha Lakes ON	0.0	<a href="#"><u>10</u></a>
	Lindsay St S Kawartha Lakes ON K9V4R4	0.0	<a href="#"><u>16</u></a>
	Pt Lot 16 Kawartha Lakes ON	34.7	<a href="#"><u>29</u></a>
	354 Lindsay Street South Lindsay ON K9V 4R4	83.9	<a href="#"><u>39</u></a>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	15 Willowdale Court Lindsay ON K9V 4S5	92.1	<a href="#">42</a>

### **GEN - Ontario Regulation 347 Waste Generators Summary**

A search of the GEN database, dated 1986-Oct 31, 2022 has found that there are 24 GEN 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>
The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	13.2	<a href="#">24</a>
Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	23.1	<a href="#">27</a>
Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	23.1	<a href="#">27</a>
The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	23.1	<a href="#">27</a>
The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	23.1	<a href="#">27</a>
The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	23.1	<a href="#">27</a>
The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	23.1	<a href="#">27</a>
The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON	23.1	<a href="#">27</a>

<b><u>Site</u></b>	<b><u>Address</u></b>	<b><u>Distance (m)</u></b>	<b><u>Map Key</u></b>
Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	23.1	<a href="#"><u>27</u></a>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	180.9	<a href="#"><u>48</u></a>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	180.9	<a href="#"><u>48</u></a>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	180.9	<a href="#"><u>48</u></a>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	180.9	<a href="#"><u>48</u></a>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	180.9	<a href="#"><u>48</u></a>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON	180.9	<a href="#"><u>48</u></a>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	180.9	<a href="#"><u>48</u></a>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	180.9	<a href="#"><u>48</u></a>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	180.9	<a href="#"><u>48</u></a>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	180.9	<a href="#"><u>48</u></a>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	180.9	<a href="#"><u>48</u></a>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	180.9	<a href="#"><u>48</u></a>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	180.9	<a href="#">48</a>
LINDSAY GOLF AND COUNTRY CLUB	282 Lindsay Street South Lindsay ON K9V 4R5	181.4	<a href="#">49</a>
The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	196.7	<a href="#">51</a>
The Lindsay Cemetery Corporation	347 Lindsay Street South Lindsay ON K9V 4R4	196.7	<a href="#">51</a>

### **HINC - TSSA Historic Incidents**

A search of the HINC database, dated 2006-June 2009\* has found that there are 1 HINC site(s) within approximately 0.25 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	323 LINDSAY STREET SOUTH LINDSAY ON	153.5	<a href="#">47</a>

### **PRT - Private and Retail Fuel Storage Tanks**

A search of the PRT database, dated 1989-1996\* has found that there are 1 PRT 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>
MOYNES FORD SALES LTD	LOT 16 CON 6 OPS TWP ON	40.5	<a href="#">30</a>

### **PTTW - Permit to Take Water**

A search of the PTTW database, dated 1994 - Apr 30, 2023 has found that there are 1 PTTW 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>
Lindsay Golf and Country Club (1965) Incorporated	282 Lindsay Street South Lindsay, ON Canada ON	180.9	<a href="#">48</a>

### **SPL - Ontario Spills**

A search of the SPL database, dated 1988-Oct 2021 has found that there are 1 SPL 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>
CANADIAN PACIFIC BULK SYSTEMS	LINDSAY BULK PLANT HWY 7 AND HWY 35 TANK TRUCK (CARGO) LINDSAY TOWN ON	66.3	<a href="#">34</a>

### **WWIS - Water Well Information System**

A search of the WWIS database, dated Jun 30 2022 has found that there are 47 WWIS site(s) within approximately 0.25 kilometers of the project property.

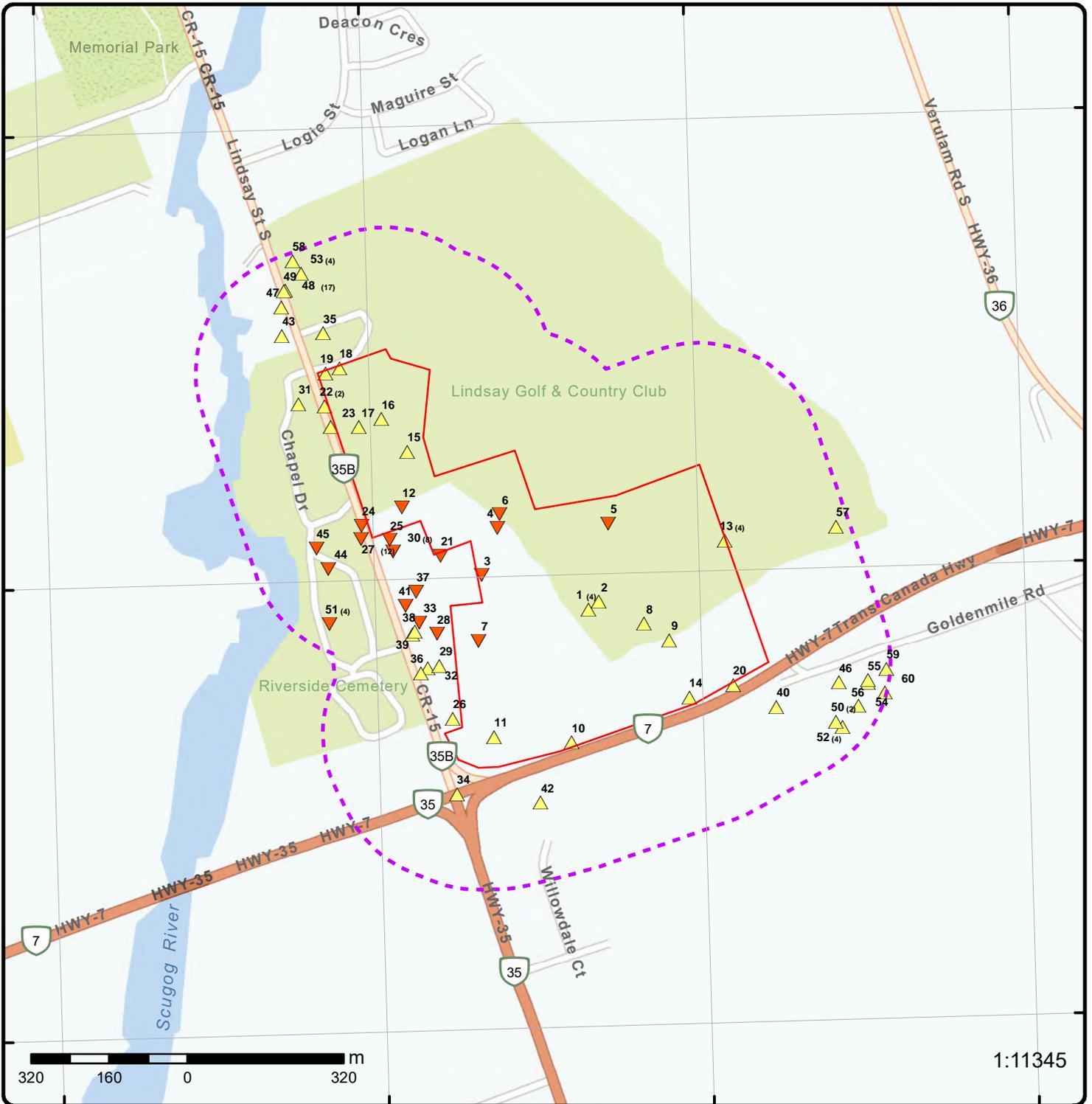
<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	lot 16 con 6 ON  <i>Well ID: 6404785</i>	0.0	<a href="#">3</a>
	2376 TRANS CANADA HIGHWAY LINDSAY ON  <i>Well ID: 7270543</i>	0.0	<a href="#">4</a>
	2376 TRANS CANADA HWY LINDSAY ON  <i>Well ID: 7270544</i>	0.0	<a href="#">5</a>
	2376 TRANS CANADA HWY LINDSAY ON  <i>Well ID: 7270545</i>	0.0	<a href="#">6</a>
	2376 TRANS CANADA HIGHWAY LINDSAY ON  <i>Well ID: 7270542</i>	0.0	<a href="#">7</a>
	2376 TRANS CANADA HIGHWAY LINDSAY ON  <i>Well ID: 7270541</i>	0.0	<a href="#">8</a>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	lot 16 con 6 ON  <i>Well ID: 6402599</i>	0.0	<a href="#"><u>9</u></a>
	2376 TRANSCANADA HWY LINDSAY ON  <i>Well ID: 7270539</i>	0.0	<a href="#"><u>11</u></a>
	lot 17 con 6 ON  <i>Well ID: 6402602</i>	0.0	<a href="#"><u>12</u></a>
	lot 16 con 6 ON  <i>Well ID: 6411990</i>	0.0	<a href="#"><u>13</u></a>
	lot 16 con 6 ON  <i>Well ID: 6412640</i>	0.0	<a href="#"><u>13</u></a>
	lot 16 con 6 ON  <i>Well ID: 6415029</i>	0.0	<a href="#"><u>13</u></a>
	lot 16 con 6 ON  <i>Well ID: 6415093</i>	0.0	<a href="#"><u>13</u></a>
	lot 16 con 6 ON  <i>Well ID: 6404200</i>	0.0	<a href="#"><u>14</u></a>
	2376 TRANS CANADA HWY LINDSAY ON  <i>Well ID: 7270546</i>	0.0	<a href="#"><u>15</u></a>
	lot 17 con 6 ON  <i>Well ID: 6402603</i>	0.0	<a href="#"><u>17</u></a>
	LINDSAY STREET SOUTH LINDSAY ON  <i>Well ID: 7295790</i>	0.0	<a href="#"><u>18</u></a>
	LINDSAY STRET SOUTH LINDSAY ON	0.0	<a href="#"><u>19</u></a>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	<i>Well ID:</i> 7295789		
	2376 TRANSCANADA HWY LINDSAY ON	4.4	<a href="#"><u>20</u></a>
	<i>Well ID:</i> 7270540		
	354 LINDSAY ST. SOUTH lot 16 con 6 LINDSAY ON	6.6	<a href="#"><u>21</u></a>
	<i>Well ID:</i> 7238851		
	354 LONDSAY STREET SOUTH LINDSAY ON	8.7	<a href="#"><u>22</u></a>
	<i>Well ID:</i> 7270525		
	357 LINDSAY STREET SOUTH LINDSAY ON	8.7	<a href="#"><u>22</u></a>
	<i>Well ID:</i> 7270526		
	lot 16 con 6 ON	15.8	<a href="#"><u>25</u></a>
	<i>Well ID:</i> 6402597		
	lot 16 con 6 ON	17.4	<a href="#"><u>26</u></a>
	<i>Well ID:</i> 7349956		
	LINDSAY ST lot 16 con 6 LINDSAY ON	32.6	<a href="#"><u>28</u></a>
	<i>Well ID:</i> 7162140		
	lot 17 con 5 ON	57.7	<a href="#"><u>31</u></a>
	<i>Well ID:</i> 6406530		
	lot 16 con 6 ON	58.4	<a href="#"><u>32</u></a>
	<i>Well ID:</i> 6402598		
	lot 16 con 6 ON	66.3	<a href="#"><u>33</u></a>
	<i>Well ID:</i> 6402600		
	282 LINDSAY ST. lot 17 con 6 LINDSAY ON	72.6	<a href="#"><u>35</u></a>
	<i>Well ID:</i> 6417663		

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	lot 16 con 6 ON  <i>Well ID:</i> 6408831	74.2	<a href="#"><u>36</u></a>
	ON  <i>Well ID:</i> 6401747	75.9	<a href="#"><u>37</u></a>
	354 LINDSAY ST. SOUTH lot 16 con 6 LINDSAY ON  <i>Well ID:</i> 7238850	78.0	<a href="#"><u>38</u></a>
	lot 15 con 6 ON  <i>Well ID:</i> 6402590	87.4	<a href="#"><u>40</u></a>
	356 LINDSAY ST. S lot 16 con 6 LINDSAY ON  <i>Well ID:</i> 7238852	91.3	<a href="#"><u>41</u></a>
	1279 LINDSAY ST SOUTH ON  <i>Well ID:</i> 7181573	106.3	<a href="#"><u>43</u></a>
	lot 16 con 5 ON  <i>Well ID:</i> 6402526	111.0	<a href="#"><u>44</u></a>
	lot 16 con 5 ON  <i>Well ID:</i> 6402531	115.7	<a href="#"><u>45</u></a>
	lot 15 con 6 ON  <i>Well ID:</i> 6416505	150.2	<a href="#"><u>46</u></a>
	lot 15 con 6 ON  <i>Well ID:</i> 6405829	184.6	<a href="#"><u>50</u></a>
	lot 16 con 7 ON  <i>Well ID:</i> 6405845	184.6	<a href="#"><u>50</u></a>
	lot 15 con 6 ON	204.8	<a href="#"><u>54</u></a>

<u>Site</u>	<u>Address</u>	<u>Distance (m)</u>	<u>Map Key</u>
	<i>Well ID:</i> 6402592		
	18 GOLDEN MILE RD lot 15 con 6 LINDSAY ON	206.8	<a href="#">55</a>
	<i>Well ID:</i> 7159851		
	lot 15 con 6 ON	207.7	<a href="#">56</a>
	<i>Well ID:</i> 6404526		
	lot 15 con 7 ON	222.4	<a href="#">57</a>
	<i>Well ID:</i> 6405256		
	lot 17 con 6 ON	233.0	<a href="#">58</a>
	<i>Well ID:</i> 6402601		
	lot 15 con 6 ON	241.8	<a href="#">59</a>
	<i>Well ID:</i> 6402594		
	lot 15 con 6 ON	246.4	<a href="#">60</a>
	<i>Well ID:</i> 6404077		



### Map: 0.25 Kilometer Radius

Order Number: 23060900290

Address: Hwy 7 and Lindsay St S, Kawartha Lakes, ON



Project Property	Freeways; Highways	Beach	Shopping & Sports Area
Buffer Outline	Traffic Circle; Ramp	Airport	University/College
Eris Sites with Higher Elevation	Major Arterial; Minor Arterial	Industrial Area	Cemetery; Golf Course
Eris Sites with Same Elevation	Local Road	Military Base	Park (National)
Eris Sites with Lower Elevation	Service Road; Traffic Circle; Ramp	Aircraft Roads	Park (City/County)
Eris Sites with Unknown Elevation	Rail	Native Reservation	
		Hospital	

78°43'30"W

44°19'30"N

44°19'30"N



**Aerial** Year: 2012

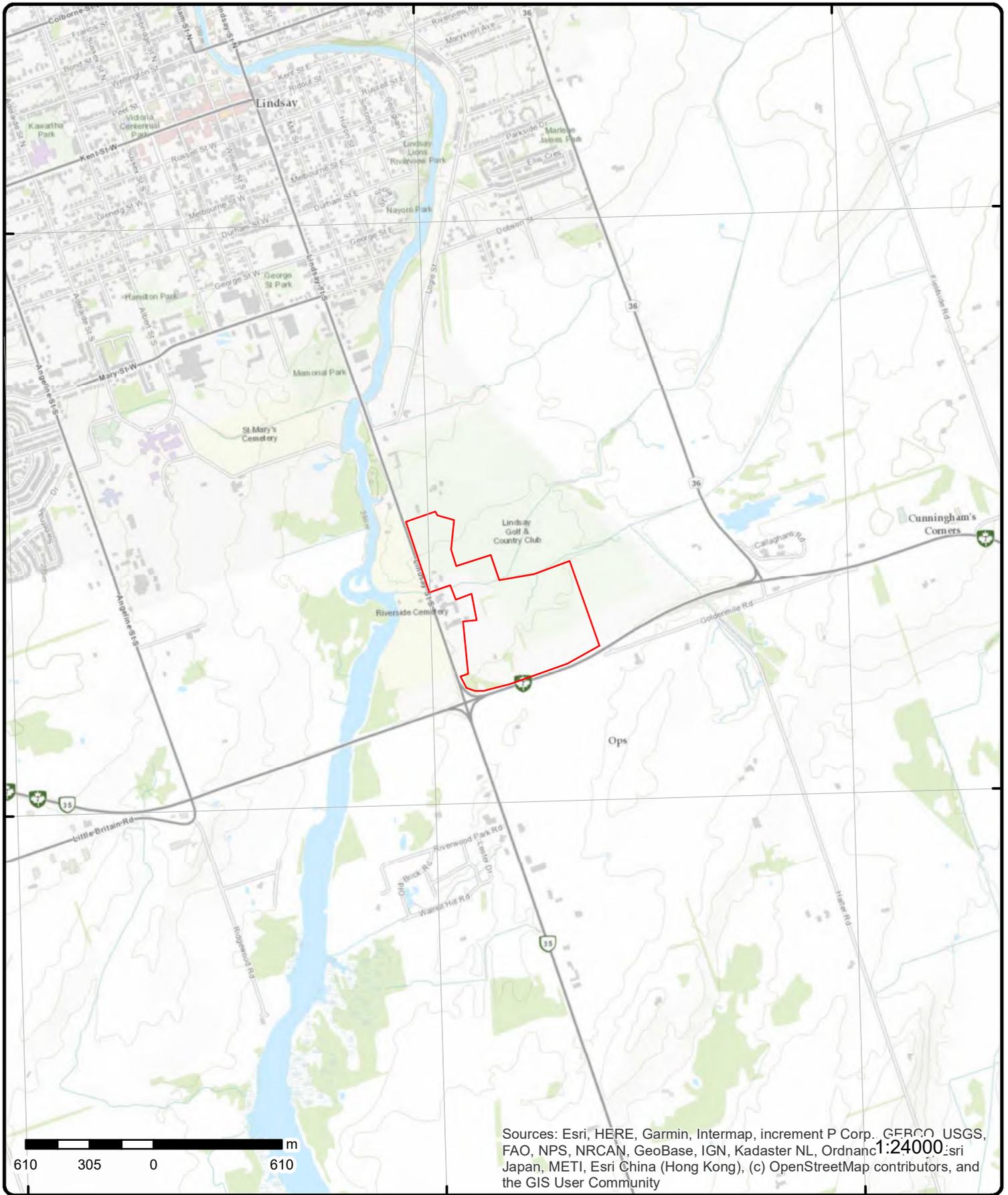
Order Number: 23060900290

**Address: Hwy 7 and Lindsay St S, Kawartha Lakes, ON**



Source: ESRI World Imagery

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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), (c) OpenStreetMap contributors, and the GIS User Community

# Topographic Map

Order Number: 23060900290

Address: Hwy 7 and Lindsay St S, ON



Source: ESRI World Topographic Map

© ERIS Information Limited Partnership

# Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<u>1</u>	1 of 4	ESE/0.0	254.1 / 1.00	2387 Highway 7 Lindsay ON	EHS
<b>Order No:</b> 20200804031 <b>Status:</b> C <b>Report Type:</b> Custom Report <b>Report Date:</b> 10-AUG-20 <b>Date Received:</b> 04-AUG-20 <b>Previous Site Name:</b> <b>Lot/Building Size:</b> <b>Additional Info Ordered:</b> Fire Insur. Maps and/or Site Plans; Aerial Photos		<b>Nearest Intersection:</b> <b>Municipality:</b> <b>Client Prov/State:</b> ON <b>Search Radius (km):</b> .25 <b>X:</b> -78.71956591 <b>Y:</b> 44.3326874			
<u>1</u>	2 of 4	ESE/0.0	254.1 / 1.00	2387 Highway 7 Lindsay ON	EHS
<b>Order No:</b> 20200804031 <b>Status:</b> C <b>Report Type:</b> Custom Report <b>Report Date:</b> 10-AUG-20 <b>Date Received:</b> 04-AUG-20 <b>Previous Site Name:</b> <b>Lot/Building Size:</b> <b>Additional Info Ordered:</b> Fire Insur. Maps and/or Site Plans; Aerial Photos		<b>Nearest Intersection:</b> <b>Municipality:</b> <b>Client Prov/State:</b> ON <b>Search Radius (km):</b> .25 <b>X:</b> -78.71956591 <b>Y:</b> 44.3326874			
<u>1</u>	3 of 4	ESE/0.0	254.1 / 1.00	2387 Highway 7 Lindsay ON	EHS
<b>Order No:</b> 20200804031 <b>Status:</b> C <b>Report Type:</b> Custom Report <b>Report Date:</b> 10-AUG-20 <b>Date Received:</b> 04-AUG-20 <b>Previous Site Name:</b> <b>Lot/Building Size:</b> <b>Additional Info Ordered:</b> Fire Insur. Maps and/or Site Plans; Aerial Photos		<b>Nearest Intersection:</b> <b>Municipality:</b> <b>Client Prov/State:</b> ON <b>Search Radius (km):</b> .25 <b>X:</b> -78.71956591 <b>Y:</b> 44.3326874			
<u>1</u>	4 of 4	ESE/0.0	254.1 / 1.00	2387 Highway 7 Lindsay ON	EHS
<b>Order No:</b> 20200804031 <b>Status:</b> C <b>Report Type:</b> Custom Report <b>Report Date:</b> 10-AUG-20 <b>Date Received:</b> 04-AUG-20 <b>Previous Site Name:</b> <b>Lot/Building Size:</b> <b>Additional Info Ordered:</b> Fire Insur. Maps and/or Site Plans; Aerial Photos		<b>Nearest Intersection:</b> <b>Municipality:</b> <b>Client Prov/State:</b> ON <b>Search Radius (km):</b> .25 <b>X:</b> -78.71956591 <b>Y:</b> 44.3326874			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<a href="#">2</a>	1 of 1	ESE/0.0	254.3/ 1.12	Highway 7 And Lindsay Street South Lindsay ON	EHS
<b>Order No:</b>		20140108014		<b>Nearest Intersection:</b>	
<b>Status:</b>		C		<b>Municipality:</b>	
<b>Report Type:</b>		Custom Report		<b>Client Prov/State:</b> ON	
<b>Report Date:</b>		16-JAN-14		<b>Search Radius (km):</b> .25	
<b>Date Received:</b>		08-JAN-14		<b>X:</b> -78.719295	
<b>Previous Site Name:</b>				<b>Y:</b> 44.332819	
<b>Lot/Building Size:</b>					
<b>Additional Info Ordered:</b>		Fire Insur. Maps and/or Site Plans			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<a href="#">3</a>	1 of 1	W/0.0	251.8/ -1.31	lot 16 con 6 ON	WWIS
<b>Well ID:</b>		6404785		<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>		Commerical		<b>Data Entry Status:</b>	
<b>Use 2nd:</b>		0		<b>Data Src:</b> 1	
<b>Final Well Status:</b>		Water Supply		<b>Date Received:</b> 05-Jun-1972 00:00:00	
<b>Water Type:</b>				<b>Selected Flag:</b> TRUE	
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>				<b>Contractor:</b> 2518	
<b>Tag:</b>				<b>Form Version:</b> 1	
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b> VICTORIA	
<b>Elevatn Reliabilty:</b>				<b>Lot:</b> 016	
<b>Depth to Bedrock:</b>				<b>Concession:</b> 06	
<b>Well Depth:</b>				<b>Concession Name:</b> CON	
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>		OPS TOWNSHIP			
<b>Site Info:</b>					

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/640\6404785.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6404785.pdf)

**Additional Detail(s) (Map)**

**Well Completed Date:** 1972/03/15  
**Year Completed:** 1972  
**Depth (m):** 6.7056  
**Latitude:** 44.3333639923879  
**Longitude:** -78.7222771688019  
**Path:** 640\6404785.pdf

**Bore Hole Information**

<b>Bore Hole ID:</b>	10439804	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681590.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911423.00
<b>Open Hole:</b>		<b>Org CS:</b>	
<b>Cluster Kind:</b>		<b>UTMRC:</b>	4
<b>Date Completed:</b>	15-Mar-1972 00:00:00	<b>UTMRC Desc:</b>	margin of error : 30 m - 100 m
<b>Remarks:</b>		<b>Location Method:</b>	p4
<b>Loc Method Desc:</b>	Original Pre1985 UTM Rel Code 4: margin of error : 30 m - 100 m		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Improvement Location Method:  
Source Revision Comment:  
Supplier Comment:

Overburden and Bedrock  
Materials Interval

Formation ID: 932501039  
Layer: 2  
Color: 6  
General Color: BROWN  
Mat1: 05  
Most Common Material: CLAY  
Mat2: 12  
Mat2 Desc: STONES  
Mat3:  
Mat3 Desc:  
Formation Top Depth: 2.0  
Formation End Depth: 20.0  
Formation End Depth UOM: ft

Overburden and Bedrock  
Materials Interval

Formation ID: 932501038  
Layer: 1  
Color: 8  
General Color: BLACK  
Mat1: 02  
Most Common Material: TOPSOIL  
Mat2:  
Mat2 Desc:  
Mat3:  
Mat3 Desc:  
Formation Top Depth: 0.0  
Formation End Depth: 2.0  
Formation End Depth UOM: ft

Overburden and Bedrock  
Materials Interval

Formation ID: 932501040  
Layer: 3  
Color: 6  
General Color: BROWN  
Mat1: 11  
Most Common Material: GRAVEL  
Mat2:  
Mat2 Desc:  
Mat3:  
Mat3 Desc:  
Formation Top Depth: 20.0  
Formation End Depth: 21.0  
Formation End Depth UOM: ft

Overburden and Bedrock  
Materials Interval

Formation ID: 932501041  
Layer: 4  
Color: 6  
General Color: BROWN

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		21.0			
<b>Formation End Depth:</b>		22.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966404785			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10988374			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930718476			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		22.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		BAILER			
<b>Pump Test ID:</b>		996404785			
<b>Pump Set At:</b>					
<b>Static Level:</b>		6.0			
<b>Final Level After Pumping:</b>		20.0			
<b>Recommended Pump Depth:</b>		20.0			
<b>Pumping Rate:</b>		9.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		9.0			
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		2			
<b>Pumping Duration HR:</b>		4			
<b>Pumping Duration MIN:</b>		20			
<b>Flowing:</b>		No			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934597515			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		30			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Test Level:</b>		6.0			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		935115828			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		60			
<b>Test Level:</b>		6.0			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934328911			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		15			
<b>Test Level:</b>		6.0			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934854307			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		45			
<b>Test Level:</b>		6.0			
<b>Test Level UOM:</b>		ft			
<b><u>Water Details</u></b>					
<b>Water ID:</b>		933926667			
<b>Layer:</b>		1			
<b>Kind Code:</b>		1			
<b>Kind:</b>		FRESH			
<b>Water Found Depth:</b>		22.0			
<b>Water Found Depth UOM:</b>		ft			
<b><u>Links</u></b>					
<b>Bore Hole ID:</b>	10439804			<b>Tag No:</b>	
<b>Depth M:</b>	6.7056			<b>Contractor:</b>	2518
<b>Year Completed:</b>	1972			<b>Path:</b>	640\6404785.pdf
<b>Well Completed Dt:</b>	1972/03/15			<b>Latitude:</b>	44.3333639923879
<b>Audit No:</b>				<b>Longitude:</b>	-78.7222771688019

<a href="#">4</a>	1 of 1	NW/0.0	251.8 / -1.31	2376 TRANS CANADA HIGHWAY LINDSAY ON	WWIS
<b>Well ID:</b>	7270543			<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>	Monitoring			<b>Data Entry Status:</b>	
<b>Use 2nd:</b>				<b>Data Src:</b>	
<b>Final Well Status:</b>	Observation Wells			<b>Date Received:</b>	05-Sep-2016 00:00:00
<b>Water Type:</b>				<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>	Z239729			<b>Contractor:</b>	7472
<b>Tag:</b>	A210487			<b>Form Version:</b>	7
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>				<b>Lot:</b>	
<b>Depth to Bedrock:</b>				<b>Concession:</b>	
<b>Well Depth:</b>				<b>Concession Name:</b>	

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Overburden/Bedrock:</b> <b>Pump Rate:</b> <b>Static Water Level:</b> <b>Clear/Cloudy:</b> <b>Municipality:</b> <b>Site Info:</b>  <b>PDF URL (Map):</b>  <b>Additional Detail(s) (Map)</b>		OPS TOWNSHIP		<b>Easting NAD83:</b> <b>Northing NAD83:</b> <b>Zone:</b> <b>UTM Reliability:</b>	
<b>Well Completed Date:</b> <b>Year Completed:</b> <b>Depth (m):</b> <b>Latitude:</b> <b>Longitude:</b> <b>Path:</b>		2016/06/17 2016	44.3342285879257 -78.7218423017614		
<b><u>Bore Hole Information</u></b>					
<b>Bore Hole ID:</b> <b>DP2BR:</b> <b>Spatial Status:</b> <b>Code OB:</b> <b>Code OB Desc:</b> <b>Open Hole:</b> <b>Cluster Kind:</b> <b>Date Completed:</b> <b>Remarks:</b> <b>Loc Method Desc:</b> <b>Elevrc Desc:</b> <b>Location Source Date:</b> <b>Improvement Location Source:</b> <b>Improvement Location Method:</b> <b>Source Revision Comment:</b> <b>Supplier Comment:</b>	1006230879			<b>Elevation:</b> <b>Elevrc:</b> <b>Zone:</b> <b>East83:</b> <b>North83:</b> <b>Org CS:</b> <b>UTMRC:</b> <b>UTMRC Desc:</b> <b>Location Method:</b>	17 681622.00 4911520.00 UTM83 4 margin of error : 30 m - 100 m wwr
<b>On Water Well Record</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b> <b>Layer:</b> <b>Color:</b> <b>General Color:</b> <b>Mat1:</b> <b>Most Common Material:</b> <b>Mat2:</b> <b>Mat2 Desc:</b> <b>Mat3:</b> <b>Mat3 Desc:</b> <b>Formation Top Depth:</b> <b>Formation End Depth:</b> <b>Formation End Depth UOM:</b>	1006269164				
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b> <b>Layer:</b> <b>Plug From:</b> <b>Plug To:</b> <b>Plug Depth UOM:</b>	1006269171				
		1			
		0.0			
		9.0			
		ft			

<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>
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1006269172			
<b>Layer:</b>		2			
<b>Plug From:</b>		9.0			
<b>Plug To:</b>		20.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		1006269170			
<b>Method Construction Code:</b>		6			
<b>Method Construction:</b>		Boring			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		1006269163			
<b>Casing No:</b>		0			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		1006269167			
<b>Layer:</b>		1			
<b>Material:</b>		5			
<b>Open Hole or Material:</b>		PLASTIC			
<b>Depth From:</b>		0.0			
<b>Depth To:</b>		10.0			
<b>Casing Diameter:</b>		2.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Screen</u></b>					
<b>Screen ID:</b>		1006269168			
<b>Layer:</b>		1			
<b>Slot:</b>		10			
<b>Screen Top Depth:</b>		10.0			
<b>Screen End Depth:</b>		20.0			
<b>Screen Material:</b>		5			
<b>Screen Depth UOM:</b>		ft			
<b>Screen Diameter UOM:</b>		inch			
<b>Screen Diameter:</b>		2.5			
<b><u>Water Details</u></b>					
<b>Water ID:</b>		1006269166			
<b>Layer:</b>					
<b>Kind Code:</b>					
<b>Kind:</b>					
<b>Water Found Depth:</b>					
<b>Water Found Depth UOM:</b>		ft			
<b><u>Hole Diameter</u></b>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Hole ID:</b>		1006269165			
<b>Diameter:</b>		6.0			
<b>Depth From:</b>		0.0			
<b>Depth To:</b>		20.0			
<b>Hole Depth UOM:</b>		ft			
<b>Hole Diameter UOM:</b>		inch			
 <b>Links</b>					
<b>Bore Hole ID:</b>	1006230879			<b>Tag No:</b>	A210487
<b>Depth M:</b>				<b>Contractor:</b>	7472
<b>Year Completed:</b>	2016			<b>Path:</b>	727\7270543.pdf
<b>Well Completed Dt:</b>	2016/06/17			<b>Latitude:</b>	44.3342285879257
<b>Audit No:</b>	Z239729			<b>Longitude:</b>	-78.7218423017614

<a href="#">5</a>	1 of 1	NE/0.0	252.8 / -0.31	2376 TRANS CANADA HWY LINDSAY ON	WWIS
<b>Well ID:</b>	7270544			<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>	Monitoring			<b>Data Entry Status:</b>	
<b>Use 2nd:</b>				<b>Data Src:</b>	
<b>Final Well Status:</b>	Observation Wells			<b>Date Received:</b>	05-Sep-2016 00:00:00
<b>Water Type:</b>				<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>	Z239730			<b>Contractor:</b>	7472
<b>Tag:</b>	A210488			<b>Form Version:</b>	7
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>				<b>Lot:</b>	
<b>Depth to Bedrock:</b>				<b>Concession:</b>	
<b>Well Depth:</b>				<b>Concession Name:</b>	
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP				
<b>Site Info:</b>					

PDF URL (Map):

**Additional Detail(s) (Map)**

<b>Well Completed Date:</b>	2016/06/17
<b>Year Completed:</b>	2016
<b>Depth (m):</b>	
<b>Latitude:</b>	44.3342437465789
<b>Longitude:</b>	-78.7189943985476
<b>Path:</b>	

**Bore Hole Information**

<b>Bore Hole ID:</b>	1006230882	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681849.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911528.00
<b>Open Hole:</b>		<b>Org CS:</b>	UTM83
<b>Cluster Kind:</b>		<b>UTMRC:</b>	4
<b>Date Completed:</b>	17-Jun-2016 00:00:00	<b>UTMRC Desc:</b>	margin of error : 30 m - 100 m
<b>Remarks:</b>		<b>Location Method:</b>	wwr
<b>Loc Method Desc:</b>	on Water Well Record		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		1006269174			
<b>Layer:</b>					
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>					
<b>Most Common Material:</b>					
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>					
<b>Formation End Depth:</b>					
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		1006269182			
<b>Layer:</b>		2			
<b>Plug From:</b>		9.0			
<b>Plug To:</b>		20.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		1006269181			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		9.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well</u></b>					
<b><u>Use</u></b>					
<b>Method Construction ID:</b>		1006269180			
<b>Method Construction Code:</b>		6			
<b>Method Construction:</b>		Boring			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		1006269173			
<b>Casing No:</b>		0			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		1006269177			
<b>Layer:</b>		1			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Material:</b>		5			
<b>Open Hole or Material:</b>		PLASTIC			
<b>Depth From:</b>		0.0			
<b>Depth To:</b>		10.0			
<b>Casing Diameter:</b>		2.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Screen</u></b>					
<b>Screen ID:</b>		1006269178			
<b>Layer:</b>		1			
<b>Slot:</b>		10			
<b>Screen Top Depth:</b>		10.0			
<b>Screen End Depth:</b>		20.0			
<b>Screen Material:</b>		5			
<b>Screen Depth UOM:</b>		ft			
<b>Screen Diameter UOM:</b>		inch			
<b>Screen Diameter:</b>		2.5			
<b><u>Water Details</u></b>					
<b>Water ID:</b>		1006269176			
<b>Layer:</b>					
<b>Kind Code:</b>					
<b>Kind:</b>					
<b>Water Found Depth:</b>					
<b>Water Found Depth UOM:</b>		ft			
<b><u>Hole Diameter</u></b>					
<b>Hole ID:</b>		1006269175			
<b>Diameter:</b>		6.0			
<b>Depth From:</b>		0.0			
<b>Depth To:</b>		20.0			
<b>Hole Depth UOM:</b>		ft			
<b>Hole Diameter UOM:</b>		inch			
<b><u>Links</u></b>					
<b>Bore Hole ID:</b>		1006230882		<b>Tag No:</b>	A210488
<b>Depth M:</b>				<b>Contractor:</b>	7472
<b>Year Completed:</b>		2016		<b>Path:</b>	727\7270544.pdf
<b>Well Completed Dt:</b>		2016/06/17		<b>Latitude:</b>	44.3342437465789
<b>Audit No:</b>		Z239730		<b>Longitude:</b>	-78.7189943985476

<u>6</u>	1 of 1	NW/0.0	252.7 / -0.46	2376 TRANS CANADA HWY LINDSAY ON	WWIS
<b>Well ID:</b>		7270545		<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>		Monitoring		<b>Data Entry Status:</b>	
<b>Use 2nd:</b>				<b>Data Src:</b>	
<b>Final Well Status:</b>		Observation Wells		<b>Date Received:</b>	05-Sep-2016 00:00:00
<b>Water Type:</b>				<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>		Z239732		<b>Contractor:</b>	7472
<b>Tag:</b>		A210489		<b>Form Version:</b>	7
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>				<b>Lot:</b>	

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Depth to Bedrock:</b> <b>Well Depth:</b> <b>Overburden/Bedrock:</b> <b>Pump Rate:</b> <b>Static Water Level:</b> <b>Clear/Cloudy:</b> <b>Municipality:</b> <b>Site Info:</b>		OPS TOWNSHIP		<b>Concession:</b> <b>Concession Name:</b> <b>Easting NAD83:</b> <b>Northing NAD83:</b> <b>Zone:</b> <b>UTM Reliability:</b>	
<b>PDF URL (Map):</b>					
<b><u>Additional Detail(s) (Map)</u></b>					
<b>Well Completed Date:</b>		2016/06/17			
<b>Year Completed:</b>		2016			
<b>Depth (m):</b>					
<b>Latitude:</b>		44.3344792212662			
<b>Longitude:</b>		-78.721769876972			
<b>Path:</b>					
<b><u>Bore Hole Information</u></b>					
<b>Bore Hole ID:</b>		1006230885		<b>Elevation:</b>	
<b>DP2BR:</b>				<b>Elevrc:</b>	
<b>Spatial Status:</b>				<b>Zone:</b> 17	
<b>Code OB:</b>				<b>East83:</b> 681627.00	
<b>Code OB Desc:</b>				<b>North83:</b> 4911548.00	
<b>Open Hole:</b>				<b>Org CS:</b> UTM83	
<b>Cluster Kind:</b>				<b>UTMRC:</b> 4	
<b>Date Completed:</b>		17-Jun-2016 00:00:00		<b>UTMRC Desc:</b> margin of error : 30 m - 100 m	
<b>Remarks:</b>				<b>Location Method:</b> wwr	
<b>Loc Method Desc:</b>		on Water Well Record			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		1006269184			
<b>Layer:</b>					
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>					
<b>Most Common Material:</b>					
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>					
<b>Formation End Depth:</b>					
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		1006269191			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			

<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>
<i>Plug To:</i>		9.0			
<i>Plug Depth UOM:</i>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<i>Plug ID:</i>		1006269192			
<i>Layer:</i>		2			
<i>Plug From:</i>		9.0			
<i>Plug To:</i>		20.0			
<i>Plug Depth UOM:</i>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<i>Method Construction ID:</i>		1006269190			
<i>Method Construction Code:</i>		6			
<i>Method Construction:</i>		Boring			
<i>Other Method Construction:</i>					
<b><u>Pipe Information</u></b>					
<i>Pipe ID:</i>		1006269183			
<i>Casing No:</i>		0			
<i>Comment:</i>					
<i>Alt Name:</i>					
<b><u>Construction Record - Casing</u></b>					
<i>Casing ID:</i>		1006269187			
<i>Layer:</i>		1			
<i>Material:</i>		5			
<i>Open Hole or Material:</i>		PLASTIC			
<i>Depth From:</i>		0.0			
<i>Depth To:</i>		10.0			
<i>Casing Diameter:</i>		2.0			
<i>Casing Diameter UOM:</i>		inch			
<i>Casing Depth UOM:</i>		ft			
<b><u>Construction Record - Screen</u></b>					
<i>Screen ID:</i>		1006269188			
<i>Layer:</i>		1			
<i>Slot:</i>		10			
<i>Screen Top Depth:</i>		10.0			
<i>Screen End Depth:</i>		20.0			
<i>Screen Material:</i>		5			
<i>Screen Depth UOM:</i>		ft			
<i>Screen Diameter UOM:</i>		inch			
<i>Screen Diameter:</i>		2.5			
<b><u>Water Details</u></b>					
<i>Water ID:</i>		1006269186			
<i>Layer:</i>					
<i>Kind Code:</i>					
<i>Kind:</i>					
<i>Water Found Depth:</i>					
<i>Water Found Depth UOM:</i>		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b><u>Hole Diameter</u></b>					
Hole ID:		1006269185			
Diameter:		6.0			
Depth From:		0.0			
Depth To:		20.0			
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			
<b><u>Links</u></b>					
Bore Hole ID:	1006230885			Tag No:	A210489
Depth M:				Contractor:	7472
Year Completed:	2016			Path:	727\7270545.pdf
Well Completed Dt:	2016/06/17			Latitude:	44.3344792212662
Audit No:	Z239732			Longitude:	-78.721769876972

<a href="#">7</a>	1 of 1	WSW/0.0	252.8 / -0.31	2376 TRANS CANADA HIGHWAY LINDSAY ON	WWIS
Well ID:	7270542			Flowing (Y/N):	
Construction Date:				Flow Rate:	
Use 1st:	Monitoring			Data Entry Status:	
Use 2nd:				Data Src:	
Final Well Status:	Observation Wells			Date Received:	05-Sep-2016 00:00:00
Water Type:				Selected Flag:	TRUE
Casing Material:				Abandonment Rec:	
Audit No:	Z239751			Contractor:	7472
Tag:	A210486			Form Version:	7
Constructn Method:				Owner:	
Elevation (m):				County:	VICTORIA
Elevatn Reliabilty:				Lot:	
Depth to Bedrock:				Concession:	
Well Depth:				Concession Name:	
Overburden/Bedrock:				Easting NAD83:	
Pump Rate:				Northing NAD83:	
Static Water Level:				Zone:	
Clear/Cloudy:				UTM Reliability:	
Municipality:	OPS TOWNSHIP				
Site Info:					

PDF URL (Map):

**Additional Detail(s) (Map)**

Well Completed Date:	2016/06/17
Year Completed:	2016
Depth (m):	
Latitude:	44.332151051784
Longitude:	-78.722399396845
Path:	

**Bore Hole Information**

Bore Hole ID:	1006230862	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	681584.00
Code OB Desc:		North83:	4911288.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	17-Jun-2016 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Remarks:</b>				<b>Location Method:</b>	WWF
<b>Loc Method Desc:</b>		on Water Well Record			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		1006269154			
<b>Layer:</b>					
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>					
<b>Most Common Material:</b>					
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>					
<b>Formation End Depth:</b>					
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		1006269162			
<b>Layer:</b>		2			
<b>Plug From:</b>		14.0			
<b>Plug To:</b>		25.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		1006269161			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		14.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well</u></b>					
<b><u>Use</u></b>					
<b>Method Construction ID:</b>		1006269160			
<b>Method Construction Code:</b>		6			
<b>Method Construction:</b>		Boring			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		1006269153			
<b>Casing No:</b>		0			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Casing ID:</b> 1006269157					
<b>Layer:</b> 1					
<b>Material:</b> 5					
<b>Open Hole or Material:</b> PLASTIC					
<b>Depth From:</b> 0.0					
<b>Depth To:</b> 15.0					
<b>Casing Diameter:</b> 2.0					
<b>Casing Diameter UOM:</b> inch					
<b>Casing Depth UOM:</b> ft					
<b><u>Construction Record - Screen</u></b>					
<b>Screen ID:</b> 1006269158					
<b>Layer:</b> 1					
<b>Slot:</b> 10					
<b>Screen Top Depth:</b> 15.0					
<b>Screen End Depth:</b> 25.0					
<b>Screen Material:</b> 5					
<b>Screen Depth UOM:</b> ft					
<b>Screen Diameter UOM:</b> inch					
<b>Screen Diameter:</b> 2.5					
<b><u>Water Details</u></b>					
<b>Water ID:</b> 1006269156					
<b>Layer:</b>					
<b>Kind Code:</b>					
<b>Kind:</b>					
<b>Water Found Depth:</b>					
<b>Water Found Depth UOM:</b> ft					
<b><u>Hole Diameter</u></b>					
<b>Hole ID:</b> 1006269155					
<b>Diameter:</b> 6.0					
<b>Depth From:</b> 0.0					
<b>Depth To:</b> 25.0					
<b>Hole Depth UOM:</b> ft					
<b>Hole Diameter UOM:</b> inch					
<b><u>Links</u></b>					
<b>Bore Hole ID:</b> 1006230862		<b>Tag No:</b> A210486			
<b>Depth M:</b>		<b>Contractor:</b> 7472			
<b>Year Completed:</b> 2016		<b>Path:</b> 727\7270542.pdf			
<b>Well Completed Dt:</b> 2016/06/17		<b>Latitude:</b> 44.332151051784			
<b>Audit No:</b> Z239751		<b>Longitude:</b> -78.722399396845			

<a href="#">8</a>	1 of 1	ESE/0.0	255.9 / 2.75	2376 TRANS CANADA HIGHWAY LINDSAY ON	WWIS
<b>Well ID:</b> 7270541					
<b>Construction Date:</b>					
<b>Use 1st:</b> Monitoring					
<b>Use 2nd:</b>					
<b>Final Well Status:</b> Observation Wells					
<b>Water Type:</b>					
<b>Casing Material:</b>					
<b>Audit No:</b> Z239728					
<b>Tag:</b> A210485					
<b>Constructn Method:</b>					
<b>Flowing (Y/N):</b>					
<b>Flow Rate:</b>					
<b>Data Entry Status:</b>					
<b>Data Src:</b>					
<b>Date Received:</b> 05-Sep-2016 00:00:00					
<b>Selected Flag:</b> TRUE					
<b>Abandonment Rec:</b>					
<b>Contractor:</b> 7472					
<b>Form Version:</b> 7					
<b>Owner:</b>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Elevation (m):</b> <b>Elevatn Reliabilty:</b> <b>Depth to Bedrock:</b> <b>Well Depth:</b> <b>Overburden/Bedrock:</b> <b>Pump Rate:</b> <b>Static Water Level:</b> <b>Clear/Cloudy:</b> <b>Municipality:</b> <b>Site Info:</b>		LINDSAY TOWN		<b>County:</b> <b>Lot:</b> <b>Concession:</b> <b>Concession Name:</b> <b>Easting NAD83:</b> <b>Northing NAD83:</b> <b>Zone:</b> <b>UTM Reliability:</b>	VICTORIA
<b>PDF URL (Map):</b>					
<b><u>Additional Detail(s) (Map)</u></b>					
<b>Well Completed Date:</b>		2016/06/17			
<b>Year Completed:</b>		2016			
<b>Depth (m):</b>					
<b>Latitude:</b>		44.3323903133572			
<b>Longitude:</b>		-78.7181506497495			
<b>Path:</b>					
<b><u>Bore Hole Information</u></b>					
<b>Bore Hole ID:</b>		1006230859		<b>Elevation:</b>	
<b>DP2BR:</b>				<b>Elevrc:</b>	
<b>Spatial Status:</b>				<b>Zone:</b>	17
<b>Code OB:</b>				<b>East83:</b>	681922.00
<b>Code OB Desc:</b>				<b>North83:</b>	4911324.00
<b>Open Hole:</b>				<b>Org CS:</b>	UTM83
<b>Cluster Kind:</b>				<b>UTMRC:</b>	4
<b>Date Completed:</b>		17-Jun-2016 00:00:00		<b>UTMRC Desc:</b>	margin of error : 30 m - 100 m
<b>Remarks:</b>				<b>Location Method:</b>	wwr
<b>Loc Method Desc:</b>		on Water Well Record			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		1006269144			
<b>Layer:</b>					
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>					
<b>Most Common Material:</b>					
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>					
<b>Formation End Depth:</b>					
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		1006269152			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Layer:</b>	2				
<b>Plug From:</b>	9.0				
<b>Plug To:</b>	20.0				
<b>Plug Depth UOM:</b>	ft				
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>	1006269151				
<b>Layer:</b>	1				
<b>Plug From:</b>	0.0				
<b>Plug To:</b>	9.0				
<b>Plug Depth UOM:</b>	ft				
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>	1006269150				
<b>Method Construction Code:</b>	6				
<b>Method Construction:</b>	Boring				
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>	1006269143				
<b>Casing No:</b>	0				
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>	1006269147				
<b>Layer:</b>	1				
<b>Material:</b>	5				
<b>Open Hole or Material:</b>	PLASTIC				
<b>Depth From:</b>	0.0				
<b>Depth To:</b>	10.0				
<b>Casing Diameter:</b>	2.0				
<b>Casing Diameter UOM:</b>	inch				
<b>Casing Depth UOM:</b>	ft				
<b><u>Construction Record - Screen</u></b>					
<b>Screen ID:</b>	1006269148				
<b>Layer:</b>	1				
<b>Slot:</b>	10				
<b>Screen Top Depth:</b>	10.0				
<b>Screen End Depth:</b>	20.0				
<b>Screen Material:</b>	5				
<b>Screen Depth UOM:</b>	ft				
<b>Screen Diameter UOM:</b>	inch				
<b>Screen Diameter:</b>	2.5				
<b><u>Water Details</u></b>					
<b>Water ID:</b>	1006269146				
<b>Layer:</b>					
<b>Kind Code:</b>					
<b>Kind:</b>					
<b>Water Found Depth:</b>					
<b>Water Found Depth UOM:</b>	ft				

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

Hole ID: 1006269145  
Diameter: 6.0  
Depth From: 0.0  
Depth To: 20.0  
Hole Depth UOM: ft  
Hole Diameter UOM: inch

**Links**

<b>Bore Hole ID:</b>	1006230859	<b>Tag No:</b>	A210485
<b>Depth M:</b>		<b>Contractor:</b>	7472
<b>Year Completed:</b>	2016	<b>Path:</b>	727\7270541.pdf
<b>Well Completed Dt:</b>	2016/06/17	<b>Latitude:</b>	44.3323903133572
<b>Audit No:</b>	Z239728	<b>Longitude:</b>	-78.7181506497495

<u>9</u>	1 of 1	ESE/0.0	256.5 / 3.39	lot 16 con 6 ON	WWIS
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<b>Well ID:</b>	6402599	<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>		<b>Flow Rate:</b>	
<b>Use 1st:</b>	Domestic	<b>Data Entry Status:</b>	
<b>Use 2nd:</b>	0	<b>Data Src:</b>	1
<b>Final Well Status:</b>	Water Supply	<b>Date Received:</b>	04-Nov-1963 00:00:00
<b>Water Type:</b>		<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>		<b>Abandonment Rec:</b>	
<b>Audit No:</b>		<b>Contractor:</b>	1415
<b>Tag:</b>		<b>Form Version:</b>	1
<b>Constructn Method:</b>		<b>Owner:</b>	
<b>Elevation (m):</b>		<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>		<b>Lot:</b>	016
<b>Depth to Bedrock:</b>		<b>Concession:</b>	06
<b>Well Depth:</b>		<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>		<b>Easting NAD83:</b>	
<b>Pump Rate:</b>		<b>Northing NAD83:</b>	
<b>Static Water Level:</b>		<b>Zone:</b>	
<b>Clear/Cloudy:</b>		<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP		
<b>Site Info:</b>			

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/640\6402599.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402599.pdf)

**Additional Detail(s) (Map)**

**Well Completed Date:** 1963/10/18  
**Year Completed:** 1963  
**Depth (m):** 12.192  
**Latitude:** 44.3320714275046  
**Longitude:** -78.7175107964387  
**Path:** 640\6402599.pdf

**Bore Hole Information**

<b>Bore Hole ID:</b>	10437629	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681974.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911290.00
<b>Open Hole:</b>		<b>Org CS:</b>	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Cluster Kind:</b>				<b>UTMRC:</b>	5
<b>Date Completed:</b>	18-Oct-1963 00:00:00			<b>UTMRC Desc:</b>	margin of error : 100 m - 300 m
<b>Remarks:</b>				<b>Location Method:</b>	p5
<b>Loc Method Desc:</b>		Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494884			
<b>Layer:</b>		2			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		33.0			
<b>Formation End Depth:</b>		40.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494883			
<b>Layer:</b>		1			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		33.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well</u></b>					
<b><u>Use</u></b>					
<b>Method Construction ID:</b>		966402599			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10986199			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Casing ID:</b> 930714852					
<b>Layer:</b> 1					
<b>Material:</b> 1					
<b>Open Hole or Material:</b> STEEL					
<b>Depth From:</b>					
<b>Depth To:</b> 33.0					
<b>Casing Diameter:</b> 6.0					
<b>Casing Diameter UOM:</b> inch					
<b>Casing Depth UOM:</b> ft					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b> 930714853					
<b>Layer:</b> 2					
<b>Material:</b> 4					
<b>Open Hole or Material:</b> OPEN HOLE					
<b>Depth From:</b>					
<b>Depth To:</b> 40.0					
<b>Casing Diameter:</b> 6.0					
<b>Casing Diameter UOM:</b> inch					
<b>Casing Depth UOM:</b> ft					
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b> PUMP					
<b>Pump Test ID:</b> 996402599					
<b>Pump Set At:</b>					
<b>Static Level:</b> 16.0					
<b>Final Level After Pumping:</b> 16.0					
<b>Recommended Pump Depth:</b> 36.0					
<b>Pumping Rate:</b> 20.0					
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b> 10.0					
<b>Levels UOM:</b> ft					
<b>Rate UOM:</b> GPM					
<b>Water State After Test Code:</b> 1					
<b>Water State After Test:</b> CLEAR					
<b>Pumping Test Method:</b> 1					
<b>Pumping Duration HR:</b> 2					
<b>Pumping Duration MIN:</b> 0					
<b>Flowing:</b> No					
<b><u>Water Details</u></b>					
<b>Water ID:</b> 933924559					
<b>Layer:</b> 1					
<b>Kind Code:</b> 1					
<b>Kind:</b> FRESH					
<b>Water Found Depth:</b> 40.0					
<b>Water Found Depth UOM:</b> ft					
<b><u>Links</u></b>					
<b>Bore Hole ID:</b> 10437629		<b>Tag No:</b>			
<b>Depth M:</b> 12.192		<b>Contractor:</b> 1415			
<b>Year Completed:</b> 1963		<b>Path:</b> 640\6402599.pdf			
<b>Well Completed Dt:</b> 1963/10/18		<b>Latitude:</b> 44.3320714275046			
<b>Audit No:</b>		<b>Longitude:</b> -78.7175107964387			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Order No:</b>	20061108001			<b>Nearest Intersection:</b>	Lindsay Street South
<b>Status:</b>	C			<b>Municipality:</b>	City of Kawartha Lakes
<b>Report Type:</b>	Complete Report			<b>Client Prov/State:</b>	ON
<b>Report Date:</b>	11/16/2006			<b>Search Radius (km):</b>	0.3
<b>Date Received:</b>	11/8/2006			<b>X:</b>	-78.720092
<b>Previous Site Name:</b>				<b>Y:</b>	44.330242
<b>Lot/Building Size:</b>					
<b>Additional Info Ordered:</b>	Fire Insur. Maps And /or Site Plans				

<a href="#">11</a>	1 of 1	SSW/0.0	254.7 / 1.60	2376 TRANSCANADA HWY LINDSAY ON	WWIS
<b>Well ID:</b>	7270539			<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>	Monitoring			<b>Data Entry Status:</b>	
<b>Use 2nd:</b>				<b>Data Src:</b>	
<b>Final Well Status:</b>	Observation Wells			<b>Date Received:</b>	05-Sep-2016 00:00:00
<b>Water Type:</b>				<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>	Z239752			<b>Contractor:</b>	7472
<b>Tag:</b>	A210483			<b>Form Version:</b>	7
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>				<b>Lot:</b>	
<b>Depth to Bedrock:</b>				<b>Concession:</b>	
<b>Well Depth:</b>				<b>Concession Name:</b>	
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP				
<b>Site Info:</b>					

PDF URL (Map):

Additional Detail(s) (Map)

**Well Completed Date:** 2016/06/17  
**Year Completed:** 2016  
**Depth (m):**  
**Latitude:** 44.3303801119334  
**Longitude:** -78.7220791541437  
**Path:**

Bore Hole Information

<b>Bore Hole ID:</b>	1006230853	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681615.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911092.00
<b>Open Hole:</b>		<b>Org CS:</b>	UTM83
<b>Cluster Kind:</b>		<b>UTMRC:</b>	4
<b>Date Completed:</b>	17-Jun-2016 00:00:00	<b>UTMRC Desc:</b>	margin of error : 30 m - 100 m
<b>Remarks:</b>		<b>Location Method:</b>	wwr
<b>Loc Method Desc:</b>	on Water Well Record		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			

<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>
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		1006269124			
<b>Layer:</b>					
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>					
<b>Most Common Material:</b>					
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>					
<b>Formation End Depth:</b>					
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1006269132			
<b>Layer:</b>		2			
<b>Plug From:</b>		13.0			
<b>Plug To:</b>		24.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1006269131			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		13.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		1006269130			
<b>Method Construction Code:</b>		6			
<b>Method Construction:</b>		Boring			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		1006269123			
<b>Casing No:</b>		0			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		1006269127			
<b>Layer:</b>		1			
<b>Material:</b>		5			
<b>Open Hole or Material:</b>		PLASTIC			
<b>Depth From:</b>		0.0			
<b>Depth To:</b>		14.0			
<b>Casing Diameter:</b>		2.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Screen</u></b>					
<b>Screen ID:</b>		1006269128			
<b>Layer:</b>		1			
<b>Slot:</b>		10			
<b>Screen Top Depth:</b>		14.0			
<b>Screen End Depth:</b>		24.0			
<b>Screen Material:</b>		5			
<b>Screen Depth UOM:</b>		ft			
<b>Screen Diameter UOM:</b>		inch			
<b>Screen Diameter:</b>		2.5			
<b><u>Water Details</u></b>					
<b>Water ID:</b>		1006269126			
<b>Layer:</b>					
<b>Kind Code:</b>					
<b>Kind:</b>					
<b>Water Found Depth:</b>					
<b>Water Found Depth UOM:</b>		ft			
<b><u>Hole Diameter</u></b>					
<b>Hole ID:</b>		1006269125			
<b>Diameter:</b>		6.0			
<b>Depth From:</b>		0.0			
<b>Depth To:</b>		24.0			
<b>Hole Depth UOM:</b>		ft			
<b>Hole Diameter UOM:</b>		inch			
<b><u>Links</u></b>					
<b>Bore Hole ID:</b>		1006230853		<b>Tag No:</b> A210483	
<b>Depth M:</b>				<b>Contractor:</b> 7472	
<b>Year Completed:</b>		2016		<b>Path:</b> 727\7270539.pdf	
<b>Well Completed Dt:</b>		2016/06/17		<b>Latitude:</b> 44.3303801119334	
<b>Audit No:</b>		Z239752		<b>Longitude:</b> -78.7220791541437	

<a href="#">12</a>	1 of 1	WNW/0.0	251.9 / -1.25	lot 17 con 6 ON	WWIS
<b>Well ID:</b>		6402602		<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>		Commerical		<b>Data Entry Status:</b>	
<b>Use 2nd:</b>		0		<b>Data Src:</b> 1	
<b>Final Well Status:</b>		Water Supply		<b>Date Received:</b> 12-Sep-1967 00:00:00	
<b>Water Type:</b>				<b>Selected Flag:</b> TRUE	
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>				<b>Contractor:</b> 2518	
<b>Tag:</b>				<b>Form Version:</b> 1	
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b> VICTORIA	
<b>Elevatn Reliabilty:</b>				<b>Lot:</b> 017	
<b>Depth to Bedrock:</b>				<b>Concession:</b> 06	
<b>Well Depth:</b>				<b>Concession Name:</b> CON	
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Clear/Cloudy:</b>					<b>UTM Reliability:</b>
<b>Municipality:</b>		OPS TOWNSHIP			
<b>Site Info:</b>					
<b>PDF URL (Map):</b>		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402602.pdf			
<b><u>Additional Detail(s) (Map)</u></b>					
<b>Well Completed Date:</b>		1967/08/10			
<b>Year Completed:</b>		1967			
<b>Depth (m):</b>		9.4488			
<b>Latitude:</b>		44.3346551576672			
<b>Longitude:</b>		-78.7242717279573			
<b>Path:</b>		640\6402602.pdf			
<b><u>Bore Hole Information</u></b>					
<b>Bore Hole ID:</b>		10437632		<b>Elevation:</b>	
<b>DP2BR:</b>				<b>Elevrc:</b>	
<b>Spatial Status:</b>				<b>Zone:</b> 17	
<b>Code OB:</b>				<b>East83:</b> 681427.00	
<b>Code OB Desc:</b>				<b>North83:</b> 4911562.00	
<b>Open Hole:</b>				<b>Org CS:</b>	
<b>Cluster Kind:</b>				<b>UTMRC:</b> 5	
<b>Date Completed:</b>		10-Aug-1967 00:00:00		<b>UTMRC Desc:</b> margin of error : 100 m - 300 m	
<b>Remarks:</b>				<b>Location Method:</b> p5	
<b>Loc Method Desc:</b>		Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494896			
<b>Layer:</b>		3			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		12			
<b>Mat2 Desc:</b>		STONES			
<b>Mat3:</b>		11			
<b>Mat3 Desc:</b>		GRAVEL			
<b>Formation Top Depth:</b>		12.0			
<b>Formation End Depth:</b>		31.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494894			
<b>Layer:</b>		1			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		2.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494895			
<b>Layer:</b>		2			
<b>Color:</b>		5			
<b>General Color:</b>		YELLOW			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		2.0			
<b>Formation End Depth:</b>		12.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966402602			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10986202			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714858			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		31.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		PUMP			
<b>Pump Test ID:</b>		996402602			
<b>Pump Set At:</b>					
<b>Static Level:</b>		9.0			
<b>Final Level After Pumping:</b>		16.0			
<b>Recommended Pump Depth:</b>		25.0			
<b>Pumping Rate:</b>		36.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		5.0			
<b>Levels UOM:</b>		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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**Rate UOM:** GPM  
**Water State After Test Code:** 1  
**Water State After Test:** CLEAR  
**Pumping Test Method:** 1  
**Pumping Duration HR:** 3  
**Pumping Duration MIN:** 0  
**Flowing:** No

**Water Details**

**Water ID:** 933924562  
**Layer:** 1  
**Kind Code:** 1  
**Kind:** FRESH  
**Water Found Depth:** 29.0  
**Water Found Depth UOM:** ft

**Links**

<b>Bore Hole ID:</b>	10437632	<b>Tag No:</b>	
<b>Depth M:</b>	9.4488	<b>Contractor:</b>	2518
<b>Year Completed:</b>	1967	<b>Path:</b>	640\6402602.pdf
<b>Well Completed Dt:</b>	1967/08/10	<b>Latitude:</b>	44.3346551576672
<b>Audit No:</b>		<b>Longitude:</b>	-78.7242717279573

<a href="#">13</a>	1 of 4	E/0.0	255.8 / 2.69	lot 16 con 6 ON	WWIS
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<b>Well ID:</b>	6411990	<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>		<b>Flow Rate:</b>	
<b>Use 1st:</b>		<b>Data Entry Status:</b>	
<b>Use 2nd:</b>		<b>Data Src:</b>	1
<b>Final Well Status:</b>	Test Hole	<b>Date Received:</b>	04-Aug-1989 00:00:00
<b>Water Type:</b>		<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>		<b>Abandonment Rec:</b>	
<b>Audit No:</b>	25932	<b>Contractor:</b>	2662
<b>Tag:</b>		<b>Form Version:</b>	1
<b>Constructn Method:</b>		<b>Owner:</b>	
<b>Elevation (m):</b>		<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>		<b>Lot:</b>	016
<b>Depth to Bedrock:</b>		<b>Concession:</b>	06
<b>Well Depth:</b>		<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>		<b>Easting NAD83:</b>	
<b>Pump Rate:</b>		<b>Northing NAD83:</b>	
<b>Static Water Level:</b>		<b>Zone:</b>	
<b>Clear/Cloudy:</b>		<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP		
<b>Site Info:</b>			

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/641\6411990.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/641\6411990.pdf)

**Additional Detail(s) (Map)**

**Well Completed Date:** 1989/06/13  
**Year Completed:** 1989  
**Depth (m):** 32.9184  
**Latitude:** 44.3338872476142  
**Longitude:** -78.7160229512131  
**Path:** 641\6411990.pdf

**Bore Hole Information**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Bore Hole ID:</b>	10446926			<b>Elevation:</b>	
<b>DP2BR:</b>				<b>Elevrc:</b>	
<b>Spatial Status:</b>				<b>Zone:</b>	17
<b>Code OB:</b>				<b>East83:</b>	682087.00
<b>Code OB Desc:</b>				<b>North83:</b>	4911495.00
<b>Open Hole:</b>				<b>Org CS:</b>	
<b>Cluster Kind:</b>				<b>UTMRC:</b>	9
<b>Date Completed:</b>	13-Jun-1989 00:00:00			<b>UTMRC Desc:</b>	unknown UTM
<b>Remarks:</b>				<b>Location Method:</b>	lot
<b>Loc Method Desc:</b>		Lot centroid			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					

**Overburden and Bedrock**  
**Materials Interval**

<b>Formation ID:</b>	932525520
<b>Layer:</b>	4
<b>Color:</b>	2
<b>General Color:</b>	GREY
<b>Mat1:</b>	11
<b>Most Common Material:</b>	GRAVEL
<b>Mat2:</b>	31
<b>Mat2 Desc:</b>	COARSE GRAVEL
<b>Mat3:</b>	05
<b>Mat3 Desc:</b>	CLAY
<b>Formation Top Depth:</b>	25.0
<b>Formation End Depth:</b>	33.0
<b>Formation End Depth UOM:</b>	ft

**Overburden and Bedrock**  
**Materials Interval**

<b>Formation ID:</b>	932525522
<b>Layer:</b>	6
<b>Color:</b>	2
<b>General Color:</b>	GREY
<b>Mat1:</b>	14
<b>Most Common Material:</b>	HARDPAN
<b>Mat2:</b>	
<b>Mat2 Desc:</b>	
<b>Mat3:</b>	
<b>Mat3 Desc:</b>	
<b>Formation Top Depth:</b>	99.0
<b>Formation End Depth:</b>	106.0
<b>Formation End Depth UOM:</b>	ft

**Overburden and Bedrock**  
**Materials Interval**

<b>Formation ID:</b>	932525521
<b>Layer:</b>	5
<b>Color:</b>	2
<b>General Color:</b>	GREY
<b>Mat1:</b>	11
<b>Most Common Material:</b>	GRAVEL
<b>Mat2:</b>	05
<b>Mat2 Desc:</b>	CLAY

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Mat3:</b>		06			
<b>Mat3 Desc:</b>		SILT			
<b>Formation Top Depth:</b>		33.0			
<b>Formation End Depth:</b>		99.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932525523			
<b>Layer:</b>		7			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		106.0			
<b>Formation End Depth:</b>		108.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932525517			
<b>Layer:</b>		1			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		11			
<b>Most Common Material:</b>		GRAVEL			
<b>Mat2:</b>		05			
<b>Mat2 Desc:</b>		CLAY			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		2.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932525518			
<b>Layer:</b>		2			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		12			
<b>Mat2 Desc:</b>		STONES			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		2.0			
<b>Formation End Depth:</b>		20.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932525519			
<b>Layer:</b>		3			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		20.0			
<b>Formation End Depth:</b>		25.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		933204217			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		9.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		933204218			
<b>Layer:</b>		2			
<b>Plug From:</b>		9.0			
<b>Plug To:</b>		11.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966411990			
<b>Method Construction Code:</b>		4			
<b>Method Construction:</b>		Rotary (Air)			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10995496			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930727229			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		100.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		PUMP			
<b>Pump Test ID:</b>		996411990			

<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>
<b>Pump Set At:</b>					
<b>Static Level:</b>		10.0			
<b>Final Level After Pumping:</b>		54.0			
<b>Recommended Pump Depth:</b>		103.0			
<b>Pumping Rate:</b>		40.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		40.0			
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		1			
<b>Pumping Duration HR:</b>		6			
<b>Pumping Duration MIN:</b>		2			
<b>Flowing:</b>		No			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934861790			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		45			
<b>Test Level:</b>		62.0			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		935124434			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		60			
<b>Test Level:</b>		60.0			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934607061			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		30			
<b>Test Level:</b>		61.0			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934335905			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		15			
<b>Test Level:</b>		56.0			
<b>Test Level UOM:</b>		ft			
<b><u>Water Details</u></b>					
<b>Water ID:</b>		933933920			
<b>Layer:</b>		1			
<b>Kind Code:</b>		1			
<b>Kind:</b>		FRESH			
<b>Water Found Depth:</b>		107.0			
<b>Water Found Depth UOM:</b>		ft			
<b><u>Links</u></b>					
<b>Bore Hole ID:</b>		10446926		<b>Tag No:</b>	
<b>Depth M:</b>		32.9184		<b>Contractor:</b>	2662

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Year Completed:</b>	1989			<b>Path:</b>	641\6411990.pdf
<b>Well Completed Dt:</b>	1989/06/13			<b>Latitude:</b>	44.3338872476142
<b>Audit No:</b>	25932			<b>Longitude:</b>	-78.7160229512131

<a href="#">13</a>	2 of 4	E/0.0	255.8 / 2.69	lot 16 con 6 ON	WWIS
<b>Well ID:</b>	6412640			<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>	Domestic			<b>Data Entry Status:</b>	
<b>Use 2nd:</b>				<b>Data Src:</b>	1
<b>Final Well Status:</b>	Water Supply			<b>Date Received:</b>	27-Jun-1990 00:00:00
<b>Water Type:</b>				<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>	78622			<b>Contractor:</b>	3367
<b>Tag:</b>				<b>Form Version:</b>	1
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>				<b>Lot:</b>	016
<b>Depth to Bedrock:</b>				<b>Concession:</b>	06
<b>Well Depth:</b>				<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP				
<b>Site Info:</b>					

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/641\6412640.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/641\6412640.pdf)

**Additional Detail(s) (Map)**

**Well Completed Date:** 1990/06/21  
**Year Completed:** 1990  
**Depth (m):** 14.6304  
**Latitude:** 44.3338872476142  
**Longitude:** -78.7160229512131  
**Path:** 641\6412640.pdf

**Bore Hole Information**

<b>Bore Hole ID:</b>	10447575	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	682087.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911495.00
<b>Open Hole:</b>		<b>Org CS:</b>	
<b>Cluster Kind:</b>		<b>UTMRC:</b>	9
<b>Date Completed:</b>	21-Jun-1990 00:00:00	<b>UTMRC Desc:</b>	unknown UTM
<b>Remarks:</b>		<b>Location Method:</b>	lot
<b>Loc Method Desc:</b>	Lot centroid		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			
<b>Supplier Comment:</b>			

**Overburden and Bedrock Materials Interval**

**Formation ID:** 932527930

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Layer:</b>		2			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		12			
<b>Mat2 Desc:</b>		STONES			
<b>Mat3:</b>		79			
<b>Mat3 Desc:</b>		PACKED			
<b>Formation Top Depth:</b>		3.0			
<b>Formation End Depth:</b>		18.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932527933			
<b>Layer:</b>		5			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		31			
<b>Most Common Material:</b>		COARSE GRAVEL			
<b>Mat2:</b>		10			
<b>Mat2 Desc:</b>		COARSE SAND			
<b>Mat3:</b>		77			
<b>Mat3 Desc:</b>		LOOSE			
<b>Formation Top Depth:</b>		47.0			
<b>Formation End Depth:</b>		48.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932527931			
<b>Layer:</b>		3			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		12			
<b>Mat2 Desc:</b>		STONES			
<b>Mat3:</b>		79			
<b>Mat3 Desc:</b>		PACKED			
<b>Formation Top Depth:</b>		18.0			
<b>Formation End Depth:</b>		40.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932527932			
<b>Layer:</b>		4			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		66			
<b>Mat2 Desc:</b>		DENSE			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		40.0			
<b>Formation End Depth:</b>		47.0			
<b>Formation End Depth UOM:</b>		ft			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932527929			
<b>Layer:</b>		1			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		85			
<b>Mat2 Desc:</b>		SOFT			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		3.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		933204725			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		10.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966412640			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10996145			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930727985			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		48.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		BAILER			
<b>Pump Test ID:</b>		996412640			
<b>Pump Set At:</b>					
<b>Static Level:</b>		0.0			
<b>Final Level After Pumping:</b>		10.0			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Recommended Pump Depth:</b>		30.0			
<b>Pumping Rate:</b>		20.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		10.0			
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		2			
<b>Pumping Duration HR:</b>		2			
<b>Pumping Duration MIN:</b>		0			
<b>Flowing:</b>		No			

**Draw Down & Recovery**

**Pump Test Detail ID:** 935126665  
**Test Type:** Draw Down  
**Test Duration:** 60  
**Test Level:** 10.0  
**Test Level UOM:** ft

**Draw Down & Recovery**

**Pump Test Detail ID:** 934337604  
**Test Type:** Draw Down  
**Test Duration:** 15  
**Test Level:** 10.0  
**Test Level UOM:** ft

**Draw Down & Recovery**

**Pump Test Detail ID:** 934862866  
**Test Type:** Draw Down  
**Test Duration:** 45  
**Test Level:** 10.0  
**Test Level UOM:** ft

**Draw Down & Recovery**

**Pump Test Detail ID:** 934608151  
**Test Type:** Draw Down  
**Test Duration:** 30  
**Test Level:** 10.0  
**Test Level UOM:** ft

**Water Details**

**Water ID:** 933934592  
**Layer:** 1  
**Kind Code:** 1  
**Kind:** FRESH  
**Water Found Depth:** 48.0  
**Water Found Depth UOM:** ft

**Links**

<b>Bore Hole ID:</b>	10447575	<b>Tag No:</b>	3367
<b>Depth M:</b>	14.6304	<b>Contractor:</b>	641\6412640.pdf
<b>Year Completed:</b>	1990	<b>Path:</b>	44.3338872476142
<b>Well Completed Dt:</b>	1990/06/21	<b>Latitude:</b>	-78.7160229512131
<b>Audit No:</b>	78622	<b>Longitude:</b>	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<a href="#">13</a>	3 of 4	E/0.0	255.8 / 2.69	lot 16 con 6 ON	WWIS
<b>Well ID:</b> 6415029 <b>Construction Date:</b> <b>Use 1st:</b> Domestic <b>Use 2nd:</b> <b>Final Well Status:</b> Water Supply <b>Water Type:</b> <b>Casing Material:</b> <b>Audit No:</b> 166399 <b>Tag:</b> <b>Constructn Method:</b> <b>Elevation (m):</b> <b>Elevatn Reliabilty:</b> <b>Depth to Bedrock:</b> <b>Well Depth:</b> <b>Overburden/Bedrock:</b> <b>Pump Rate:</b> <b>Static Water Level:</b> <b>Clear/Cloudy:</b> <b>Municipality:</b> OPS TOWNSHIP <b>Site Info:</b>		<b>Flowing (Y/N):</b> <b>Flow Rate:</b> <b>Data Entry Status:</b> <b>Data Src:</b> 1 <b>Date Received:</b> 15-May-1996 00:00:00 <b>Selected Flag:</b> TRUE <b>Abandonment Rec:</b> <b>Contractor:</b> 3367 <b>Form Version:</b> 1 <b>Owner:</b> <b>County:</b> VICTORIA <b>Lot:</b> 016 <b>Concession:</b> 06 <b>Concession Name:</b> CON <b>Easting NAD83:</b> <b>Northing NAD83:</b> <b>Zone:</b> <b>UTM Reliability:</b>			
<b>PDF URL (Map):</b>		<a href="https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/641\6415029.pdf">https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/641\6415029.pdf</a>			
<b><u>Additional Detail(s) (Map)</u></b>					
<b>Well Completed Date:</b> 1996/03/06 <b>Year Completed:</b> 1996 <b>Depth (m):</b> 6.4008 <b>Latitude:</b> 44.3338872476142 <b>Longitude:</b> -78.7160229512131 <b>Path:</b> 641\6415029.pdf					
<b><u>Bore Hole Information</u></b>					
<b>Bore Hole ID:</b> 10449955 <b>DP2BR:</b> <b>Spatial Status:</b> <b>Code OB:</b> <b>Code OB Desc:</b> <b>Open Hole:</b> <b>Cluster Kind:</b> <b>Date Completed:</b> 06-Mar-1996 00:00:00 <b>Remarks:</b> <b>Loc Method Desc:</b> Lot centroid <b>Elevrc Desc:</b> <b>Location Source Date:</b> <b>Improvement Location Source:</b> <b>Improvement Location Method:</b> <b>Source Revision Comment:</b> <b>Supplier Comment:</b>		<b>Elevation:</b> <b>Elevrc:</b> <b>Zone:</b> 17 <b>East83:</b> 682087.00 <b>North83:</b> 4911495.00 <b>Org CS:</b> <b>UTMRC:</b> 9 <b>UTMRC Desc:</b> unknown UTM <b>Location Method:</b> lot			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b> 932536868 <b>Layer:</b> 1 <b>Color:</b> 6 <b>General Color:</b> BROWN					

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>		85			
<b>Mat2 Desc:</b>		SOFT			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		1.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932536869			
<b>Layer:</b>		2			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		11			
<b>Mat2 Desc:</b>		GRAVEL			
<b>Mat3:</b>		28			
<b>Mat3 Desc:</b>		SAND			
<b>Formation Top Depth:</b>		1.0			
<b>Formation End Depth:</b>		14.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932536870			
<b>Layer:</b>		3			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		11			
<b>Most Common Material:</b>		GRAVEL			
<b>Mat2:</b>		05			
<b>Mat2 Desc:</b>		CLAY			
<b>Mat3:</b>		28			
<b>Mat3 Desc:</b>		SAND			
<b>Formation Top Depth:</b>		14.0			
<b>Formation End Depth:</b>		20.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932536871			
<b>Layer:</b>		4			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		31			
<b>Most Common Material:</b>		COARSE GRAVEL			
<b>Mat2:</b>		28			
<b>Mat2 Desc:</b>		SAND			
<b>Mat3:</b>		77			
<b>Mat3 Desc:</b>		LOOSE			
<b>Formation Top Depth:</b>		20.0			
<b>Formation End Depth:</b>		21.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		933207175			
<b>Layer:</b>		2			
<b>Plug From:</b>		4.0			
<b>Plug To:</b>		10.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		933207174			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		4.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966415029			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10998525			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930730896			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		21.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		BAILER			
<b>Pump Test ID:</b>		996415029			
<b>Pump Set At:</b>					
<b>Static Level:</b>		3.0			
<b>Final Level After Pumping:</b>		11.0			
<b>Recommended Pump Depth:</b>		18.0			
<b>Pumping Rate:</b>		6.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		5.0			
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		2			
<b>Pumping Duration HR:</b>		2			
<b>Pumping Duration MIN:</b>		0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Flowing: No

Draw Down & Recovery

Pump Test Detail ID: 935124521  
 Test Type: Draw Down  
 Test Duration: 60  
 Test Level: 11.0  
 Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934335579  
 Test Type: Draw Down  
 Test Duration: 15  
 Test Level: 11.0  
 Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934860910  
 Test Type: Draw Down  
 Test Duration: 45  
 Test Level: 11.0  
 Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934606077  
 Test Type: Draw Down  
 Test Duration: 30  
 Test Level: 11.0  
 Test Level UOM: ft

Water Details

Water ID: 933936989  
 Layer: 1  
 Kind Code: 5  
 Kind: Not stated  
 Water Found Depth: 21.0  
 Water Found Depth UOM: ft

Links

Bore Hole ID:	10449955	Tag No:	
Depth M:	6.4008	Contractor:	3367
Year Completed:	1996	Path:	641\6415029.pdf
Well Completed Dt:	1996/03/06	Latitude:	44.3338872476142
Audit No:	166399	Longitude:	-78.7160229512131

[13](#)      4 of 4      E/0.0      255.8 / 2.69      lot 16 con 6 ON      [WWIS](#)

Well ID:	6415093	Flowing (Y/N):	
Construction Date:		Flow Rate:	
Use 1st:	Domestic	Data Entry Status:	
Use 2nd:		Data Src:	1
Final Well Status:	Water Supply	Date Received:	05-Sep-1996 00:00:00
Water Type:		Selected Flag:	TRUE

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>	160838			<b>Contractor:</b>	1910
<b>Tag:</b>				<b>Form Version:</b>	1
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>				<b>Lot:</b>	016
<b>Depth to Bedrock:</b>				<b>Concession:</b>	06
<b>Well Depth:</b>				<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>		OPS TOWNSHIP			
<b>Site Info:</b>					
<b>PDF URL (Map):</b>		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/641\6415093.pdf			
<b><u>Additional Detail(s) (Map)</u></b>					
<b>Well Completed Date:</b>		1996/08/14			
<b>Year Completed:</b>		1996			
<b>Depth (m):</b>		9.144			
<b>Latitude:</b>		44.3338872476142			
<b>Longitude:</b>		-78.7160229512131			
<b>Path:</b>		641\6415093.pdf			
<b><u>Bore Hole Information</u></b>					
<b>Bore Hole ID:</b>	10450019			<b>Elevation:</b>	
<b>DP2BR:</b>				<b>Elevrc:</b>	
<b>Spatial Status:</b>				<b>Zone:</b>	17
<b>Code OB:</b>				<b>East83:</b>	682087.00
<b>Code OB Desc:</b>				<b>North83:</b>	4911495.00
<b>Open Hole:</b>				<b>Org CS:</b>	
<b>Cluster Kind:</b>				<b>UTMRC:</b>	9
<b>Date Completed:</b>	14-Aug-1996 00:00:00			<b>UTMRC Desc:</b>	unknown UTM
<b>Remarks:</b>				<b>Location Method:</b>	lot
<b>Loc Method Desc:</b>		Lot centroid			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932537106			
<b>Layer:</b>		3			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>		26			
<b>Mat2 Desc:</b>		ROCK			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		23.0			
<b>Formation End Depth:</b>		30.0			
<b>Formation End Depth UOM:</b>		ft			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932537105			
<b>Layer:</b>		2			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		11			
<b>Most Common Material:</b>		GRAVEL			
<b>Mat2:</b>		05			
<b>Mat2 Desc:</b>		CLAY			
<b>Mat3:</b>		14			
<b>Mat3 Desc:</b>		HARDPAN			
<b>Formation Top Depth:</b>		1.0			
<b>Formation End Depth:</b>		23.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932537104			
<b>Layer:</b>		1			
<b>Color:</b>		8			
<b>General Color:</b>		BLACK			
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		1.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		933207265			
<b>Layer:</b>		1			
<b>Plug From:</b>		8.0			
<b>Plug To:</b>		10.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966415093			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10998589			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930730980			
<b>Layer:</b>		1			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Material:</b>	1				
<b>Open Hole or Material:</b>	STEEL				
<b>Depth From:</b>					
<b>Depth To:</b>	24.0				
<b>Casing Diameter:</b>	6.0				
<b>Casing Diameter UOM:</b>	inch				
<b>Casing Depth UOM:</b>	ft				
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>	930730981				
<b>Layer:</b>	2				
<b>Material:</b>	4				
<b>Open Hole or Material:</b>	OPEN HOLE				
<b>Depth From:</b>					
<b>Depth To:</b>	30.0				
<b>Casing Diameter:</b>					
<b>Casing Diameter UOM:</b>	inch				
<b>Casing Depth UOM:</b>	ft				
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>	PUMP				
<b>Pump Test ID:</b>	996415093				
<b>Pump Set At:</b>					
<b>Static Level:</b>	10.0				
<b>Final Level After Pumping:</b>	25.0				
<b>Recommended Pump Depth:</b>	27.0				
<b>Pumping Rate:</b>	9.0				
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>	8.0				
<b>Levels UOM:</b>	ft				
<b>Rate UOM:</b>	GPM				
<b>Water State After Test Code:</b>	1				
<b>Water State After Test:</b>	CLEAR				
<b>Pumping Test Method:</b>	1				
<b>Pumping Duration HR:</b>	4				
<b>Pumping Duration MIN:</b>	0				
<b>Flowing:</b>	No				
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>	935124574				
<b>Test Type:</b>	Recovery				
<b>Test Duration:</b>	60				
<b>Test Level:</b>	10.0				
<b>Test Level UOM:</b>	ft				
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>	934606130				
<b>Test Type:</b>	Recovery				
<b>Test Duration:</b>	30				
<b>Test Level:</b>	10.0				
<b>Test Level UOM:</b>	ft				
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>	934336050				
<b>Test Type:</b>	Recovery				
<b>Test Duration:</b>	15				
<b>Test Level:</b>	12.0				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Test Level UOM: ft

**Draw Down & Recovery**

Pump Test Detail ID: 934861381  
 Test Type: Recovery  
 Test Duration: 45  
 Test Level: 10.0  
 Test Level UOM: ft

**Water Details**

Water ID: 933937057  
 Layer: 1  
 Kind Code: 1  
 Kind: FRESH  
 Water Found Depth: 29.0  
 Water Found Depth UOM: ft

**Links**

Bore Hole ID:	10450019	Tag No:	
Depth M:	9.144	Contractor:	1910
Year Completed:	1996	Path:	641\6415093.pdf
Well Completed Dt:	1996/08/14	Latitude:	44.3338872476142
Audit No:	160838	Longitude:	-78.7160229512131

<a href="#">14</a>	1 of 1	ESE/0.0	258.8 / 5.66	lot 16 con 6 ON	WWIS
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Well ID:	6404200	Flowing (Y/N):	
Construction Date:		Flow Rate:	
Use 1st:	Domestic	Data Entry Status:	
Use 2nd:	0	Data Src:	1
Final Well Status:	Water Supply	Date Received:	23-Sep-1970 00:00:00
Water Type:		Selected Flag:	TRUE
Casing Material:		Abandonment Rec:	
Audit No:		Contractor:	2518
Tag:		Form Version:	1
Constructn Method:		Owner:	
Elevation (m):		County:	VICTORIA
Elevatn Reliability:		Lot:	016
Depth to Bedrock:		Concession:	06
Well Depth:		Concession Name:	CON
Overburden/Bedrock:		Easting NAD83:	
Pump Rate:		Northing NAD83:	
Static Water Level:		Zone:	
Clear/Cloudy:		UTM Reliability:	
Municipality:	OPS TOWNSHIP		
Site Info:			

PDF URL (Map): [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/640\6404200.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6404200.pdf)

**Additional Detail(s) (Map)**

Well Completed Date: 1970/07/08  
 Year Completed: 1970  
 Depth (m): 10.668  
 Latitude: 44.3310086414514  
 Longitude: -78.7170377928639  
 Path: 640\6404200.pdf

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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**Bore Hole Information**

<b>Bore Hole ID:</b>	10439226	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	682015.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911173.00
<b>Open Hole:</b>		<b>Org CS:</b>	
<b>Cluster Kind:</b>		<b>UTMRC:</b>	4
<b>Date Completed:</b>	08-Jul-1970 00:00:00	<b>UTMRC Desc:</b>	margin of error : 30 m - 100 m
<b>Remarks:</b>		<b>Location Method:</b>	p4
<b>Loc Method Desc:</b>	Original Pre1985 UTM Rel Code 4: margin of error : 30 m - 100 m		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			
<b>Supplier Comment:</b>			

**Overburden and Bedrock**

**Materials Interval**

<b>Formation ID:</b>	932499216
<b>Layer:</b>	1
<b>Color:</b>	
<b>General Color:</b>	
<b>Mat1:</b>	02
<b>Most Common Material:</b>	TOPSOIL
<b>Mat2:</b>	
<b>Mat2 Desc:</b>	
<b>Mat3:</b>	
<b>Mat3 Desc:</b>	
<b>Formation Top Depth:</b>	0.0
<b>Formation End Depth:</b>	2.0
<b>Formation End Depth UOM:</b>	ft

**Overburden and Bedrock**

**Materials Interval**

<b>Formation ID:</b>	932499217
<b>Layer:</b>	2
<b>Color:</b>	5
<b>General Color:</b>	YELLOW
<b>Mat1:</b>	05
<b>Most Common Material:</b>	CLAY
<b>Mat2:</b>	12
<b>Mat2 Desc:</b>	STONES
<b>Mat3:</b>	
<b>Mat3 Desc:</b>	
<b>Formation Top Depth:</b>	2.0
<b>Formation End Depth:</b>	17.0
<b>Formation End Depth UOM:</b>	ft

**Overburden and Bedrock**

**Materials Interval**

<b>Formation ID:</b>	932499218
<b>Layer:</b>	3
<b>Color:</b>	2
<b>General Color:</b>	GREY
<b>Mat1:</b>	05

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Most Common Material:</b>					
<b>Mat2:</b>		CLAY			
<b>Mat2 Desc:</b>		12			
<b>Mat3:</b>		STONES			
<b>Mat3 Desc:</b>		17			
<b>Formation Top Depth:</b>		SHALE			
<b>Formation End Depth:</b>		17.0			
<b>Formation End Depth UOM:</b>		28.0			
		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932499219			
<b>Layer:</b>		4			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		28.0			
<b>Formation End Depth:</b>		35.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966404200			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10987796			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930717541			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>					
<b>Depth To:</b>		35.0			
<b>Casing Diameter:</b>					
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930717540			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		30.0			
<b>Casing Diameter:</b>		6.0			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		BAILER			
<b>Pump Test ID:</b>		996404200			
<b>Pump Set At:</b>					
<b>Static Level:</b>		8.0			
<b>Final Level After Pumping:</b>		20.0			
<b>Recommended Pump Depth:</b>		25.0			
<b>Pumping Rate:</b>		10.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		5.0			
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		2			
<b>Pumping Duration HR:</b>		1			
<b>Pumping Duration MIN:</b>		0			
<b>Flowing:</b>		No			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934852129			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		45			
<b>Test Level:</b>		20.0			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934327149			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		15			
<b>Test Level:</b>		20.0			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934595336			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		30			
<b>Test Level:</b>		20.0			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		935114072			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		60			
<b>Test Level:</b>		20.0			
<b>Test Level UOM:</b>		ft			
<b><u>Water Details</u></b>					
<b>Water ID:</b>		933926097			
<b>Layer:</b>		1			
<b>Kind Code:</b>		1			
<b>Kind:</b>		FRESH			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Water Found Depth:		32.0			
Water Found Depth UOM:		ft			
<b>Links</b>					
Bore Hole ID:	10439226			Tag No:	
Depth M:	10.668			Contractor:	2518
Year Completed:	1970			Path:	640\6404200.pdf
Well Completed Dt:	1970/07/08			Latitude:	44.3310086414514
Audit No:				Longitude:	-78.7170377928639

<a href="#">15</a>	1 of 1	NW/0.0	254.5 / 1.39	2376 TRANS CANADA HWY LINDSAY ON	WWIS
Well ID:	7270546			Flowing (Y/N):	
Construction Date:				Flow Rate:	
Use 1st:	Monitoring			Data Entry Status:	
Use 2nd:				Data Src:	
Final Well Status:	Observation Wells			Date Received:	05-Sep-2016 00:00:00
Water Type:				Selected Flag:	TRUE
Casing Material:				Abandonment Rec:	
Audit No:	Z239733			Contractor:	7472
Tag:	A210490			Form Version:	7
Constructn Method:				Owner:	
Elevation (m):				County:	VICTORIA
Elevatn Reliability:				Lot:	
Depth to Bedrock:				Concession:	
Well Depth:				Concession Name:	
Overburden/Bedrock:				Easting NAD83:	
Pump Rate:				Northing NAD83:	
Static Water Level:				Zone:	
Clear/Cloudy:				UTM Reliability:	
Municipality:	OPS TOWNSHIP				
Site Info:					

PDF URL (Map):

**Additional Detail(s) (Map)**

Well Completed Date:	2016/06/17
Year Completed:	2016
Depth (m):	
Latitude:	44.3356779380487
Longitude:	-78.7240941722505
Path:	

**Bore Hole Information**

Bore Hole ID:	1006230888	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	681438.00
Code OB Desc:		North83:	4911676.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	17-Jun-2016 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Loc Method Desc:	on Water Well Record		
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		1006269194			
<b>Layer:</b>					
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>					
<b>Most Common Material:</b>					
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>					
<b>Formation End Depth:</b>					
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1006269201			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		9.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1006269202			
<b>Layer:</b>		2			
<b>Plug From:</b>		9.0			
<b>Plug To:</b>		20.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		1006269200			
<b>Method Construction Code:</b>		6			
<b>Method Construction:</b>		Boring			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		1006269193			
<b>Casing No:</b>		0			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		1006269197			
<b>Layer:</b>		1			
<b>Material:</b>		5			
<b>Open Hole or Material:</b>		PLASTIC			
<b>Depth From:</b>		0.0			
<b>Depth To:</b>		10.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Casing Diameter:		2.0			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			

**Construction Record - Screen**

Screen ID:	1006269198
Layer:	1
Slot:	10
Screen Top Depth:	10.0
Screen End Depth:	20.0
Screen Material:	5
Screen Depth UOM:	ft
Screen Diameter UOM:	inch
Screen Diameter:	2.5

**Water Details**

Water ID:	1006269196
Layer:	
Kind Code:	
Kind:	
Water Found Depth:	
Water Found Depth UOM:	ft

**Hole Diameter**

Hole ID:	1006269195
Diameter:	6.0
Depth From:	0.0
Depth To:	20.0
Hole Depth UOM:	ft
Hole Diameter UOM:	inch

**Links**

Bore Hole ID:	1006230888	Tag No:	A210490
Depth M:		Contractor:	7472
Year Completed:	2016	Path:	727\7270546.pdf
Well Completed Dt:	2016/06/17	Latitude:	44.3356779380487
Audit No:	Z239733	Longitude:	-78.7240941722505

[16](#)      1 of 1      NW/0.0      254.8 / 1.66      Lindsay St S  
Kawartha Lakes ON K9V4R4      **EHS**

Order No:	20170720153	Nearest Intersection:	
Status:	C	Municipality:	
Report Type:	Custom Report	Client Prov/State:	ON
Report Date:	28-JUL-17	Search Radius (km):	.25
Date Received:	20-JUL-17	X:	-78.724733
Previous Site Name:		Y:	44.336288
Lot/Building Size:			
Additional Info Ordered:			

[17](#)      1 of 1      WNW/0.0      255.1 / 1.93      lot 17 con 6  
ON      **WWIS**

Well ID:	6402603	Flowing (Y/N):	
Construction Date:		Flow Rate:	
Use 1st:	Commerical	Data Entry Status:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Use 2nd:</b>	0			<b>Data Src:</b>	1
<b>Final Well Status:</b>	Water Supply			<b>Date Received:</b>	27-Apr-1959 00:00:00
<b>Water Type:</b>				<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>				<b>Contractor:</b>	4713
<b>Tag:</b>				<b>Form Version:</b>	1
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>				<b>Lot:</b>	017
<b>Depth to Bedrock:</b>				<b>Concession:</b>	06
<b>Well Depth:</b>				<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP				
<b>Site Info:</b>					
<b>PDF URL (Map):</b>	<a href="https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402603.pdf">https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402603.pdf</a>				
<b><u>Additional Detail(s) (Map)</u></b>					
<b>Well Completed Date:</b>	1959/03/10				
<b>Year Completed:</b>	1959				
<b>Depth (m):</b>	10.3632				
<b>Latitude:</b>	44.3361524609389				
<b>Longitude:</b>	-78.7253176301173				
<b>Path:</b>	640\6402603.pdf				
<b><u>Bore Hole Information</u></b>					
<b>Bore Hole ID:</b>	10437633			<b>Elevation:</b>	
<b>DP2BR:</b>				<b>Elevrc:</b>	
<b>Spatial Status:</b>				<b>Zone:</b>	17
<b>Code OB:</b>				<b>East83:</b>	681339.00
<b>Code OB Desc:</b>				<b>North83:</b>	4911726.00
<b>Open Hole:</b>				<b>Org CS:</b>	
<b>Cluster Kind:</b>				<b>UTMRC:</b>	5
<b>Date Completed:</b>	10-Mar-1959 00:00:00			<b>UTMRC Desc:</b>	margin of error : 100 m - 300 m
<b>Remarks:</b>				<b>Location Method:</b>	p5
<b>Loc Method Desc:</b>	Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m				
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>	932494897				
<b>Layer:</b>	1				
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>	05				
<b>Most Common Material:</b>	CLAY				
<b>Mat2:</b>	12				
<b>Mat2 Desc:</b>	STONES				
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>	0.0				
<b>Formation End Depth:</b>	24.0				

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932494898			
<b>Layer:</b>		2			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		24.0			
<b>Formation End Depth:</b>		34.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966402603			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10986203			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714860			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>					
<b>Depth To:</b>		34.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714859			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		24.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		PUMP			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Pump Test ID:</b>		996402603			
<b>Pump Set At:</b>					
<b>Static Level:</b>		2.0			
<b>Final Level After Pumping:</b>		10.0			
<b>Recommended Pump Depth:</b>					
<b>Pumping Rate:</b>		10.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>					
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		1			
<b>Pumping Duration HR:</b>		2			
<b>Pumping Duration MIN:</b>		0			
<b>Flowing:</b>		No			

**Water Details**

<b>Water ID:</b>	933924563
<b>Layer:</b>	1
<b>Kind Code:</b>	1
<b>Kind:</b>	FRESH
<b>Water Found Depth:</b>	34.0
<b>Water Found Depth UOM:</b>	ft

**Links**

<b>Bore Hole ID:</b>	10437633	<b>Tag No:</b>	
<b>Depth M:</b>	10.3632	<b>Contractor:</b>	4713
<b>Year Completed:</b>	1959	<b>Path:</b>	640\6402603.pdf
<b>Well Completed Dt:</b>	1959/03/10	<b>Latitude:</b>	44.3361524609389
<b>Audit No:</b>		<b>Longitude:</b>	-78.7253176301173

<a href="#">18</a>	1 of 1	NW/0.0	255.8 / 2.69	LINDSAY STREET SOUTH LINDSAY ON	WWIS
<b>Well ID:</b>	7295790	<b>Flowing (Y/N):</b>			
<b>Construction Date:</b>		<b>Flow Rate:</b>			
<b>Use 1st:</b>	Test Hole	<b>Data Entry Status:</b>			
<b>Use 2nd:</b>	Monitoring	<b>Data Src:</b>			
<b>Final Well Status:</b>	Monitoring and Test Hole	<b>Date Received:</b>	29-Sep-2017 00:00:00		
<b>Water Type:</b>		<b>Selected Flag:</b>	TRUE		
<b>Casing Material:</b>		<b>Abandonment Rec:</b>			
<b>Audit No:</b>	Z268130	<b>Contractor:</b>	7241		
<b>Tag:</b>	A233975	<b>Form Version:</b>	7		
<b>Constructn Method:</b>		<b>Owner:</b>			
<b>Elevation (m):</b>		<b>County:</b>	VICTORIA		
<b>Elevatn Reliabilty:</b>		<b>Lot:</b>			
<b>Depth to Bedrock:</b>		<b>Concession:</b>			
<b>Well Depth:</b>		<b>Concession Name:</b>			
<b>Overburden/Bedrock:</b>		<b>Easting NAD83:</b>			
<b>Pump Rate:</b>		<b>Northing NAD83:</b>			
<b>Static Water Level:</b>		<b>Zone:</b>			
<b>Clear/Cloudy:</b>		<b>UTM Reliability:</b>			
<b>Municipality:</b>	LINDSAY TOWN				
<b>Site Info:</b>	WKQ-010300 A0-A01				
<b>PDF URL (Map):</b>					

**Additional Detail(s) (Map)**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Well Completed Date:</b>		2017/08/19			
<b>Year Completed:</b>		2017			
<b>Depth (m):</b>		5.1816			
<b>Latitude:</b>		44.3372509495977			
<b>Longitude:</b>		-78.7257768965801			
<b>Path:</b>					

**Bore Hole Information**

<b>Bore Hole ID:</b>	1006739959	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681299.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911847.00
<b>Open Hole:</b>		<b>Org CS:</b>	UTM83
<b>Cluster Kind:</b>		<b>UTMRC:</b>	4
<b>Date Completed:</b>	19-Aug-2017 00:00:00	<b>UTMRC Desc:</b>	margin of error : 30 m - 100 m
<b>Remarks:</b>		<b>Location Method:</b>	wwr
<b>Loc Method Desc:</b>	on Water Well Record		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			
<b>Supplier Comment:</b>			

**Overburden and Bedrock**

**Materials Interval**

<b>Formation ID:</b>	1006886632
<b>Layer:</b>	1
<b>Color:</b>	6
<b>General Color:</b>	BROWN
<b>Mat1:</b>	06
<b>Most Common Material:</b>	SILT
<b>Mat2:</b>	28
<b>Mat2 Desc:</b>	SAND
<b>Mat3:</b>	11
<b>Mat3 Desc:</b>	GRAVEL
<b>Formation Top Depth:</b>	0.0
<b>Formation End Depth:</b>	17.0
<b>Formation End Depth UOM:</b>	ft

**Annular Space/Abandonment**

**Sealing Record**

<b>Plug ID:</b>	1006886640
<b>Layer:</b>	1
<b>Plug From:</b>	17.0
<b>Plug To:</b>	6.0
<b>Plug Depth UOM:</b>	ft

**Annular Space/Abandonment**

**Sealing Record**

<b>Plug ID:</b>	1006886641
<b>Layer:</b>	2
<b>Plug From:</b>	6.0
<b>Plug To:</b>	0.0
<b>Plug Depth UOM:</b>	ft

**Annular Space/Abandonment**

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>			1006886642		
<b>Layer:</b>			3		
<b>Plug From:</b>					
<b>Plug To:</b>					
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>			1006886639		
<b>Method Construction Code:</b>			D		
<b>Method Construction:</b>			Direct Push		
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>			1006886631		
<b>Casing No:</b>			0		
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>			1006886635		
<b>Layer:</b>			1		
<b>Material:</b>			5		
<b>Open Hole or Material:</b>			PLASTIC		
<b>Depth From:</b>			0.0		
<b>Depth To:</b>			7.0		
<b>Casing Diameter:</b>			2.0		
<b>Casing Diameter UOM:</b>			inch		
<b>Casing Depth UOM:</b>			ft		
<b><u>Construction Record - Screen</u></b>					
<b>Screen ID:</b>			1006886636		
<b>Layer:</b>			1		
<b>Slot:</b>			.1		
<b>Screen Top Depth:</b>			7.0		
<b>Screen End Depth:</b>			17.0		
<b>Screen Material:</b>			5		
<b>Screen Depth UOM:</b>			ft		
<b>Screen Diameter UOM:</b>			inch		
<b>Screen Diameter:</b>			2.25		
<b><u>Water Details</u></b>					
<b>Water ID:</b>			1006886634		
<b>Layer:</b>					
<b>Kind Code:</b>					
<b>Kind:</b>					
<b>Water Found Depth:</b>					
<b>Water Found Depth UOM:</b>		ft			
<b><u>Hole Diameter</u></b>					
<b>Hole ID:</b>			1006886633		
<b>Diameter:</b>			8.0		
<b>Depth From:</b>			0.0		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Depth To:		17.0			
Hole Depth UOM:		ft			
Hole Diameter UOM:		inch			
<b>Links</b>					
Bore Hole ID:	1006739959			Tag No:	A233975
Depth M:	5.1816			Contractor:	7241
Year Completed:	2017			Path:	729\7295790.pdf
Well Completed Dt:	2017/08/19			Latitude:	44.3372509495977
Audit No:	Z268130			Longitude:	-78.7257768965801

<a href="#">19</a>	1 of 1	NW/0.0	255.8 / 2.69	LINDSAY STRET SOUTH LINDSAY ON	WWIS
Well ID:	7295789			Flowing (Y/N):	
Construction Date:				Flow Rate:	
Use 1st:	Test Hole			Data Entry Status:	
Use 2nd:	Monitoring			Data Src:	
Final Well Status:	Monitoring and Test Hole			Date Received:	29-Sep-2017 00:00:00
Water Type:				Selected Flag:	TRUE
Casing Material:				Abandonment Rec:	
Audit No:	Z268129			Contractor:	7241
Tag:	A171274			Form Version:	7
Constructn Method:				Owner:	
Elevation (m):				County:	VICTORIA
Elevatn Reliabilty:				Lot:	
Depth to Bedrock:				Concession:	
Well Depth:				Concession Name:	
Overburden/Bedrock:				Easting NAD83:	
Pump Rate:				Northing NAD83:	
Static Water Level:				Zone:	
Clear/Cloudy:				UTM Reliability:	
Municipality:	LINDSAY TOWN				
Site Info:	WKQ-010300 A0-A01				

PDF URL (Map):

**Additional Detail(s) (Map)**

Well Completed Date:	2017/08/19
Year Completed:	2017
Depth (m):	4.572
Latitude:	44.3371682310292
Longitude:	-78.7261438676434
Path:	

**Bore Hole Information**

Bore Hole ID:	1006739956	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	681270.00
Code OB Desc:		North83:	4911837.00
Open Hole:		Org CS:	UTM83
Cluster Kind:		UTMRC:	4
Date Completed:	19-Aug-2017 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	wwr
Loc Method Desc:	on Water Well Record		
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		1006886577			
<b>Layer:</b>		1			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		06			
<b>Mat2 Desc:</b>		SILT			
<b>Mat3:</b>		28			
<b>Mat3 Desc:</b>		SAND			
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		15.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1006886587			
<b>Layer:</b>		3			
<b>Plug From:</b>					
<b>Plug To:</b>					
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1006886585			
<b>Layer:</b>		1			
<b>Plug From:</b>		15.0			
<b>Plug To:</b>		4.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1006886586			
<b>Layer:</b>		2			
<b>Plug From:</b>		4.0			
<b>Plug To:</b>		0.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		1006886584			
<b>Method Construction Code:</b>		D			
<b>Method Construction:</b>		Direct Push			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		1006886576			
<b>Casing No:</b>		0			
<b>Comment:</b>					

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

**Construction Record - Casing**

**Casing ID:** 1006886580  
**Layer:** 1  
**Material:** 5  
**Open Hole or Material:** PLASTIC  
**Depth From:** 0.0  
**Depth To:** 5.0  
**Casing Diameter:** 2.0  
**Casing Diameter UOM:** inch  
**Casing Depth UOM:** ft

**Construction Record - Screen**

**Screen ID:** 1006886581  
**Layer:** 1  
**Slot:** .1  
**Screen Top Depth:** 5.0  
**Screen End Depth:** 15.0  
**Screen Material:** 5  
**Screen Depth UOM:** ft  
**Screen Diameter UOM:** inch  
**Screen Diameter:** 2.25

**Water Details**

**Water ID:** 1006886579  
**Layer:**  
**Kind Code:**  
**Kind:**  
**Water Found Depth:**  
**Water Found Depth UOM:** ft

**Hole Diameter**

**Hole ID:** 1006886578  
**Diameter:** 8.0  
**Depth From:** 0.0  
**Depth To:** 15.0  
**Hole Depth UOM:** ft  
**Hole Diameter UOM:** inch

**Links**

<b>Bore Hole ID:</b> 1006739956	<b>Tag No:</b> A171274
<b>Depth M:</b> 4.572	<b>Contractor:</b> 7241
<b>Year Completed:</b> 2017	<b>Path:</b> 729\7295789.pdf
<b>Well Completed Dt:</b> 2017/08/19	<b>Latitude:</b> 44.3371682310292
<b>Audit No:</b> Z268129	<b>Longitude:</b> -78.7261438676434

<a href="#">20</a>	1 of 1	ESE/4.4	258.8 / 5.64	2376 TRANSCANADA HWY LINDSAY ON	WWIS
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<b>Well ID:</b> 7270540	<b>Flowing (Y/N):</b>
<b>Construction Date:</b>	<b>Flow Rate:</b>
<b>Use 1st:</b> Monitoring	<b>Data Entry Status:</b>
<b>Use 2nd:</b>	<b>Data Src:</b>
<b>Final Well Status:</b> Observation Wells	<b>Date Received:</b> 05-Sep-2016 00:00:00
<b>Water Type:</b>	<b>Selected Flag:</b> TRUE

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>	Z239753			<b>Contractor:</b>	7472
<b>Tag:</b>	A210484			<b>Form Version:</b>	7
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>				<b>Lot:</b>	
<b>Depth to Bedrock:</b>				<b>Concession:</b>	
<b>Well Depth:</b>				<b>Concession Name:</b>	
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>		OPS TOWNSHIP			
<b>Site Info:</b>					
<b>PDF URL (Map):</b>					
<b>Additional Detail(s) (Map)</b>					
<b>Well Completed Date:</b>		2016/06/17			
<b>Year Completed:</b>		2016			
<b>Depth (m):</b>					
<b>Latitude:</b>		44.3312202228243			
<b>Longitude:</b>		-78.7159132897977			
<b>Path:</b>					
<b>Bore Hole Information</b>					
<b>Bore Hole ID:</b>	1006230856			<b>Elevation:</b>	
<b>DP2BR:</b>				<b>Elevrc:</b>	
<b>Spatial Status:</b>				<b>Zone:</b>	17
<b>Code OB:</b>				<b>East83:</b>	682104.00
<b>Code OB Desc:</b>				<b>North83:</b>	4911199.00
<b>Open Hole:</b>				<b>Org CS:</b>	UTM83
<b>Cluster Kind:</b>				<b>UTMRC:</b>	4
<b>Date Completed:</b>	17-Jun-2016 00:00:00			<b>UTMRC Desc:</b>	margin of error : 30 m - 100 m
<b>Remarks:</b>				<b>Location Method:</b>	wwr
<b>Loc Method Desc:</b>		on Water Well Record			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b>Overburden and Bedrock</b>					
<b>Materials Interval</b>					
<b>Formation ID:</b>	1006269134				
<b>Layer:</b>					
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>					
<b>Most Common Material:</b>					
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>					
<b>Formation End Depth:</b>					
<b>Formation End Depth UOM:</b>		ft			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1006269142			
<b>Layer:</b>		2			
<b>Plug From:</b>		9.0			
<b>Plug To:</b>		20.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1006269141			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		9.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		1006269140			
<b>Method Construction Code:</b>		6			
<b>Method Construction:</b>		Boring			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		1006269133			
<b>Casing No:</b>		0			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		1006269137			
<b>Layer:</b>		1			
<b>Material:</b>		5			
<b>Open Hole or Material:</b>		PLASTIC			
<b>Depth From:</b>		0.0			
<b>Depth To:</b>		10.0			
<b>Casing Diameter:</b>		2.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Screen</u></b>					
<b>Screen ID:</b>		1006269138			
<b>Layer:</b>		1			
<b>Slot:</b>		10			
<b>Screen Top Depth:</b>		10.0			
<b>Screen End Depth:</b>		20.0			
<b>Screen Material:</b>		5			
<b>Screen Depth UOM:</b>		ft			
<b>Screen Diameter UOM:</b>		inch			
<b>Screen Diameter:</b>		2.5			
<b><u>Water Details</u></b>					
<b>Water ID:</b>		1006269136			
<b>Layer:</b>					

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

**Kind Code:**

**Kind:**

**Water Found Depth:**

**Water Found Depth UOM:** ft

**Hole Diameter**

**Hole ID:** 1006269135

**Diameter:** 6.0

**Depth From:** 0.0

**Depth To:** 20.0

**Hole Depth UOM:** ft

**Hole Diameter UOM:** inch

**Links**

**Bore Hole ID:** 1006230856

**Depth M:**

**Year Completed:** 2016

**Well Completed Dt:** 2016/06/17

**Audit No:** Z239753

**Tag No:** A210484

**Contractor:** 7472

**Path:** 727\7270540.pdf

**Latitude:** 44.3312202228243

**Longitude:** -78.7159132897977

[21](#) 1 of 1 W/6.6 251.5 / -1.61 354 LINDSAY ST. SOUTH lot 16 con 6 LINDSAY ON WWIS

**Well ID:** 7238851

**Construction Date:**

**Use 1st:**

**Use 2nd:**

**Final Well Status:** Alteration

**Water Type:**

**Casing Material:**

**Audit No:** Z203638

**Tag:** A170734

**Constructn Method:**

**Elevation (m):**

**Elevatn Reliabilty:**

**Depth to Bedrock:**

**Well Depth:**

**Overburden/Bedrock:**

**Pump Rate:**

**Static Water Level:**

**Clear/Cloudy:**

**Municipality:** OPS TOWNSHIP

**Site Info:**

**Flowing (Y/N):**

**Flow Rate:**

**Data Entry Status:**

**Data Src:**

**Date Received:** 23-Mar-2015 00:00:00

**Selected Flag:** TRUE

**Abandonment Rec:**

**Contractor:** 2662

**Form Version:** 7

**Owner:**

**County:** VICTORIA

**Lot:** 016

**Concession:** 06

**Concession Name:** CON

**Easting NAD83:**

**Northing NAD83:**

**Zone:**

**UTM Reliability:**

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/723\7238851.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/723\7238851.pdf)

**Additional Detail(s) (Map)**

**Well Completed Date:** 2015/02/03

**Year Completed:** 2015

**Depth (m):** 9.38784

**Latitude:** 44.333744826099

**Longitude:** -78.7233160438235

**Path:** 723\7238851.pdf

**Bore Hole Information**

**Bore Hole ID:** 1005316996

**DP2BR:**

**Spatial Status:**

**Elevation:**

**Elevrc:**

**Zone:** 17

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Code OB:</b>				<b>East83:</b>	681506.00
<b>Code OB Desc:</b>				<b>North83:</b>	4911463.00
<b>Open Hole:</b>				<b>Org CS:</b>	UTM83
<b>Cluster Kind:</b>				<b>UTMRC:</b>	4
<b>Date Completed:</b>	03-Feb-2015 00:00:00			<b>UTMRC Desc:</b>	margin of error : 30 m - 100 m
<b>Remarks:</b>				<b>Location Method:</b>	wwr
<b>Loc Method Desc:</b>		on Water Well Record			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		1005583280			
<b>Layer:</b>		1			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>					
<b>Most Common Material:</b>					
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		22.799999237060547			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		1005583281			
<b>Layer:</b>		2			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>					
<b>Most Common Material:</b>					
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		22.799999237060547			
<b>Formation End Depth:</b>		30.799999237060547			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		1005583288			
<b>Layer:</b>		1			
<b>Plug From:</b>		5.5			
<b>Plug To:</b>		1.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		1005583287			
<b>Layer:</b>		1			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Plug From:</b>					
<b>Plug To:</b>					
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1005583289			
<b>Layer:</b>		2			
<b>Plug From:</b>		1.0			
<b>Plug To:</b>		0.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		1005583286			
<b>Method Construction Code:</b>					
<b>Method Construction:</b>					
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		1005583279			
<b>Casing No:</b>		0			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		1005583284			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>		-2.5			
<b>Depth To:</b>		5.5			
<b>Casing Diameter:</b>		6.25			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Screen</u></b>					
<b>Screen ID:</b>		1005583285			
<b>Layer:</b>					
<b>Slot:</b>					
<b>Screen Top Depth:</b>					
<b>Screen End Depth:</b>					
<b>Screen Material:</b>					
<b>Screen Depth UOM:</b>		ft			
<b>Screen Diameter UOM:</b>		inch			
<b>Screen Diameter:</b>					
<b><u>Water Details</u></b>					
<b>Water ID:</b>		1005583283			
<b>Layer:</b>					
<b>Kind Code:</b>					
<b>Kind:</b>					
<b>Water Found Depth:</b>					
<b>Water Found Depth UOM:</b>		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b><u>Hole Diameter</u></b>					
Hole ID:	1005583282				
Diameter:					
Depth From:					
Depth To:					
Hole Depth UOM:	ft				
Hole Diameter UOM:	inch				
<b><u>Links</u></b>					
Bore Hole ID:	1005316996			Tag No:	A170734
Depth M:	9.38784			Contractor:	2662
Year Completed:	2015			Path:	723\7238851.pdf
Well Completed Dt:	2015/02/03			Latitude:	44.333744826099
Audit No:	Z203638			Longitude:	-78.7233160438235
<a href="#">22</a>	1 of 2	WNW/8.7	255.5 / 2.39	354 LONDSAY STREET SOUTH LINDSAY ON	WWIS
Well ID:	7270525			Flowing (Y/N):	
Construction Date:				Flow Rate:	
Use 1st:	Monitoring			Data Entry Status:	
Use 2nd:				Data Src:	
Final Well Status:	Observation Wells			Date Received:	05-Sep-2016 00:00:00
Water Type:				Selected Flag:	TRUE
Casing Material:				Abandonment Rec:	
Audit No:	Z239731			Contractor:	7472
Tag:	A210492			Form Version:	7
Constructn Method:				Owner:	
Elevation (m):				County:	VICTORIA
Elevatn Reliabilty:				Lot:	
Depth to Bedrock:				Concession:	
Well Depth:				Concession Name:	
Overburden/Bedrock:				Easting NAD83:	
Pump Rate:				Northing NAD83:	
Static Water Level:				Zone:	
Clear/Cloudy:				UTM Reliability:	
Municipality:	OPS TOWNSHIP				
Site Info:					
PDF URL (Map):					
<b><u>Additional Detail(s) (Map)</u></b>					
Well Completed Date:	2016/06/17				
Year Completed:	2016				
Depth (m):					
Latitude:	44.3365570107686				
Longitude:	-78.7261925879897				
Path:					
<b><u>Bore Hole Information</u></b>					
Bore Hole ID:	1006230625			Elevation:	
DP2BR:				Elevrc:	
Spatial Status:				Zone:	17
Code OB:				East83:	681268.00
Code OB Desc:				North83:	4911769.00
Open Hole:				Org CS:	UTM83
Cluster Kind:				UTMRC:	4
Date Completed:	17-Jun-2016 00:00:00			UTMRC Desc:	margin of error : 30 m - 100 m

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Remarks:</b>				<b>Location Method:</b>	WWF
<b>Loc Method Desc:</b>		on Water Well Record			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		1006269012			
<b>Layer:</b>					
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>					
<b>Most Common Material:</b>					
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>					
<b>Formation End Depth:</b>					
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		1006269019			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		9.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		1006269020			
<b>Layer:</b>		2			
<b>Plug From:</b>		9.0			
<b>Plug To:</b>		20.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well</u></b>					
<b><u>Use</u></b>					
<b>Method Construction ID:</b>		1006269018			
<b>Method Construction Code:</b>		6			
<b>Method Construction:</b>		Boring			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		1006269011			
<b>Casing No:</b>		0			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Casing ID:</b> 1006269015					
<b>Layer:</b> 1					
<b>Material:</b> 5					
<b>Open Hole or Material:</b> PLASTIC					
<b>Depth From:</b> 0.0					
<b>Depth To:</b> 10.0					
<b>Casing Diameter:</b> 2.0					
<b>Casing Diameter UOM:</b> inch					
<b>Casing Depth UOM:</b> ft					
<b><u>Construction Record - Screen</u></b>					
<b>Screen ID:</b> 1006269016					
<b>Layer:</b> 1					
<b>Slot:</b> 10					
<b>Screen Top Depth:</b> 10.0					
<b>Screen End Depth:</b> 20.0					
<b>Screen Material:</b> 5					
<b>Screen Depth UOM:</b> ft					
<b>Screen Diameter UOM:</b> inch					
<b>Screen Diameter:</b> 2.5					
<b><u>Water Details</u></b>					
<b>Water ID:</b> 1006269014					
<b>Layer:</b>					
<b>Kind Code:</b>					
<b>Kind:</b>					
<b>Water Found Depth:</b>					
<b>Water Found Depth UOM:</b> ft					
<b><u>Hole Diameter</u></b>					
<b>Hole ID:</b> 1006269013					
<b>Diameter:</b> 6.0					
<b>Depth From:</b> 0.0					
<b>Depth To:</b> 20.0					
<b>Hole Depth UOM:</b> ft					
<b>Hole Diameter UOM:</b> inch					
<b><u>Links</u></b>					
<b>Bore Hole ID:</b> 1006230625		<b>Tag No:</b> A210492			
<b>Depth M:</b>		<b>Contractor:</b> 7472			
<b>Year Completed:</b> 2016		<b>Path:</b> 727\7270525.pdf			
<b>Well Completed Dt:</b> 2016/06/17		<b>Latitude:</b> 44.3365570107686			
<b>Audit No:</b> Z239731		<b>Longitude:</b> -78.7261925879897			
<a href="#">22</a>	2 of 2	WNW/8.7	255.5 / 2.39	357 LINDSAY STREET SOUTH LINDSAY ON	WWIS
<b>Well ID:</b> 7270526					
<b>Construction Date:</b>					
<b>Use 1st:</b>					
<b>Use 2nd:</b>					
<b>Final Well Status:</b> 0					
<b>Water Type:</b>					
<b>Casing Material:</b>					
<b>Audit No:</b> Z239750					
<b>Tag:</b> A206300					
<b>Constructn Method:</b>					
<b>Elevation (m):</b>					
<b>Flowing (Y/N):</b>					
<b>Flow Rate:</b>					
<b>Data Entry Status:</b>					
<b>Data Src:</b>					
<b>Date Received:</b> 05-Sep-2016 00:00:00					
<b>Selected Flag:</b> TRUE					
<b>Abandonment Rec:</b>					
<b>Contractor:</b> 7472					
<b>Form Version:</b> 7					
<b>Owner:</b>					
<b>County:</b> VICTORIA					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Elevatn Reliability:</b> <b>Depth to Bedrock:</b> <b>Well Depth:</b> <b>Overburden/Bedrock:</b> <b>Pump Rate:</b> <b>Static Water Level:</b> <b>Clear/Cloudy:</b> <b>Municipality:</b> <b>Site Info:</b>		OPS TOWNSHIP		<b>Lot:</b> <b>Concession:</b> <b>Concession Name:</b> <b>Easting NAD83:</b> <b>Northing NAD83:</b> <b>Zone:</b> <b>UTM Reliability:</b>	
<b>PDF URL (Map):</b>					
<b><u>Additional Detail(s) (Map)</u></b>					
<b>Well Completed Date:</b>		2016/06/17			
<b>Year Completed:</b>		2016			
<b>Depth (m):</b>					
<b>Latitude:</b>		44.3365570107686			
<b>Longitude:</b>		-78.7261925879897			
<b>Path:</b>					
<b><u>Bore Hole Information</u></b>					
<b>Bore Hole ID:</b>		1006230628		<b>Elevation:</b>	
<b>DP2BR:</b>				<b>Elevrc:</b>	
<b>Spatial Status:</b>				<b>Zone:</b>	
<b>Code OB:</b>				17	
<b>Code OB Desc:</b>				<b>East83:</b>	
<b>Open Hole:</b>				681268.00	
<b>Cluster Kind:</b>				<b>North83:</b>	
<b>Date Completed:</b>		17-Jun-2016 00:00:00		4911769.00	
<b>Remarks:</b>				<b>Org CS:</b>	
<b>Loc Method Desc:</b>		on Water Well Record		UTM83	
<b>Elevrc Desc:</b>				<b>UTMRC:</b>	
<b>Location Source Date:</b>				4	
<b>Improvement Location Source:</b>				<b>UTMRC Desc:</b>	
<b>Improvement Location Method:</b>				margin of error : 30 m - 100 m	
<b>Source Revision Comment:</b>				<b>Location Method:</b>	
<b>Supplier Comment:</b>				wwr	
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		1006269022			
<b>Layer:</b>					
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>					
<b>Most Common Material:</b>					
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>					
<b>Formation End Depth:</b>					
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		1006269028			
<b>Layer:</b>		1			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		5.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1006269029			
<b>Layer:</b>		2			
<b>Plug From:</b>		5.0			
<b>Plug To:</b>		16.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		1006269027			
<b>Method Construction Code:</b>					
<b>Method Construction:</b>					
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		1006269021			
<b>Casing No:</b>		0			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		1006269025			
<b>Layer:</b>		1			
<b>Material:</b>		5			
<b>Open Hole or Material:</b>		PLASTIC			
<b>Depth From:</b>		0.0			
<b>Depth To:</b>		6.0			
<b>Casing Diameter:</b>		2.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Screen</u></b>					
<b>Screen ID:</b>		1006269026			
<b>Layer:</b>		1			
<b>Slot:</b>		10			
<b>Screen Top Depth:</b>		6.0			
<b>Screen End Depth:</b>		16.0			
<b>Screen Material:</b>		5			
<b>Screen Depth UOM:</b>		ft			
<b>Screen Diameter UOM:</b>		inch			
<b>Screen Diameter:</b>		2.5			
<b><u>Water Details</u></b>					
<b>Water ID:</b>		1006269024			
<b>Layer:</b>					
<b>Kind Code:</b>					
<b>Kind:</b>					
<b>Water Found Depth:</b>					
<b>Water Found Depth UOM:</b>		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b><u>Hole Diameter</u></b>					
Hole ID:	1006269023				
Diameter:	6.0				
Depth From:	0.0				
Depth To:	16.0				
Hole Depth UOM:	ft				
Hole Diameter UOM:	inch				
<b><u>Links</u></b>					
Bore Hole ID:	1006230628			Tag No:	A206300
Depth M:				Contractor:	7472
Year Completed:	2016			Path:	727\7270526.pdf
Well Completed Dt:	2016/06/17			Latitude:	44.3365570107686
Audit No:	Z239750			Longitude:	-78.7261925879897
<a href="#">23</a>	1 of 1	WNW/9.7	254.8 / 1.66	MOYNES FORD SALES LIMITED 344 LINDSAY STREET S. LINDSAY ON K9V 4R4	EASR
Approval No:	R-001-4230983403			MOE District:	North Bay
Status:	REGISTERED			Municipality:	LINDSAY
Date:	December, 21 2021			Latitude:	44.33388889
Record Type:	EASR			Longitude:	-78.72416667
Link Source:	MOFA			Geometry X:	-8763534.1465
Project Type:	Automotive Refinishing Facility			Geometry Y:	5517258.487000003
Full Address:					
Approval Type:	EASR-Automotive Refinishing Facility				
SWP Area Name:					
PDF URL:	<a href="http://www.accessenvironment.ene.gov.on.ca/AEWeb/ae/ViewDocument.action?documentRefID=2547655">http://www.accessenvironment.ene.gov.on.ca/AEWeb/ae/ViewDocument.action?documentRefID=2547655</a>				
PDF Site Location:					
<a href="#">24</a>	1 of 1	WNW/13.2	251.9 / -1.27	The Lindsay Cemetery Corporation 347 Lindsay Street South Lindsay ON K9V 4R4	GEN
Generator No:	ON6942190				
SIC Code:					
SIC Description:					
Approval Years:	As of Oct 2022				
PO Box No:					
Country:	Canada				
Status:	Registered				
Co Admin:					
Choice of Contact:					
Phone No Admin:					
Contaminated Facility:					
MHSW Facility:					
<b><u>Detail(s)</u></b>					
Waste Class:	312 P				
Waste Class Name:	PATHOLOGICAL WASTES				
Waste Class:	252 L				
Waste Class Name:	WASTE OILS & LUBRICANTS				
<a href="#">25</a>	1 of 1	WNW/15.8	250.5 / -2.63	lot 16 con 6 ON	WWIS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Well ID:</b>	6402597			<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>	Commerical			<b>Data Entry Status:</b>	
<b>Use 2nd:</b>	0			<b>Data Src:</b>	1
<b>Final Well Status:</b>	Water Supply			<b>Date Received:</b>	03-Jan-1961 00:00:00
<b>Water Type:</b>				<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>				<b>Contractor:</b>	2518
<b>Tag:</b>				<b>Form Version:</b>	1
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliability:</b>				<b>Lot:</b>	016
<b>Depth to Bedrock:</b>				<b>Concession:</b>	06
<b>Well Depth:</b>				<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>		OPS TOWNSHIP			
<b>Site Info:</b>					

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/640\6402597.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402597.pdf)

**Additional Detail(s) (Map)**

**Well Completed Date:** 1960/11/29  
**Year Completed:** 1960  
**Depth (m):** 7.0104  
**Latitude:** 44.3340586798466  
**Longitude:** -78.7246083878918  
**Path:** 640\6402597.pdf

**Bore Hole Information**

<b>Bore Hole ID:</b>	10437627	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681402.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911495.00
<b>Open Hole:</b>		<b>Org CS:</b>	
<b>Cluster Kind:</b>		<b>UTMRC:</b>	5
<b>Date Completed:</b>	29-Nov-1960 00:00:00	<b>UTMRC Desc:</b>	margin of error : 100 m - 300 m
<b>Remarks:</b>		<b>Location Method:</b>	p5
<b>Loc Method Desc:</b>	Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			
<b>Supplier Comment:</b>			

**Overburden and Bedrock  
Materials Interval**

**Formation ID:** 932494878  
**Layer:** 3  
**Color:**  
**General Color:**  
**Mat1:** 11  
**Most Common Material:** GRAVEL  
**Mat2:**  
**Mat2 Desc:**

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		22.0			
<b>Formation End Depth:</b>		23.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494876			
<b>Layer:</b>		1			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		11			
<b>Most Common Material:</b>		GRAVEL			
<b>Mat2:</b>		01			
<b>Mat2 Desc:</b>		FILL			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		5.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494877			
<b>Layer:</b>		2			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		12			
<b>Mat2 Desc:</b>		STONES			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		5.0			
<b>Formation End Depth:</b>		22.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well</u></b>					
<b><u>Use</u></b>					
<b>Method Construction ID:</b>		966402597			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10986197			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714849			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Depth To:		23.0			
Casing Diameter:		6.0			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			

**Results of Well Yield Testing**

Pumping Test Method Desc:	PUMP
Pump Test ID:	996402597
Pump Set At:	
Static Level:	8.0
Final Level After Pumping:	18.0
Recommended Pump Depth:	8.0
Pumping Rate:	4.0
Flowing Rate:	
Recommended Pump Rate:	3.0
Levels UOM:	ft
Rate UOM:	GPM
Water State After Test Code:	1
Water State After Test:	CLEAR
Pumping Test Method:	1
Pumping Duration HR:	2
Pumping Duration MIN:	0
Flowing:	No

**Water Details**

Water ID:	933924557
Layer:	1
Kind Code:	1
Kind:	FRESH
Water Found Depth:	23.0
Water Found Depth UOM:	ft

**Links**

Bore Hole ID:	10437627	Tag No:	
Depth M:	7.0104	Contractor:	2518
Year Completed:	1960	Path:	6406402597.pdf
Well Completed Dt:	1960/11/29	Latitude:	44.3340586798466
Audit No:		Longitude:	-78.7246083878918

<a href="#">26</a>	1 of 1	SW/17.4	253.8 / 0.66	lot 16 con 6 ON	WWIS
Well ID:	7349956	Flowing (Y/N):			
Construction Date:		Flow Rate:			
Use 1st:		Data Entry Status:	Yes		
Use 2nd:		Data Src:			
Final Well Status:		Date Received:	20-Dec-2019 00:00:00		
Water Type:		Selected Flag:	TRUE		
Casing Material:		Abandonment Rec:			
Audit No:	C43345	Contractor:	7654		
Tag:	A253328	Form Version:	8		
Constructn Method:		Owner:			
Elevation (m):		County:	VICTORIA		
Elevatn Reliabilty:		Lot:	016		
Depth to Bedrock:		Concession:	06		
Well Depth:		Concession Name:	CON		
Overburden/Bedrock:		Easting NAD83:			
Pump Rate:		Northing NAD83:			
Static Water Level:		Zone:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Clear/Cloudy:</b> <b>Municipality:</b> <b>Site Info:</b>		OPS TOWNSHIP		<b>UTM Reliability:</b>	
<b>PDF URL (Map):</b>					
<b><u>Additional Detail(s) (Map)</u></b>					
<b>Well Completed Date:</b> <b>Year Completed:</b> <b>Depth (m):</b> <b>Latitude:</b> 44.3307429547683 <b>Longitude:</b> -78.7231186723112 <b>Path:</b>					
<b><u>Bore Hole Information</u></b>					
<b>Bore Hole ID:</b> 1007815654 <b>DP2BR:</b> <b>Spatial Status:</b> <b>Code OB:</b> <b>Code OB Desc:</b> <b>Open Hole:</b> <b>Cluster Kind:</b> <b>Date Completed:</b> <b>Remarks:</b> <b>Loc Method Desc:</b> on Water Well Record <b>Elevrc Desc:</b> <b>Location Source Date:</b> <b>Improvement Location Source:</b> <b>Improvement Location Method:</b> <b>Source Revision Comment:</b> <b>Supplier Comment:</b>		<b>Elevation:</b> <b>Elevrc:</b> <b>Zone:</b> 17 <b>East83:</b> 681531.00 <b>North83:</b> 4911130.00 <b>Org CS:</b> UTM83 <b>UTMRC:</b> 4 <b>UTMRC Desc:</b> margin of error : 30 m - 100 m <b>Location Method:</b> wwr			
<b><u>Links</u></b>					
<b>Bore Hole ID:</b> 1007815654 <b>Depth M:</b> <b>Year Completed:</b> <b>Well Completed Dt:</b> <b>Audit No:</b> C43345		<b>Tag No:</b> A253328 <b>Contractor:</b> 7654 <b>Path:</b> <b>Latitude:</b> 44.3307429547683 <b>Longitude:</b> -78.7231186723112			
<a href="#">27</a>	1 of 12	W/23.1	250.5 / -2.67	LINDSAY CEMETERY COMPANY RR #4, RIVERSIDE CEMETERY LINDSAY TOWN ON	CA
<b>Certificate #:</b> 8-4179-96- <b>Application Year:</b> 96 <b>Issue Date:</b> 11/25/1996 <b>Approval Type:</b> Industrial air <b>Status:</b> Approved <b>Application Type:</b> <b>Client Name:</b> <b>Client Address:</b> <b>Client City:</b> <b>Client Postal Code:</b> <b>Project Description:</b> FOSTER CREMATORIA UNIT <b>Contaminants:</b> <b>Emission Control:</b>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<a href="#">27</a>	2 of 12	W/23.1	250.5 / -2.67	Lindsay Cemetery Corporation 347 Lindsay Street South Lindsay ON K9V 4R4	GEN
<b>Generator No:</b> <b>SIC Code:</b> <b>SIC Description:</b> <b>Approval Years:</b> <b>PO Box No:</b> <b>Country:</b> <b>Status:</b> <b>Co Admin:</b> <b>Choice of Contact:</b> <b>Phone No Admin:</b> <b>Contaminated Facility:</b> <b>MHSW Facility:</b>		ON7356598 812220 Cemeteries and Crematoria 07,08			
<b><u>Detail(s)</u></b>					
<b>Waste Class:</b>		242			
<b>Waste Class Name:</b>		HALOGENATED PESTICIDES			
<b>Waste Class:</b>		211			
<b>Waste Class Name:</b>		AROMATIC SOLVENTS			
<b>Waste Class:</b>		113			
<b>Waste Class Name:</b>		ACID WASTE - OTHER METALS			
<b>Waste Class:</b>		145			
<b>Waste Class Name:</b>		PAINT/PIGMENT/COATING RESIDUES			
<b>Waste Class:</b>		331			
<b>Waste Class Name:</b>		WASTE COMPRESSED GASES			
<b>Waste Class:</b>		252			
<b>Waste Class Name:</b>		WASTE OILS & LUBRICANTS			
<a href="#">27</a>	3 of 12	W/23.1	250.5 / -2.67	Lindsay Cemetery Company 347 Lindsay St S Kawartha Lakes ON	CA
<b>Certificate #:</b> <b>Application Year:</b> <b>Issue Date:</b> <b>Approval Type:</b> <b>Status:</b> <b>Application Type:</b> <b>Client Name:</b> <b>Client Address:</b> <b>Client City:</b> <b>Client Postal Code:</b> <b>Project Description:</b> <b>Contaminants:</b> <b>Emission Control:</b>		8-4179-96-006 2011 10/25/2011 Air Approved			
<a href="#">27</a>	4 of 12	W/23.1	250.5 / -2.67	Lindsay Cemetery Corporation 347 Lindsay Street South Lindsay ON K9V 4R4	GEN
<b>Generator No:</b> <b>SIC Code:</b> <b>SIC Description:</b> <b>Approval Years:</b>		ON7356598 812220 Cemeteries and Crematoria 2009			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>PO Box No:</b> <b>Country:</b> <b>Status:</b> <b>Co Admin:</b> <b>Choice of Contact:</b> <b>Phone No Admin:</b> <b>Contaminated Facility:</b> <b>MHSW Facility:</b>					
<b><u>Detail(s)</u></b>					
<b>Waste Class:</b>		113			
<b>Waste Class Name:</b>		ACID WASTE - OTHER METALS			
<b>Waste Class:</b>		145			
<b>Waste Class Name:</b>		PAINT/PIGMENT/COATING RESIDUES			
<b>Waste Class:</b>		211			
<b>Waste Class Name:</b>		AROMATIC SOLVENTS			
<b>Waste Class:</b>		242			
<b>Waste Class Name:</b>		HALOGENATED PESTICIDES			
<b>Waste Class:</b>		252			
<b>Waste Class Name:</b>		WASTE OILS & LUBRICANTS			
<b>Waste Class:</b>		331			
<b>Waste Class Name:</b>		WASTE COMPRESSED GASES			

<a href="#">27</a>	5 of 12	W/23.1	250.5 / -2.67	Lindsay Cemetery Corporation 347 Lindsay Street South Lindsay ON K9V 4R4	GEN
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**Generator No:** ON7356598  
**SIC Code:** 812220  
**SIC Description:**  
**Approval Years:** 2011  
**PO Box No:**  
**Country:**  
**Status:**  
**Co Admin:**  
**Choice of Contact:**  
**Phone No Admin:**  
**Contaminated Facility:**  
**MHSW Facility:**

**Detail(s)**

**Waste Class:** 242  
**Waste Class Name:** HALOGENATED PESTICIDES

**Waste Class:** 331  
**Waste Class Name:** WASTE COMPRESSED GASES

**Waste Class:** 145  
**Waste Class Name:** PAINT/PIGMENT/COATING RESIDUES

**Waste Class:** 252  
**Waste Class Name:** WASTE OILS & LUBRICANTS

**Waste Class:** 113  
**Waste Class Name:** ACID WASTE - OTHER METALS

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Waste Class:</b> <b>Waste Class Name:</b>		211 AROMATIC SOLVENTS			
<a href="#">27</a>	6 of 12	W/23.1	250.5 / -2.67	<b>The Lindsay Cemetery Corporation</b> 347 Lindsay Street South Kawartha Lakes K9V 4R4 CITY OF KAWARTHA LAKES ON	<b>EBR</b>
<b>EBR Registry No:</b>		012-1070		<b>Decision Posted:</b>	
<b>Ministry Ref No:</b>		0695-9FFJVZ		<b>Exception Posted:</b>	
<b>Notice Type:</b>		Instrument Decision		<b>Section:</b>	
<b>Notice Stage:</b>				<b>Act 1:</b>	
<b>Notice Date:</b>		November 04, 2014		<b>Act 2:</b>	
<b>Proposal Date:</b>		February 11, 2014		<b>Site Location Map:</b>	
<b>Year:</b>		2014			
<b>Instrument Type:</b>		(EPA Part II.1-air) - Environmental Compliance Approval (project type: air)			
<b>Off Instrument Name:</b>					
<b>Posted By:</b>					
<b>Company Name:</b>		The Lindsay Cemetery Corporation			
<b>Site Address:</b>					
<b>Location Other:</b>					
<b>Proponent Name:</b>					
<b>Proponent Address:</b>		347 Lindsay Street South, Kawartha Lakes Ontario, Canada K9V 4R4			
<b>Comment Period:</b>					
<b>URL:</b>					
<b>Site Location Details:</b>					
347 Lindsay Street South Kawartha Lakes K9V 4R4 CITY OF KAWARTHA LAKES					
<a href="#">27</a>	7 of 12	W/23.1	250.5 / -2.67	<b>The Lindsay Cemetery Corporation</b> 347 Lindsay Street South Lindsay ON	<b>GEN</b>
<b>Generator No:</b>		ON6942190			
<b>SIC Code:</b>		812220			
<b>SIC Description:</b>					
<b>Approval Years:</b>		2013			
<b>PO Box No:</b>					
<b>Country:</b>					
<b>Status:</b>					
<b>Co Admin:</b>					
<b>Choice of Contact:</b>					
<b>Phone No Admin:</b>					
<b>Contaminated Facility:</b>					
<b>MHSW Facility:</b>					
<b>Detail(s)</b>					
<b>Waste Class:</b> <b>Waste Class Name:</b>		252 WASTE OILS & LUBRICANTS			
<a href="#">27</a>	8 of 12	W/23.1	250.5 / -2.67	<b>The Lindsay Cemetery Corporation</b> 347 Lindsay Street South Lot 17, Concession 5 Kawartha Lakes ON K9V4R4	<b>ECA</b>
<b>Approval No:</b>		7720-9QDPMM		<b>MOE District:</b>	
<b>Approval Date:</b>		10/30/14		<b>City:</b>	
<b>Status:</b>		Approved		<b>Longitude:</b>	
<b>Record Type:</b>				<b>Latitude:</b>	
				Kawartha Lakes	
				-78.7252777777777765777500462718307971	
				954345703125	
				44.33472222222222569598670816048979759	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				21630859375	
<b>Link Source:</b>				<b>Geometry X:</b>	
<b>SWP Area Name:</b>				<b>Geometry Y:</b>	
<b>Approval Type:</b>					
<b>Project Type:</b>		Air/Noise			
<b>Business Name:</b>		The Lindsay Cemetery Corporation			
<b>Address:</b>					
<b>Full Address:</b>		347 Lindsay Street South Lot 17, Concession 5, former Ops Township Kawartha Lakes City, K9V4R4			
<b>Full PDF Link:</b>					
<b>PDF Site Location:</b>					

<a href="#">27</a>	9 of 12	W/23.1	250.5 / -2.67	<b>The Lindsay Cemetery Corporation 347 Lindsay Street South Lindsay ON K9V 4R4</b>	GEN
<b>Generator No:</b>		ON6942190			
<b>SIC Code:</b>		812220			
<b>SIC Description:</b>		812220			
<b>Approval Years:</b>		2016			
<b>PO Box No:</b>					
<b>Country:</b>		Canada			
<b>Status:</b>					
<b>Co Admin:</b>					
<b>Choice of Contact:</b>		CO_OFFICIAL			
<b>Phone No Admin:</b>					
<b>Contaminated Facility:</b>		No			
<b>MHSW Facility:</b>		No			

Detail(s)

**Waste Class:** 252  
**Waste Class Name:** WASTE OILS & LUBRICANTS

<a href="#">27</a>	10 of 12	W/23.1	250.5 / -2.67	<b>The Lindsay Cemetery Corporation 347 Lindsay Street South Lindsay ON K9V 4R4</b>	GEN
<b>Generator No:</b>		ON6942190			
<b>SIC Code:</b>		812220			
<b>SIC Description:</b>		812220			
<b>Approval Years:</b>		2015			
<b>PO Box No:</b>					
<b>Country:</b>		Canada			
<b>Status:</b>					
<b>Co Admin:</b>					
<b>Choice of Contact:</b>		CO_OFFICIAL			
<b>Phone No Admin:</b>					
<b>Contaminated Facility:</b>		No			
<b>MHSW Facility:</b>		No			

Detail(s)

**Waste Class:** 252  
**Waste Class Name:** WASTE OILS & LUBRICANTS

<a href="#">27</a>	11 of 12	W/23.1	250.5 / -2.67	<b>The Lindsay Cemetery Corporation 347 Lindsay Street South Lindsay ON K9V 4R4</b>	GEN
<b>Generator No:</b>		ON6942190			
<b>SIC Code:</b>		812220			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>SIC Description:</b>		812220			
<b>Approval Years:</b>		2014			
<b>PO Box No:</b>					
<b>Country:</b>		Canada			
<b>Status:</b>					
<b>Co Admin:</b>					
<b>Choice of Contact:</b>		CO_OFFICIAL			
<b>Phone No Admin:</b>					
<b>Contaminated Facility:</b>		No			
<b>MHSW Facility:</b>		No			
<b><u>Detail(s)</u></b>					
<b>Waste Class:</b>		252			
<b>Waste Class Name:</b>		WASTE OILS & LUBRICANTS			

<a href="#">27</a>	12 of 12	W/23.1	250.5 / -2.67	The Lindsay Cemetery Corporation 347 Lindsay Street South Lindsay ON K9V 4R4	GEN
<b>Generator No:</b>		ON6942190			
<b>SIC Code:</b>					
<b>SIC Description:</b>					
<b>Approval Years:</b>		As of Dec 2018			
<b>PO Box No:</b>					
<b>Country:</b>		Canada			
<b>Status:</b>		Registered			
<b>Co Admin:</b>					
<b>Choice of Contact:</b>					
<b>Phone No Admin:</b>					
<b>Contaminated Facility:</b>					
<b>MHSW Facility:</b>					
<b><u>Detail(s)</u></b>					
<b>Waste Class:</b>		252 L			
<b>Waste Class Name:</b>		Waste crankcase oils and lubricants			

<a href="#">28</a>	1 of 1	WSW/32.6	252.9 / -0.24	LINDSAY ST lot 16 con 6 LINDSAY ON	WWIS
<b>Well ID:</b>		7162140		<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>		Commerical		<b>Data Entry Status:</b>	
<b>Use 2nd:</b>				<b>Data Src:</b>	
<b>Final Well Status:</b>		Water Supply		<b>Date Received:</b> 19-Apr-2011 00:00:00	
<b>Water Type:</b>				<b>Selected Flag:</b> TRUE	
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>		Z125796		<b>Contractor:</b> 2662	
<b>Tag:</b>		A111014		<b>Form Version:</b> 7	
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b> VICTORIA	
<b>Elevatn Reliabilty:</b>				<b>Lot:</b> 016	
<b>Depth to Bedrock:</b>				<b>Concession:</b> 06	
<b>Well Depth:</b>				<b>Concession Name:</b> CON	
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>		OPS TOWNSHIP			
<b>Site Info:</b>					
<b>PDF URL (Map):</b>		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/716\7162140.pdf			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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**Additional Detail(s) (Map)**

Well Completed Date: 2011/03/01  
Year Completed: 2011  
Depth (m): 11.8872  
Latitude: 44.3323072373027  
Longitude: -78.7234594894237  
Path: 716\7162140.pdf

**Bore Hole Information**

<b>Bore Hole ID:</b>	1003502062	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681499.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911303.00
<b>Open Hole:</b>		<b>Org CS:</b>	UTM83
<b>Cluster Kind:</b>		<b>UTMRC:</b>	3
<b>Date Completed:</b>	01-Mar-2011 00:00:00	<b>UTMRC Desc:</b>	margin of error : 10 - 30 m
<b>Remarks:</b>		<b>Location Method:</b>	wwr
<b>Loc Method Desc:</b>	on Water Well Record		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			
<b>Supplier Comment:</b>			

**Overburden and Bedrock**

**Materials Interval**

**Formation ID:** 1003882502  
**Layer:** 3  
**Color:** 2  
**General Color:** GREY  
**Mat1:** 05  
**Most Common Material:** CLAY  
**Mat2:** 12  
**Mat2 Desc:** STONES  
**Mat3:**  
**Mat3 Desc:**  
**Formation Top Depth:** 16.0  
**Formation End Depth:** 20.0  
**Formation End Depth UOM:** ft

**Overburden and Bedrock**

**Materials Interval**

**Formation ID:** 1003882500  
**Layer:** 1  
**Color:** 6  
**General Color:** BROWN  
**Mat1:** 01  
**Most Common Material:** FILL  
**Mat2:**  
**Mat2 Desc:**  
**Mat3:**  
**Mat3 Desc:**  
**Formation Top Depth:** 0.0  
**Formation End Depth:** 2.0  
**Formation End Depth UOM:** ft

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Overburden and Bedrock  
Materials Interval

Formation ID: 1003882504  
 Layer: 5  
 Color: 2  
 General Color: GREY  
 Mat1: 15  
 Most Common Material: LIMESTONE  
 Mat2:  
 Mat2 Desc:  
 Mat3:  
 Mat3 Desc:  
 Formation Top Depth: 30.0  
 Formation End Depth: 39.0  
 Formation End Depth UOM: ft

Overburden and Bedrock  
Materials Interval

Formation ID: 1003882501  
 Layer: 2  
 Color: 6  
 General Color: BROWN  
 Mat1: 05  
 Most Common Material: CLAY  
 Mat2: 12  
 Mat2 Desc: STONES  
 Mat3: 81  
 Mat3 Desc: SANDY  
 Formation Top Depth: 2.0  
 Formation End Depth: 16.0  
 Formation End Depth UOM: ft

Overburden and Bedrock  
Materials Interval

Formation ID: 1003882503  
 Layer: 4  
 Color: 2  
 General Color: GREY  
 Mat1: 05  
 Most Common Material: CLAY  
 Mat2: 11  
 Mat2 Desc: GRAVEL  
 Mat3:  
 Mat3 Desc:  
 Formation Top Depth: 20.0  
 Formation End Depth: 30.0  
 Formation End Depth UOM: ft

Annular Space/Abandonment  
Sealing Record

Plug ID: 1003882539  
 Layer: 1  
 Plug From:  
 Plug To:  
 Plug Depth UOM: ft

Annular Space/Abandonment

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		1003882540			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		20.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		1003882538			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		1003882498			
<b>Casing No:</b>		0			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		1003882508			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>		-2.0			
<b>Depth To:</b>		30.0			
<b>Casing Diameter:</b>		6.25			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		1003882509			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>		30.0			
<b>Depth To:</b>		39.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Screen</u></b>					
<b>Screen ID:</b>		1003882510			
<b>Layer:</b>					
<b>Slot:</b>					
<b>Screen Top Depth:</b>					
<b>Screen End Depth:</b>					
<b>Screen Material:</b>					
<b>Screen Depth UOM:</b>		ft			
<b>Screen Diameter UOM:</b>		inch			
<b>Screen Diameter:</b>					
<b><u>Results of Well Yield Testing</u></b>					

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><i>Pumping Test Method Desc:</i></b>					
<b><i>Pump Test ID:</i></b>		1003882499			
<b><i>Pump Set At:</i></b>		35.0			
<b><i>Static Level:</i></b>		9.300000190734863			
<b><i>Final Level After Pumping:</i></b>		13.399999618530273			
<b><i>Recommended Pump Depth:</i></b>		35.0			
<b><i>Pumping Rate:</i></b>					
<b><i>Flowing Rate:</i></b>					
<b><i>Recommended Pump Rate:</i></b>					
<b><i>Levels UOM:</i></b>		ft			
<b><i>Rate UOM:</i></b>		GPM			
<b><i>Water State After Test Code:</i></b>		1			
<b><i>Water State After Test:</i></b>		CLEAR			
<b><i>Pumping Test Method:</i></b>		0			
<b><i>Pumping Duration HR:</i></b>		6			
<b><i>Pumping Duration MIN:</i></b>					
<b><i>Flowing:</i></b>					
 <b><u>Draw Down &amp; Recovery</u></b>					
<b><i>Pump Test Detail ID:</i></b>		1003882511			
<b><i>Test Type:</i></b>		Draw Down			
<b><i>Test Duration:</i></b>		1			
<b><i>Test Level:</i></b>		9.899999618530273			
<b><i>Test Level UOM:</i></b>		ft			
 <b><u>Draw Down &amp; Recovery</u></b>					
<b><i>Pump Test Detail ID:</i></b>		1003882518			
<b><i>Test Type:</i></b>		Recovery			
<b><i>Test Duration:</i></b>		4			
<b><i>Test Level:</i></b>		12.199999809265137			
<b><i>Test Level UOM:</i></b>		ft			
 <b><u>Draw Down &amp; Recovery</u></b>					
<b><i>Pump Test Detail ID:</i></b>		1003882512			
<b><i>Test Type:</i></b>		Recovery			
<b><i>Test Duration:</i></b>		1			
<b><i>Test Level:</i></b>		12.600000381469727			
<b><i>Test Level UOM:</i></b>		ft			
 <b><u>Draw Down &amp; Recovery</u></b>					
<b><i>Pump Test Detail ID:</i></b>		1003882520			
<b><i>Test Type:</i></b>		Recovery			
<b><i>Test Duration:</i></b>		5			
<b><i>Test Level:</i></b>		12.199999809265137			
<b><i>Test Level UOM:</i></b>		ft			
 <b><u>Draw Down &amp; Recovery</u></b>					
<b><i>Pump Test Detail ID:</i></b>		1003882527			
<b><i>Test Type:</i></b>		Draw Down			
<b><i>Test Duration:</i></b>		25			
<b><i>Test Level:</i></b>		11.399999618530273			
<b><i>Test Level UOM:</i></b>		ft			
 <b><u>Draw Down &amp; Recovery</u></b>					
<b><i>Pump Test Detail ID:</i></b>		1003882533			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		50			
<b>Test Level:</b>		11.899999618530273			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		1003882535			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		60			
<b>Test Level:</b>		12.0			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		1003882517			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		4			
<b>Test Level:</b>		10.300000190734863			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		1003882529			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		30			
<b>Test Level:</b>		11.199999809265137			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		1003882515			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		3			
<b>Test Level:</b>		10.199999809265137			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		1003882526			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		20			
<b>Test Level:</b>		11.5			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		1003882528			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		25			
<b>Test Level:</b>		11.300000190734863			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		1003882514			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		2			
<b>Test Level:</b>		12.399999618530273			
<b>Test Level UOM:</b>		ft			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>			1003882516		
<b>Test Type:</b>			Recovery		
<b>Test Duration:</b>			3		
<b>Test Level:</b>			12.300000190734863		
<b>Test Level UOM:</b>			ft		
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>			1003882532		
<b>Test Type:</b>			Recovery		
<b>Test Duration:</b>			40		
<b>Test Level:</b>			11.0		
<b>Test Level UOM:</b>			ft		
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>			1003882521		
<b>Test Type:</b>			Draw Down		
<b>Test Duration:</b>			10		
<b>Test Level:</b>			10.699999809265137		
<b>Test Level UOM:</b>			ft		
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>			1003882522		
<b>Test Type:</b>			Recovery		
<b>Test Duration:</b>			10		
<b>Test Level:</b>			11.899999618530273		
<b>Test Level UOM:</b>			ft		
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>			1003882523		
<b>Test Type:</b>			Draw Down		
<b>Test Duration:</b>			15		
<b>Test Level:</b>			11.399999618530273		
<b>Test Level UOM:</b>			ft		
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>			1003882524		
<b>Test Type:</b>			Recovery		
<b>Test Duration:</b>			15		
<b>Test Level:</b>			11.600000381469727		
<b>Test Level UOM:</b>			ft		
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>			1003882513		
<b>Test Type:</b>			Draw Down		
<b>Test Duration:</b>			2		
<b>Test Level:</b>			10.199999809265137		
<b>Test Level UOM:</b>			ft		
<b><u>Draw Down &amp; Recovery</u></b>					

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Pump Test Detail ID:</b>		1003882519			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		5			
<b>Test Level:</b>		10.5			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		1003882530			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		30			
<b>Test Level:</b>		11.399999618530273			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		1003882531			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		40			
<b>Test Level:</b>		11.899999618530273			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		1003882534			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		50			
<b>Test Level:</b>		10.899999618530273			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		1003882525			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		20			
<b>Test Level:</b>		11.300000190734863			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		1003882536			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		60			
<b>Test Level:</b>		10.800000190734863			
<b>Test Level UOM:</b>		ft			
<b><u>Water Details</u></b>					
<b>Water ID:</b>		1003882507			
<b>Layer:</b>		1			
<b>Kind Code:</b>		8			
<b>Kind:</b>		Untested			
<b>Water Found Depth:</b>		32.0			
<b>Water Found Depth UOM:</b>		ft			
<b><u>Hole Diameter</u></b>					
<b>Hole ID:</b>		1003882505			
<b>Diameter:</b>		8.0			
<b>Depth From:</b>		0.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Depth To:</b> <b>Hole Depth UOM:</b> <b>Hole Diameter UOM:</b>		20.0 ft inch			
<b><u>Hole Diameter</u></b>					
<b>Hole ID:</b> <b>Diameter:</b> <b>Depth From:</b> <b>Depth To:</b> <b>Hole Depth UOM:</b> <b>Hole Diameter UOM:</b>		1003882506 6.0 20.0 39.0 ft inch			
<b><u>Links</u></b>					
<b>Bore Hole ID:</b> <b>Depth M:</b> <b>Year Completed:</b> <b>Well Completed Dt:</b> <b>Audit No:</b>		1003502062 11.8872 2011 2011/03/01 Z125796		<b>Tag No:</b> <b>Contractor:</b> <b>Path:</b> <b>Latitude:</b> <b>Longitude:</b>	A111014 2662 716\7162140.pdf 44.3323072373027 -78.7234594894237
<a href="#">29</a>	1 of 1	WSW/34.7	253.8 / 0.69	Pt Lot 16 Kawartha Lakes ON	EHS
<b>Order No:</b> <b>Status:</b> <b>Report Type:</b> <b>Report Date:</b> <b>Date Received:</b> <b>Previous Site Name:</b> <b>Lot/Building Size:</b> <b>Additional Info Ordered:</b>		20190219141 C RSC Report (Rural) 25-FEB-19 19-FEB-19  Aerial Photos		<b>Nearest Intersection:</b> <b>Municipality:</b> <b>Client Prov/State:</b> <b>Search Radius (km):</b> <b>X:</b> <b>Y:</b>	  ON .3 -78.723428 44.33171
<a href="#">30</a>	1 of 8	W/40.5	249.9 / -3.20	MOYNES FORD SALES LTD LOT 16 CON 6 OPS TWP ON	PRT
<b>Location ID:</b> <b>Type:</b> <b>Expiry Date:</b> <b>Capacity (L):</b> <b>Licence #:</b>		10508 retail 1994-04-30 20000 0054251001			
<a href="#">30</a>	2 of 8	W/40.5	249.9 / -3.20	Moynes Ford Sales Ltd. 344 Lindsay Street South Kawartha Lakes Ontario K9V 4R4 CITY OF KAWARTHA LAKES ON	EBR
<b>EBR Registry No:</b> <b>Ministry Ref No:</b> <b>Notice Type:</b> <b>Notice Stage:</b> <b>Notice Date:</b> <b>Proposal Date:</b> <b>Year:</b> <b>Instrument Type:</b> <b>Off Instrument Name:</b> <b>Posted By:</b> <b>Company Name:</b> <b>Site Address:</b>		IA03E0368 2473-5JYMXH Instrument Decision  October 16, 2003 March 17, 2003 2003 (EPA s. 9) - Approval for discharge into the natural environment other than water (i.e. Air)		<b>Decision Posted:</b> <b>Exception Posted:</b> <b>Section:</b> <b>Act 1:</b> <b>Act 2:</b> <b>Site Location Map:</b>	
<b>Instrument Type:</b> <b>Off Instrument Name:</b> <b>Posted By:</b> <b>Company Name:</b> <b>Site Address:</b>		(EPA s. 9) - Approval for discharge into the natural environment other than water (i.e. Air)			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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**Location Other:**

**Proponent Name:**

**Proponent Address:** 344 Lindsay Street South, Lindsay, Kawartha Lakes Ontario, K9V 4R4

**Comment Period:**

**URL:**

**Site Location Details:**

344 Lindsay Street South Kawartha Lakes Ontario K9V 4R4 CITY OF KAWARTHA LAKES

<a href="#">30</a>	3 of 8	W/40.5	249.9 / -3.20	Moynes Ford Sales Ltd. 344 Lindsay Street South Kawartha Lakes ON	CA
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**Certificate #:** 0950-5RYRGZ  
**Application Year:** 2003  
**Issue Date:** 10/6/2003  
**Approval Type:** Air  
**Status:** Approved  
**Application Type:**  
**Client Name:**  
**Client Address:**  
**Client City:**  
**Client Postal Code:**  
**Project Description:**  
**Contaminants:**  
**Emission Control:**

<a href="#">30</a>	4 of 8	W/40.5	249.9 / -3.20	MOYNES FORD SALES LTD LOT 16 CON 6 OPS TWP ON L4G 1P4	DTNK
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**Delisted Expired Fuel Safety  
Facilities**

<b>Instance No:</b> 9790001	<b>Expired Date:</b> 4/17/1993
<b>Status:</b> EXPIRED	<b>Max Hazard Rank:</b>
<b>Instance ID:</b>	<b>Facility Location:</b>
<b>Instance Type:</b> FS Facility	<b>Facility Type:</b>
<b>Instance Creation Dt:</b>	<b>Fuel Type 2:</b>
<b>Instance Install Dt:</b>	<b>Fuel Type 3:</b>
<b>Item Description:</b>	<b>Panam Related:</b>
<b>Manufacturer:</b>	<b>Panam Venue Nm:</b>
<b>Model:</b>	<b>External Identifier:</b>
<b>Serial No:</b>	<b>Item:</b>
<b>ULC Standard:</b>	<b>Piping Steel:</b>
<b>Quantity:</b>	<b>Piping Galvanized:</b>
<b>Unit of Measure:</b>	<b>Tank Single Wall St:</b>
<b>Overfill Prot Type:</b>	<b>Piping Underground:</b>
<b>Creation Date:</b>	<b>Tank Underground:</b>
<b>Next Periodic Str DT:</b>	<b>Source:</b>
<b>TSSA Base Sched Cycle 2:</b>	
<b>TSSAMax Hazard Rank 1:</b>	
<b>TSSA Risk Based Periodic Yn:</b>	
<b>TSSA Volume of Directives:</b>	
<b>TSSA Periodic Exempt:</b>	
<b>TSSA Statutory Interval:</b>	
<b>TSSA Recd Insp Interva:</b>	
<b>TSSA Recd Tolerance:</b>	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>TSSA Program Area:</b> <b>TSSA Program Area 2:</b> <b>Description:</b> <b>Original Source:</b> EXP <b>Record Date:</b> Up to May 2013					

<a href="#">30</a>	5 of 8	W/40.5	249.9 / -3.20	MOYNES FORD SALES LTD LOT 16 CON 6 OPS TWP ON	DTNK
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**Delisted Expired Fuel Safety Facilities**

<b>Instance No:</b>	10890586	<b>Expired Date:</b>	
<b>Status:</b>	EXPIRED	<b>Max Hazard Rank:</b>	
<b>Instance ID:</b>	49929	<b>Facility Location:</b>	
<b>Instance Type:</b>	FS Piping	<b>Facility Type:</b>	
<b>Instance Creation Dt:</b>		<b>Fuel Type 2:</b>	
<b>Instance Install Dt:</b>		<b>Fuel Type 3:</b>	
<b>Item Description:</b>		<b>Panam Related:</b>	
<b>Manufacturer:</b>		<b>Panam Venue Nm:</b>	
<b>Model:</b>		<b>External Identifier:</b>	
<b>Serial No:</b>		<b>Item:</b>	
<b>ULC Standard:</b>		<b>Piping Steel:</b>	
<b>Quantity:</b>		<b>Piping Galvanized:</b>	
<b>Unit of Measure:</b>		<b>Tank Single Wall St:</b>	
<b>Overfill Prot Type:</b>		<b>Piping Underground:</b>	
<b>Creation Date:</b>		<b>Tank Underground:</b>	
<b>Next Periodic Str DT:</b>		<b>Source:</b>	
<b>TSSA Base Sched Cycle 2:</b>			
<b>TSSA Max Hazard Rank 1:</b>			
<b>TSSA Risk Based Periodic Yn:</b>			
<b>TSSA Volume of Directives:</b>			
<b>TSSA Periodic Exempt:</b>			
<b>TSSA Statutory Interval:</b>			
<b>TSSA Recd Insp Interva:</b>			
<b>TSSA Recd Tolerance:</b>			
<b>TSSA Program Area:</b>			
<b>TSSA Program Area 2:</b>			
<b>Description:</b>	FS Piping		
<b>Original Source:</b>	EXP		
<b>Record Date:</b>	Up to Mar 2012		

<a href="#">30</a>	6 of 8	W/40.5	249.9 / -3.20	MOYNES FORD SALES LTD LOT 16 CON 6 OPS TWP ON	DTNK
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**Delisted Expired Fuel Safety Facilities**

<b>Instance No:</b>	10890571	<b>Expired Date:</b>	
<b>Status:</b>	EXPIRED	<b>Max Hazard Rank:</b>	
<b>Instance ID:</b>	49926	<b>Facility Location:</b>	
<b>Instance Type:</b>	FS Piping	<b>Facility Type:</b>	
<b>Instance Creation Dt:</b>		<b>Fuel Type 2:</b>	
<b>Instance Install Dt:</b>		<b>Fuel Type 3:</b>	
<b>Item Description:</b>		<b>Panam Related:</b>	
<b>Manufacturer:</b>		<b>Panam Venue Nm:</b>	
<b>Model:</b>		<b>External Identifier:</b>	
<b>Serial No:</b>		<b>Item:</b>	
<b>ULC Standard:</b>		<b>Piping Steel:</b>	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Quantity:</b> <b>Unit of Measure:</b> <b>Overfill Prot Type:</b> <b>Creation Date:</b> <b>Next Periodic Str DT:</b> <b>TSSA Base Sched Cycle 2:</b> <b>TSSAMax Hazard Rank 1:</b> <b>TSSA Risk Based Periodic Yn:</b> <b>TSSA Volume of Directives:</b> <b>TSSA Periodic Exempt:</b> <b>TSSA Statutory Interval:</b> <b>TSSA Recd Insp Interva:</b> <b>TSSA Recd Tolerance:</b> <b>TSSA Program Area:</b> <b>TSSA Program Area 2:</b>				<b>Piping Galvanized:</b> <b>Tank Single Wall St:</b> <b>Piping Underground:</b> <b>Tank Underground:</b> <b>Source:</b>	
<b>Description:</b> <b>Original Source:</b> <b>Record Date:</b>		FS Piping EXP Up to Mar 2012			
<a href="#">30</a>	7 of 8	W/40.5	249.9 / -3.20	<b>MOYNES FORD SALES LIMITED</b> <b>344 LINDSAY STREET S.</b> <b>LINDSAY ON K9V 4R4</b>	<b>EASR</b>
<b>Approval No:</b> <b>Status:</b> <b>Date:</b> <b>Record Type:</b> <b>Link Source:</b> <b>Project Type:</b> <b>Full Address:</b> <b>Approval Type:</b> <b>SWP Area Name:</b> <b>PDF URL:</b> <b>PDF Site Location:</b>		R-001-4230983403 REGISTERED 2012-10-24 EASR MOFA Automotive Refinishing Facility EASR-Automotive Refinishing Facility		<b>MOE District:</b> <b>Municipality:</b> <b>Latitude:</b> <b>Longitude:</b> <b>Geometry X:</b> <b>Geometry Y:</b>	LINDSAY
<a href="#">30</a>	8 of 8	W/40.5	249.9 / -3.20	<b>Moynes Ford Sales Ltd.</b> <b>344 Lindsay Street South</b> <b>Kawartha Lakes ON K9V 4R4</b>	<b>ECA</b>
<b>Approval No:</b> <b>Approval Date:</b> <b>Status:</b> <b>Record Type:</b> <b>Link Source:</b> <b>SWP Area Name:</b> <b>Approval Type:</b> <b>Project Type:</b> <b>Business Name:</b> <b>Address:</b> <b>Full Address:</b> <b>Full PDF Link:</b> <b>PDF Site Location:</b>		0950-5RYRGZ 2003-10-06 Approved ECA IDS Kawartha-Haliburton ECA-AIR AIR Moynes Ford Sales Ltd. 344 Lindsay Street South https://www.accessenvironment.ene.gov.on.ca/instruments/2473-5JYMXH-14.pdf		<b>MOE District:</b> <b>City:</b> <b>Longitude:</b> <b>Latitude:</b> <b>Geometry X:</b> <b>Geometry Y:</b>	Peterborough
<a href="#">31</a>	1 of 1	WNW/57.7	255.5 / 2.39	<b>lot 17 con 5</b> <b>ON</b>	<b>WWIS</b>
<b>Well ID:</b> <b>Construction Date:</b> <b>Use 1st:</b> <b>Use 2nd:</b> <b>Final Well Status:</b>		6406530 Domestic 0 Water Supply		<b>Flowing (Y/N):</b> <b>Flow Rate:</b> <b>Data Entry Status:</b> <b>Data Src:</b> <b>Date Received:</b>	1 09-Apr-1976 00:00:00

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Water Type:</b> <b>Casing Material:</b> <b>Audit No:</b> <b>Tag:</b> <b>Constructn Method:</b> <b>Elevation (m):</b> <b>Elevatn Reliabilty:</b> <b>Depth to Bedrock:</b> <b>Well Depth:</b> <b>Overburden/Bedrock:</b> <b>Pump Rate:</b> <b>Static Water Level:</b> <b>Clear/Cloudy:</b> <b>Municipality:</b> <b>Site Info:</b>		OPS TOWNSHIP		<b>Selected Flag:</b> TRUE <b>Abandonment Rec:</b> <b>Contractor:</b> 2517 <b>Form Version:</b> 1 <b>Owner:</b> <b>County:</b> VICTORIA <b>Lot:</b> 017 <b>Concession:</b> 05 <b>Concession Name:</b> CON <b>Easting NAD83:</b> <b>Northing NAD83:</b> <b>Zone:</b> <b>UTM Reliability:</b>	
<b>PDF URL (Map):</b>		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6406530.pdf			
<b><u>Additional Detail(s) (Map)</u></b>					
<b>Well Completed Date:</b> <b>Year Completed:</b> <b>Depth (m):</b> <b>Latitude:</b> <b>Longitude:</b> <b>Path:</b>		1975/06/20 1975 7.0104 44.3366062228875 -78.7268555039032 640\6406530.pdf			
<b><u>Bore Hole Information</u></b>					
<b>Bore Hole ID:</b> <b>DP2BR:</b> <b>Spatial Status:</b> <b>Code OB:</b> <b>Code OB Desc:</b> <b>Open Hole:</b> <b>Cluster Kind:</b> <b>Date Completed:</b> <b>Remarks:</b> <b>Loc Method Desc:</b> <b>Elevrc Desc:</b> <b>Location Source Date:</b> <b>Improvement Location Source:</b> <b>Improvement Location Method:</b> <b>Source Revision Comment:</b> <b>Supplier Comment:</b>	10441521			<b>Elevation:</b> <b>Elevrc:</b> <b>Zone:</b> 17 <b>East83:</b> 681215.00 <b>North83:</b> 4911773.00 <b>Org CS:</b> <b>UTMRC:</b> 5 <b>UTMRC Desc:</b> margin of error : 100 m - 300 m <b>Location Method:</b> p5	
<b>Loc Method Desc:</b>		Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b> <b>Layer:</b> <b>Color:</b> <b>General Color:</b> <b>Mat1:</b> <b>Most Common Material:</b> <b>Mat2:</b> <b>Mat2 Desc:</b> <b>Mat3:</b> <b>Mat3 Desc:</b> <b>Formation Top Depth:</b> <b>Formation End Depth:</b> <b>Formation End Depth UOM:</b>		932506592 1 6 BROWN 05 CLAY 12 STONES 13 BOULDERS 0.0 22.0 ft			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932506593			
<b>Layer:</b>		2			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		17			
<b>Most Common Material:</b>		SHALE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		22.0			
<b>Formation End Depth:</b>		23.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966406530			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10990091			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930721016			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		22.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		PUMP			
<b>Pump Test ID:</b>		996406530			
<b>Pump Set At:</b>					
<b>Static Level:</b>		14.0			
<b>Final Level After Pumping:</b>		15.0			
<b>Recommended Pump Depth:</b>		21.0			
<b>Pumping Rate:</b>		10.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		10.0			
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		1			
<b>Pumping Duration HR:</b>		3			
<b>Pumping Duration MIN:</b>		0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Flowing:		No			
<b><u>Water Details</u></b>					
Water ID:		933928373			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		22.0			
Water Found Depth UOM:		ft			
<b><u>Links</u></b>					
Bore Hole ID:	10441521			Tag No:	
Depth M:	7.0104			Contractor:	2517
Year Completed:	1975			Path:	640\6406530.pdf
Well Completed Dt:	1975/06/20			Latitude:	44.3366062228875
Audit No:				Longitude:	-78.7268555039032

<a href="#">32</a>	1 of 1	WSW/58.4	253.8 / 0.61	lot 16 con 6 ON	WWIS
Well ID:	6402598			Flowing (Y/N):	
Construction Date:				Flow Rate:	
Use 1st:	Domestic			Data Entry Status:	
Use 2nd:	0			Data Src:	1
Final Well Status:	Water Supply			Date Received:	25-Sep-1961 00:00:00
Water Type:				Selected Flag:	TRUE
Casing Material:				Abandonment Rec:	
Audit No:				Contractor:	2518
Tag:				Form Version:	1
Constructn Method:				Owner:	
Elevation (m):				County:	VICTORIA
Elevatn Reliability:				Lot:	016
Depth to Bedrock:				Concession:	06
Well Depth:				Concession Name:	CON
Overburden/Bedrock:				Easting NAD83:	
Pump Rate:				Northing NAD83:	
Static Water Level:				Zone:	
Clear/Cloudy:				UTM Reliability:	
Municipality:	OPS TOWNSHIP				
Site Info:					
PDF URL (Map):	<a href="https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402598.pdf">https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402598.pdf</a>				

**Additional Detail(s) (Map)**

Well Completed Date:	1961/08/30
Year Completed:	1961
Depth (m):	7.9248
Latitude:	44.3316732787991
Longitude:	-78.7237223374385
Path:	640\6402598.pdf

**Bore Hole Information**

Bore Hole ID:	10437628	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	681480.00
Code OB Desc:		North83:	4911232.00
Open Hole:		Org CS:	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Cluster Kind:</b>				<b>UTMRC:</b>	5
<b>Date Completed:</b>	30-Aug-1961 00:00:00			<b>UTMRC Desc:</b>	margin of error : 100 m - 300 m
<b>Remarks:</b>				<b>Location Method:</b>	p5
<b>Loc Method Desc:</b>		Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494880			
<b>Layer:</b>		2			
<b>Color:</b>		3			
<b>General Color:</b>		BLUE			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		2.0			
<b>Formation End Depth:</b>		20.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494881			
<b>Layer:</b>		3			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		20.0			
<b>Formation End Depth:</b>		23.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494879			
<b>Layer:</b>		1			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		2.0			
<b>Formation End Depth UOM:</b>		ft			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932494882			
<b>Layer:</b>		4			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		23.0			
<b>Formation End Depth:</b>		26.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966402598			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10986198			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714850			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		23.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714851			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>					
<b>Depth To:</b>		26.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		PUMP			
<b>Pump Test ID:</b>		996402598			
<b>Pump Set At:</b>					
<b>Static Level:</b>		8.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Final Level After Pumping:</b>		15.0			
<b>Recommended Pump Depth:</b>		20.0			
<b>Pumping Rate:</b>		20.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		3.0			
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		1			
<b>Pumping Duration HR:</b>		3			
<b>Pumping Duration MIN:</b>		0			
<b>Flowing:</b>		No			

**Water Details**

**Water ID:** 933924558  
**Layer:** 1  
**Kind Code:** 1  
**Kind:** FRESH  
**Water Found Depth:** 25.0  
**Water Found Depth UOM:** ft

**Links**

<b>Bore Hole ID:</b> 10437628	<b>Tag No:</b>	
<b>Depth M:</b> 7.9248	<b>Contractor:</b>	2518
<b>Year Completed:</b> 1961	<b>Path:</b>	640\6402598.pdf
<b>Well Completed Dt:</b> 1961/08/30	<b>Latitude:</b>	44.3316732787991
<b>Audit No:</b>	<b>Longitude:</b>	-78.7237223374385

<a href="#">33</a>	1 of 1	WSW/66.3	252.8 / -0.31	lot 16 con 6 ON	WWIS
<b>Well ID:</b> 6402600				<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b> Domestic				<b>Data Entry Status:</b>	
<b>Use 2nd:</b> 0				<b>Data Src:</b> 1	
<b>Final Well Status:</b> Water Supply				<b>Date Received:</b> 17-Jan-1967 00:00:00	
<b>Water Type:</b>				<b>Selected Flag:</b> TRUE	
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>				<b>Contractor:</b> 2518	
<b>Tag:</b>				<b>Form Version:</b> 1	
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b> VICTORIA	
<b>Elevatn Reliability:</b>				<b>Lot:</b> 016	
<b>Depth to Bedrock:</b>				<b>Concession:</b> 06	
<b>Well Depth:</b>				<b>Concession Name:</b> CON	
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b> OPS TOWNSHIP					
<b>Site Info:</b>					
<b>PDF URL (Map):</b>	<a href="https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402600.pdf">https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402600.pdf</a>				

**Additional Detail(s) (Map)**

**Well Completed Date:** 1966/12/12  
**Year Completed:** 1966  
**Depth (m):** 9.7536

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Latitude:		44.3325231382791			
Longitude:		-78.7239026765064			
Path:		640\6402600.pdf			

**Bore Hole Information**

<b>Bore Hole ID:</b>	10437630	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681463.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911326.00
<b>Open Hole:</b>		<b>Org CS:</b>	
<b>Cluster Kind:</b>		<b>UTMRC:</b>	5
<b>Date Completed:</b>	12-Dec-1966 00:00:00	<b>UTMRC Desc:</b>	margin of error : 100 m - 300 m
<b>Remarks:</b>		<b>Location Method:</b>	p5
<b>Loc Method Desc:</b>	Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			
<b>Supplier Comment:</b>			

**Overburden and Bedrock**

**Materials Interval**

<b>Formation ID:</b>	932494885
<b>Layer:</b>	1
<b>Color:</b>	
<b>General Color:</b>	
<b>Mat1:</b>	23
<b>Most Common Material:</b>	PREVIOUSLY DUG
<b>Mat2:</b>	
<b>Mat2 Desc:</b>	
<b>Mat3:</b>	
<b>Mat3 Desc:</b>	
<b>Formation Top Depth:</b>	0.0
<b>Formation End Depth:</b>	16.0
<b>Formation End Depth UOM:</b>	ft

**Overburden and Bedrock**

**Materials Interval**

<b>Formation ID:</b>	932494886
<b>Layer:</b>	2
<b>Color:</b>	2
<b>General Color:</b>	GREY
<b>Mat1:</b>	05
<b>Most Common Material:</b>	CLAY
<b>Mat2:</b>	12
<b>Mat2 Desc:</b>	STONES
<b>Mat3:</b>	
<b>Mat3 Desc:</b>	
<b>Formation Top Depth:</b>	16.0
<b>Formation End Depth:</b>	25.0
<b>Formation End Depth UOM:</b>	ft

**Overburden and Bedrock**

**Materials Interval**

<b>Formation ID:</b>	932494887
<b>Layer:</b>	3

<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>
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		17			
<b>Most Common Material:</b>		SHALE			
<b>Mat2:</b>		15			
<b>Mat2 Desc:</b>		LIMESTONE			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		25.0			
<b>Formation End Depth:</b>		32.0			
<b>Formation End Depth UOM:</b>		ft			
 <b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966402600			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
 <b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10986200			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
 <b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714855			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>					
<b>Depth To:</b>		32.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
 <b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714854			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		10.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
 <b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		PUMP			
<b>Pump Test ID:</b>		996402600			
<b>Pump Set At:</b>					
<b>Static Level:</b>		9.0			
<b>Final Level After Pumping:</b>		18.0			
<b>Recommended Pump Depth:</b>		20.0			
<b>Pumping Rate:</b>		30.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		4.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		1			
<b>Pumping Duration HR:</b>		2			
<b>Pumping Duration MIN:</b>		0			
<b>Flowing:</b>		No			

**Water Details**

**Water ID:** 933924560  
**Layer:** 1  
**Kind Code:** 1  
**Kind:** FRESH  
**Water Found Depth:** 30.0  
**Water Found Depth UOM:** ft

**Links**

<b>Bore Hole ID:</b> 10437630	<b>Tag No:</b>
<b>Depth M:</b> 9.7536	<b>Contractor:</b> 2518
<b>Year Completed:</b> 1966	<b>Path:</b> 640\6402600.pdf
<b>Well Completed Dt:</b> 1966/12/12	<b>Latitude:</b> 44.3325231382791
<b>Audit No:</b>	<b>Longitude:</b> -78.7239026765064

<a href="#">34</a>	1 of 1	SW/66.3	254.8 / 1.69	CANADIAN PACIFIC BULK SYSTEMS LINDSAY BULK PLANT HWY 7 AND HWY 35 TANK TRUCK (CARGO) LINDSAY TOWN ON	SPL
<b>Ref No:</b>	31962			<b>Contaminant Qty:</b>	
<b>Site No:</b>				<b>Nature of Damage:</b>	
<b>Incident Dt:</b>	3/13/1990			<b>Discharger Report:</b>	
<b>Year:</b>				<b>Material Group:</b>	
<b>Incident Cause:</b>	CONTAINER OVERFLOW			<b>Health/Env Conseq:</b>	
<b>Incident Event:</b>				<b>Agency Involved:</b>	MCCR
<b>Environment Impact:</b>	POSSIBLE			<b>Site Lot:</b>	
<b>Nature of Impact:</b>	Soil contamination			<b>Site Conc:</b>	
<b>MOE Response:</b>				<b>Site Geo Ref Accu:</b>	
<b>Dt MOE Arvl on Scn:</b>				<b>Site Map Datum:</b>	
<b>MOE Reported Dt:</b>	3/13/1990			<b>Northing:</b>	
<b>Dt Document Closed:</b>				<b>Easting:</b>	
<b>Municipality No:</b>	72401				
<b>System Facility Address:</b>					
<b>Client Type:</b>					
<b>Call Report Location Geodata:</b>					
<b>Contaminant Code:</b>					
<b>Contaminant Name:</b>					
<b>Contaminant Limit 1:</b>					
<b>Contam Limit Freq 1:</b>					
<b>Contaminant UN No 1:</b>					
<b>Receiving Medium:</b>	LAND				
<b>Receiving Environment:</b>					
<b>Incident Reason:</b>	ERROR				
<b>Incident Summary:</b>	CP BULK SYSTEMS - 1000 L FURNACE OIL TO DIKED AREA.				
<b>Site Region:</b>					
<b>Site Municipality:</b>	LINDSAY TOWN				
<b>Activity Preceding Spill:</b>					
<b>Property 2nd Watershed:</b>					
<b>Property Tertiary Watershed:</b>					
<b>Sector Type:</b>					
<b>SAC Action Class:</b>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Source Type:</b> <b>Site County/District:</b> <b>Site Geo Ref Meth:</b> <b>Site District Office:</b> <b>Nearest Watercourse:</b> <b>Site Name:</b> <b>Site Address:</b> <b>Client Name:</b>					

<a href="#">35</a>	1 of 1	NW/72.6	255.8 / 2.69	282 LINDSAY ST. lot 17 con 6 LINDSAY ON	WWIS
<b>Well ID:</b>	6417663			<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>	Domestic			<b>Data Entry Status:</b>	
<b>Use 2nd:</b>				<b>Data Src:</b>	
<b>Final Well Status:</b>	Water Supply			<b>Date Received:</b>	19-May-2004 00:00:00
<b>Water Type:</b>				<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>	Z06004			<b>Contractor:</b>	2662
<b>Tag:</b>	A005955			<b>Form Version:</b>	3
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliability:</b>				<b>Lot:</b>	017
<b>Depth to Bedrock:</b>				<b>Concession:</b>	06
<b>Well Depth:</b>				<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP				
<b>Site Info:</b>					
<b>PDF URL (Map):</b>	<a href="https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/641\6417663.pdf">https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/641\6417663.pdf</a>				

**Additional Detail(s) (Map)**

<b>Well Completed Date:</b>	2004/03/03
<b>Year Completed:</b>	2004
<b>Depth (m):</b>	35
<b>Latitude:</b>	44.3378978954161
<b>Longitude:</b>	-78.7261658302336
<b>Path:</b>	641\6417663.pdf

**Bore Hole Information**

<b>Bore Hole ID:</b>	11107909	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681266.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911918.00
<b>Open Hole:</b>		<b>Org CS:</b>	UTM83
<b>Cluster Kind:</b>		<b>UTMRC:</b>	5
<b>Date Completed:</b>	03-Mar-2004 00:00:00	<b>UTMRC Desc:</b>	margin of error : 100 m - 300 m
<b>Remarks:</b>		<b>Location Method:</b>	wwr
<b>Loc Method Desc:</b>	on Water Well Record		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			
<b>Supplier Comment:</b>			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932964544			
<b>Layer:</b>		6			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		23.5			
<b>Formation End Depth:</b>		35.0			
<b>Formation End Depth UOM:</b>		m			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932964540			
<b>Layer:</b>		2			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		81			
<b>Mat2 Desc:</b>		SANDY			
<b>Mat3:</b>		11			
<b>Mat3 Desc:</b>		GRAVEL			
<b>Formation Top Depth:</b>		2.0			
<b>Formation End Depth:</b>		7.0			
<b>Formation End Depth UOM:</b>		m			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932964542			
<b>Layer:</b>		4			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		81			
<b>Mat2 Desc:</b>		SANDY			
<b>Mat3:</b>		11			
<b>Mat3 Desc:</b>		GRAVEL			
<b>Formation Top Depth:</b>		20.0			
<b>Formation End Depth:</b>		21.0			
<b>Formation End Depth UOM:</b>		m			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932964543			
<b>Layer:</b>		5			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		28			
<b>Most Common Material:</b>		SAND			
<b>Mat2:</b>		84			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Mat2 Desc:</b>		SILTY			
<b>Mat3:</b>		11			
<b>Mat3 Desc:</b>		GRAVEL			
<b>Formation Top Depth:</b>		21.0			
<b>Formation End Depth:</b>		23.5			
<b>Formation End Depth UOM:</b>		m			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932964541			
<b>Layer:</b>		3			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		28			
<b>Most Common Material:</b>		SAND			
<b>Mat2:</b>		84			
<b>Mat2 Desc:</b>		SILTY			
<b>Mat3:</b>		11			
<b>Mat3 Desc:</b>		GRAVEL			
<b>Formation Top Depth:</b>		7.0			
<b>Formation End Depth:</b>		20.0			
<b>Formation End Depth UOM:</b>		m			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932964539			
<b>Layer:</b>		1			
<b>Color:</b>		8			
<b>General Color:</b>		BLACK			
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		2.0			
<b>Formation End Depth UOM:</b>		m			
<b><u>Annular Space/Abandonment</u></b>					
<b><u>Sealing Record</u></b>					
<b>Plug ID:</b>		933251721			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		20.0			
<b>Plug Depth UOM:</b>		m			
<b><u>Method of Construction &amp; Well</u></b>					
<b><u>Use</u></b>					
<b>Method Construction ID:</b>		966417663			
<b>Method Construction Code:</b>		4			
<b>Method Construction:</b>		Rotary (Air)			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		11115631			
<b>Casing No:</b>		1			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930841242			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>		23.5			
<b>Depth To:</b>		35.0			
<b>Casing Diameter:</b>					
<b>Casing Diameter UOM:</b>		cm			
<b>Casing Depth UOM:</b>		m			
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930841241			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>		2.5			
<b>Depth To:</b>		23.5			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		cm			
<b>Casing Depth UOM:</b>		m			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		PUMP			
<b>Pump Test ID:</b>		11119417			
<b>Pump Set At:</b>		32.0			
<b>Static Level:</b>		12.880000114440918			
<b>Final Level After Pumping:</b>		15.130000114440918			
<b>Recommended Pump Depth:</b>		32.0			
<b>Pumping Rate:</b>		30.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		25.0			
<b>Levels UOM:</b>		m			
<b>Rate UOM:</b>		LPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		1			
<b>Pumping Duration HR:</b>		2			
<b>Pumping Duration MIN:</b>		0			
<b>Flowing:</b>					
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166422			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		2			
<b>Test Level:</b>		14.720000267028809			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166430			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		40			
<b>Test Level:</b>		14.9399995803833			
<b>Test Level UOM:</b>		m			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166431			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		50			
<b>Test Level:</b>		14.968999862670898			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166441			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		25			
<b>Test Level:</b>		13.149999618530273			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166438			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		10			
<b>Test Level:</b>		13.220000267028809			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166425			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		10			
<b>Test Level:</b>		14.8100004196167			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166435			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		3			
<b>Test Level:</b>		13.260000228881836			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166436			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		4			
<b>Test Level:</b>		13.25			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166440			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		20			
<b>Test Level:</b>		13.170000076293945			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Pump Test Detail ID:</b>		11166442			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		30			
<b>Test Level:</b>		13.130000114440918			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166444			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		50			
<b>Test Level:</b>		13.09000015258789			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166426			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		15			
<b>Test Level:</b>		14.850000381469727			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166428			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		25			
<b>Test Level:</b>		14.90999984741211			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166439			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		15			
<b>Test Level:</b>		13.1899995803833			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166445			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		60			
<b>Test Level:</b>		13.0600004196167			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166427			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		20			
<b>Test Level:</b>		14.880000114440918			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166437			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		5			
<b>Test Level:</b>		13.239999771118164			

<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>
<i>Test Level UOM:</i>		m			
<u><i>Draw Down &amp; Recovery</i></u>					
<i>Pump Test Detail ID:</i>		11166421			
<i>Test Type:</i>		Draw Down			
<i>Test Duration:</i>		1			
<i>Test Level:</i>		14.609999656677246			
<i>Test Level UOM:</i>		m			
<u><i>Draw Down &amp; Recovery</i></u>					
<i>Pump Test Detail ID:</i>		11166424			
<i>Test Type:</i>		Draw Down			
<i>Test Duration:</i>		5			
<i>Test Level:</i>		14.760000228881836			
<i>Test Level UOM:</i>		m			
<u><i>Draw Down &amp; Recovery</i></u>					
<i>Pump Test Detail ID:</i>		11166429			
<i>Test Type:</i>		Draw Down			
<i>Test Duration:</i>		30			
<i>Test Level:</i>		14.920000076293945			
<i>Test Level UOM:</i>		m			
<u><i>Draw Down &amp; Recovery</i></u>					
<i>Pump Test Detail ID:</i>		11166443			
<i>Test Type:</i>		Recovery			
<i>Test Duration:</i>		40			
<i>Test Level:</i>		13.100000381469727			
<i>Test Level UOM:</i>		m			
<u><i>Draw Down &amp; Recovery</i></u>					
<i>Pump Test Detail ID:</i>		11166420			
<i>Test Type:</i>		Draw Down			
<i>Test Duration:</i>		0			
<i>Test Level:</i>		12.880000114440918			
<i>Test Level UOM:</i>		m			
<u><i>Draw Down &amp; Recovery</i></u>					
<i>Pump Test Detail ID:</i>		11166423			
<i>Test Type:</i>		Draw Down			
<i>Test Duration:</i>		4			
<i>Test Level:</i>		14.739999771118164			
<i>Test Level UOM:</i>		m			
<u><i>Draw Down &amp; Recovery</i></u>					
<i>Pump Test Detail ID:</i>		11166433			
<i>Test Type:</i>		Recovery			
<i>Test Duration:</i>		1			
<i>Test Level:</i>		14.329999923706055			
<i>Test Level UOM:</i>		m			
<u><i>Draw Down &amp; Recovery</i></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>
<b>Pump Test Detail ID:</b>		11166434			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		2			
<b>Test Level:</b>		13.279999732971191			
<b>Test Level UOM:</b>		m			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		11166432			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		60			
<b>Test Level:</b>		15.020000457763672			
<b>Test Level UOM:</b>		m			
<b><u>Water Details</u></b>					
<b>Water ID:</b>		934049203			
<b>Layer:</b>		2			
<b>Kind Code:</b>		3			
<b>Kind:</b>		SULPHUR			
<b>Water Found Depth:</b>		23.0			
<b>Water Found Depth UOM:</b>		m			
<b><u>Water Details</u></b>					
<b>Water ID:</b>		934049202			
<b>Layer:</b>		1			
<b>Kind Code:</b>		1			
<b>Kind:</b>		FRESH			
<b>Water Found Depth:</b>		23.0			
<b>Water Found Depth UOM:</b>		m			
<b><u>Hole Diameter</u></b>					
<b>Hole ID:</b>		11115630			
<b>Diameter:</b>		6.0			
<b>Depth From:</b>		20.0			
<b>Depth To:</b>		35.0			
<b>Hole Depth UOM:</b>		m			
<b>Hole Diameter UOM:</b>		cm			
<b><u>Hole Diameter</u></b>					
<b>Hole ID:</b>		11115629			
<b>Diameter:</b>		10.0			
<b>Depth From:</b>		0.0			
<b>Depth To:</b>		20.0			
<b>Hole Depth UOM:</b>		m			
<b>Hole Diameter UOM:</b>		cm			
<b><u>Links</u></b>					
<b>Bore Hole ID:</b>	11107909			<b>Tag No:</b>	A005955
<b>Depth M:</b>	35			<b>Contractor:</b>	2662
<b>Year Completed:</b>	2004			<b>Path:</b>	641\6417663.pdf
<b>Well Completed Dt:</b>	2004/03/03			<b>Latitude:</b>	44.3378978954161
<b>Audit No:</b>	Z06004			<b>Longitude:</b>	-78.7261658302336

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<a href="#">36</a>	1 of 1	WSW/74.2	254.8 / 1.69	lot 16 con 6 ON	WWIS

<b>Well ID:</b>	6408831	<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>		<b>Flow Rate:</b>	
<b>Use 1st:</b>	Domestic	<b>Data Entry Status:</b>	
<b>Use 2nd:</b>	0	<b>Data Src:</b>	1
<b>Final Well Status:</b>	Water Supply	<b>Date Received:</b>	05-Mar-1982 00:00:00
<b>Water Type:</b>		<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>		<b>Abandonment Rec:</b>	
<b>Audit No:</b>		<b>Contractor:</b>	2518
<b>Tag:</b>		<b>Form Version:</b>	1
<b>Constructn Method:</b>		<b>Owner:</b>	
<b>Elevation (m):</b>		<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>		<b>Lot:</b>	016
<b>Depth to Bedrock:</b>		<b>Concession:</b>	06
<b>Well Depth:</b>		<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>		<b>Easting NAD83:</b>	
<b>Pump Rate:</b>		<b>Northing NAD83:</b>	
<b>Static Water Level:</b>		<b>Zone:</b>	
<b>Clear/Cloudy:</b>		<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP		
<b>Site Info:</b>			

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/640\6408831.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6408831.pdf)

#### Additional Detail(s) (Map)

<b>Well Completed Date:</b>	1981/06/08
<b>Year Completed:</b>	1981
<b>Depth (m):</b>	8.5344
<b>Latitude:</b>	44.3315960640488
<b>Longitude:</b>	-78.7239134657702
<b>Path:</b>	640\6408831.pdf

#### Bore Hole Information

<b>Bore Hole ID:</b>	10443778	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681465.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911223.00
<b>Open Hole:</b>		<b>Org CS:</b>	
<b>Cluster Kind:</b>		<b>UTMRC:</b>	5
<b>Date Completed:</b>	08-Jun-1981 00:00:00	<b>UTMRC Desc:</b>	margin of error : 100 m - 300 m
<b>Remarks:</b>		<b>Location Method:</b>	p5
<b>Loc Method Desc:</b>	Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			
<b>Supplier Comment:</b>			

#### Overburden and Bedrock Materials Interval

<b>Formation ID:</b>	932514222
<b>Layer:</b>	2
<b>Color:</b>	
<b>General Color:</b>	
<b>Mat1:</b>	11
<b>Most Common Material:</b>	GRAVEL

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Mat2:</b>		05			
<b>Mat2 Desc:</b>		CLAY			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		2.0			
<b>Formation End Depth:</b>		20.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932514221			
<b>Layer:</b>		1			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		2.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932514223			
<b>Layer:</b>		3			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		20.0			
<b>Formation End Depth:</b>		28.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966408831			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10992348			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930723653			
<b>Layer:</b>		1			
<b>Material:</b>		1			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		20.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930723654			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>					
<b>Depth To:</b>		28.0			
<b>Casing Diameter:</b>					
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		BAILER			
<b>Pump Test ID:</b>		996408831			
<b>Pump Set At:</b>					
<b>Static Level:</b>		25.0			
<b>Final Level After Pumping:</b>		25.0			
<b>Recommended Pump Depth:</b>		3.0			
<b>Pumping Rate:</b>		3.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		3.0			
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		2			
<b>Pumping Duration HR:</b>		1			
<b>Pumping Duration MIN:</b>		0			
<b>Flowing:</b>		No			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934335849			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		15			
<b>Test Level:</b>		25.0			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934599359			
<b>Test Type:</b>		Draw Down			
<b>Test Duration:</b>		30			
<b>Test Level:</b>		25.0			
<b>Test Level UOM:</b>		ft			
<b><u>Links</u></b>					
<b>Bore Hole ID:</b>	10443778			<b>Tag No:</b>	2518
<b>Depth M:</b>	8.5344			<b>Contractor:</b>	640\6408831.pdf
<b>Year Completed:</b>	1981			<b>Path:</b>	44.3315960640488
<b>Well Completed Dt:</b>	1981/06/08			<b>Latitude:</b>	44.3315960640488
<b>Audit No:</b>				<b>Longitude:</b>	-78.7239134657702

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<a href="#">37</a>	1 of 1	W/75.9	251.9 / -1.25	ON	WWIS
<b>Well ID:</b>	6401747			<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>	Domestic			<b>Data Entry Status:</b>	
<b>Use 2nd:</b>	0			<b>Data Src:</b>	1
<b>Final Well Status:</b>	Water Supply			<b>Date Received:</b>	23-Nov-1964 00:00:00
<b>Water Type:</b>				<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>				<b>Contractor:</b>	2518
<b>Tag:</b>				<b>Form Version:</b>	1
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>				<b>Lot:</b>	
<b>Depth to Bedrock:</b>				<b>Concession:</b>	
<b>Well Depth:</b>				<b>Concession Name:</b>	
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>	LINDSAY TOWN				
<b>Site Info:</b>					
<b>PDF URL (Map):</b>	<a href="https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6401747.pdf">https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6401747.pdf</a>				
<b><u>Additional Detail(s) (Map)</u></b>					
<b>Well Completed Date:</b>	1964/09/21				
<b>Year Completed:</b>	1964				
<b>Depth (m):</b>	11.2776				
<b>Latitude:</b>	44.3330916270062				
<b>Longitude:</b>	-78.7239684780505				
<b>Path:</b>	640\6401747.pdf				
<b><u>Bore Hole Information</u></b>					
<b>Bore Hole ID:</b>	10436778			<b>Elevation:</b>	
<b>DP2BR:</b>				<b>Elevrc:</b>	
<b>Spatial Status:</b>				<b>Zone:</b>	17
<b>Code OB:</b>				<b>East83:</b>	681456.00
<b>Code OB Desc:</b>				<b>North83:</b>	4911389.00
<b>Open Hole:</b>				<b>Org CS:</b>	
<b>Cluster Kind:</b>				<b>UTMRC:</b>	5
<b>Date Completed:</b>	21-Sep-1964 00:00:00			<b>UTMRC Desc:</b>	margin of error : 100 m - 300 m
<b>Remarks:</b>				<b>Location Method:</b>	p5
<b>Loc Method Desc:</b>	Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m				
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>	932492423				
<b>Layer:</b>	3				
<b>Color:</b>	2				
<b>General Color:</b>	GREY				

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		23.0			
<b>Formation End Depth:</b>		37.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932492422			
<b>Layer:</b>		2			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		12			
<b>Mat2 Desc:</b>		STONES			
<b>Mat3:</b>		17			
<b>Mat3 Desc:</b>		SHALE			
<b>Formation Top Depth:</b>		2.0			
<b>Formation End Depth:</b>		23.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932492421			
<b>Layer:</b>		1			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		2.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966401747			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10985348			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930713459			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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**Layer:** 1  
**Material:** 1  
**Open Hole or Material:** STEEL  
**Depth From:**  
**Depth To:** 25.0  
**Casing Diameter:** 6.0  
**Casing Diameter UOM:** inch  
**Casing Depth UOM:** ft

**Construction Record - Casing**

**Casing ID:** 930713460  
**Layer:** 2  
**Material:** 4  
**Open Hole or Material:** OPEN HOLE  
**Depth From:**  
**Depth To:** 37.0  
**Casing Diameter:** 6.0  
**Casing Diameter UOM:** inch  
**Casing Depth UOM:** ft

**Results of Well Yield Testing**

**Pumping Test Method Desc:** PUMP  
**Pump Test ID:** 996401747  
**Pump Set At:**  
**Static Level:** 12.0  
**Final Level After Pumping:** 14.0  
**Recommended Pump Depth:** 25.0  
**Pumping Rate:** 20.0  
**Flowing Rate:**  
**Recommended Pump Rate:** 5.0  
**Levels UOM:** ft  
**Rate UOM:** GPM  
**Water State After Test Code:** 1  
**Water State After Test:** CLEAR  
**Pumping Test Method:** 1  
**Pumping Duration HR:** 3  
**Pumping Duration MIN:** 0  
**Flowing:** No

**Water Details**

**Water ID:** 933923800  
**Layer:** 1  
**Kind Code:** 1  
**Kind:** FRESH  
**Water Found Depth:** 35.0  
**Water Found Depth UOM:** ft

**Links**

<b>Bore Hole ID:</b> 10436778	<b>Tag No:</b>
<b>Depth M:</b> 11.2776	<b>Contractor:</b> 2518
<b>Year Completed:</b> 1964	<b>Path:</b> 640\6401747.pdf
<b>Well Completed Dt:</b> 1964/09/21	<b>Latitude:</b> 44.3330916270062
<b>Audit No:</b>	<b>Longitude:</b> -78.7239684780505

<a href="#">38</a>	1 of 1	WSW/78.0	253.9 / 0.78	354 LINDSAY ST. SOUTH lot 16 con 6 LINDSAY ON	WWIS
<b>Well ID:</b>	7238850	<b>Flowing (Y/N):</b>			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>				<b>Data Entry Status:</b>	
<b>Use 2nd:</b>				<b>Data Src:</b>	
<b>Final Well Status:</b>	Alteration			<b>Date Received:</b>	23-Mar-2015 00:00:00
<b>Water Type:</b>				<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>	Z203639			<b>Contractor:</b>	2662
<b>Tag:</b>	A170732			<b>Form Version:</b>	7
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>				<b>Lot:</b>	016
<b>Depth to Bedrock:</b>				<b>Concession:</b>	06
<b>Well Depth:</b>				<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP				
<b>Site Info:</b>					

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/723\7238850.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/723\7238850.pdf)

**Additional Detail(s) (Map)**

**Well Completed Date:** 2015/02/10  
**Year Completed:** 2015  
**Depth (m):**  
**Latitude:** 44.3323547153573  
**Longitude:** -78.7240346224287  
**Path:** 723\7238850.pdf

**Bore Hole Information**

<b>Bore Hole ID:</b>	1005316993	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681453.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911307.00
<b>Open Hole:</b>		<b>Org CS:</b>	UTM83
<b>Cluster Kind:</b>		<b>UTMRC:</b>	4
<b>Date Completed:</b>	10-Feb-2015 00:00:00	<b>UTMRC Desc:</b>	margin of error : 30 m - 100 m
<b>Remarks:</b>		<b>Location Method:</b>	wwr
<b>Loc Method Desc:</b>	on Water Well Record		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			
<b>Supplier Comment:</b>			

**Annular Space/Abandonment**

**Sealing Record**

**Plug ID:** 1005583193  
**Layer:** 2  
**Plug From:** 1.0  
**Plug To:** 0.0  
**Plug Depth UOM:** ft

**Annular Space/Abandonment**

**Sealing Record**

<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>
<b>Plug ID:</b>		1005583192			
<b>Layer:</b>		1			
<b>Plug From:</b>		5.0			
<b>Plug To:</b>		1.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		1005583191			
<b>Method Construction Code:</b>					
<b>Method Construction:</b>					
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		1005583185			
<b>Casing No:</b>		0			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		1005583189			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>		-2.0			
<b>Depth To:</b>		5.0			
<b>Casing Diameter:</b>		6.25			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Screen</u></b>					
<b>Screen ID:</b>		1005583190			
<b>Layer:</b>					
<b>Slot:</b>					
<b>Screen Top Depth:</b>					
<b>Screen End Depth:</b>					
<b>Screen Material:</b>					
<b>Screen Depth UOM:</b>		ft			
<b>Screen Diameter UOM:</b>		inch			
<b>Screen Diameter:</b>					
<b><u>Water Details</u></b>					
<b>Water ID:</b>		1005583188			
<b>Layer:</b>					
<b>Kind Code:</b>					
<b>Kind:</b>					
<b>Water Found Depth:</b>					
<b>Water Found Depth UOM:</b>		ft			
<b><u>Hole Diameter</u></b>					
<b>Hole ID:</b>		1005583187			
<b>Diameter:</b>					
<b>Depth From:</b>					
<b>Depth To:</b>					
<b>Hole Depth UOM:</b>		ft			

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

Links

<b>Bore Hole ID:</b>	1005316993	<b>Tag No:</b>	A170732
<b>Depth M:</b>		<b>Contractor:</b>	2662
<b>Year Completed:</b>	2015	<b>Path:</b>	723\7238850.pdf
<b>Well Completed Dt:</b>	2015/02/10	<b>Latitude:</b>	44.3323547153573
<b>Audit No:</b>	Z203639	<b>Longitude:</b>	-78.7240346224287

<a href="#"><u>39</u></a>	1 of 1	<b>WSW/83.9</b>	<b>253.9 / 0.78</b>	<b>354 Lindsay Street South Lindsay ON K9V 4R4</b>	<b>EHS</b>
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<b>Order No:</b>	20101206051	<b>Nearest Intersection:</b>	
<b>Status:</b>	C	<b>Municipality:</b>	
<b>Report Type:</b>	Standard Report	<b>Client Prov/State:</b>	ON
<b>Report Date:</b>	12/14/2010	<b>Search Radius (km):</b>	0.25
<b>Date Received:</b>	12/6/2010 4:39:37 PM	<b>X:</b>	-78.724103
<b>Previous Site Name:</b>		<b>Y:</b>	44.332305
<b>Lot/Building Size:</b>			
<b>Additional Info Ordered:</b>			

<a href="#"><u>40</u></a>	1 of 1	<b>ESE/87.4</b>	<b>258.9 / 5.78</b>	<b>lot 15 con 6 ON</b>	<b>WWIS</b>
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<b>Well ID:</b>	6402590	<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>		<b>Flow Rate:</b>	
<b>Use 1st:</b>	Industrial	<b>Data Entry Status:</b>	
<b>Use 2nd:</b>	0	<b>Data Src:</b>	1
<b>Final Well Status:</b>	Water Supply	<b>Date Received:</b>	14-Jan-1958 00:00:00
<b>Water Type:</b>		<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>		<b>Abandonment Rec:</b>	
<b>Audit No:</b>		<b>Contractor:</b>	4713
<b>Tag:</b>		<b>Form Version:</b>	1
<b>Constructn Method:</b>		<b>Owner:</b>	
<b>Elevation (m):</b>		<b>County:</b>	VICTORIA
<b>Elevatn Reliability:</b>		<b>Lot:</b>	015
<b>Depth to Bedrock:</b>		<b>Concession:</b>	06
<b>Well Depth:</b>		<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>		<b>Easting NAD83:</b>	
<b>Pump Rate:</b>		<b>Northing NAD83:</b>	
<b>Static Water Level:</b>		<b>Zone:</b>	
<b>Clear/Cloudy:</b>		<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP		
<b>Site Info:</b>			

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/640\6402590.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402590.pdf)

Additional Detail(s) (Map)

<b>Well Completed Date:</b>	1957/10/15
<b>Year Completed:</b>	1957
<b>Depth (m):</b>	10.668
<b>Latitude:</b>	44.3307930901883
<b>Longitude:</b>	-78.7148135929929
<b>Path:</b>	640\6402590.pdf

Bore Hole Information

<b>Bore Hole ID:</b>	10437620	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Spatial Status:</b>				<b>Zone:</b>	17
<b>Code OB:</b>				<b>East83:</b>	682193.00
<b>Code OB Desc:</b>				<b>North83:</b>	4911154.00
<b>Open Hole:</b>				<b>Org CS:</b>	
<b>Cluster Kind:</b>				<b>UTMRC:</b>	9
<b>Date Completed:</b>		15-Oct-1957 00:00:00	<b>UTMRC Desc:</b>		unknown UTM
<b>Remarks:</b>				<b>Location Method:</b>	p9
<b>Loc Method Desc:</b>		Original Pre1985 UTM Rel Code 9: unknown UTM			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					

**Overburden and Bedrock**

**Materials Interval**

**Formation ID:** 932494851  
**Layer:** 1  
**Color:**  
**General Color:**  
**Mat1:** 02  
**Most Common Material:** TOPSOIL  
**Mat2:**  
**Mat2 Desc:**  
**Mat3:**  
**Mat3 Desc:**  
**Formation Top Depth:** 0.0  
**Formation End Depth:** 2.0  
**Formation End Depth UOM:** ft

**Overburden and Bedrock**

**Materials Interval**

**Formation ID:** 932494853  
**Layer:** 3  
**Color:** 2  
**General Color:** GREY  
**Mat1:** 15  
**Most Common Material:** LIMESTONE  
**Mat2:**  
**Mat2 Desc:**  
**Mat3:**  
**Mat3 Desc:**  
**Formation Top Depth:** 24.0  
**Formation End Depth:** 35.0  
**Formation End Depth UOM:** ft

**Overburden and Bedrock**

**Materials Interval**

**Formation ID:** 932494852  
**Layer:** 2  
**Color:** 6  
**General Color:** BROWN  
**Mat1:** 05  
**Most Common Material:** CLAY  
**Mat2:**  
**Mat2 Desc:**  
**Mat3:**  
**Mat3 Desc:**  
**Formation Top Depth:** 2.0

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Formation End Depth:</b>		24.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966402590			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10986190			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714835			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		24.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714836			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>					
<b>Depth To:</b>		35.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		PUMP			
<b>Pump Test ID:</b>		996402590			
<b>Pump Set At:</b>					
<b>Static Level:</b>		8.0			
<b>Final Level After Pumping:</b>		22.0			
<b>Recommended Pump Depth:</b>					
<b>Pumping Rate:</b>		30.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>					
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		1			
<b>Pumping Duration HR:</b>		2			
<b>Pumping Duration MIN:</b>		0			
<b>Flowing:</b>		No			

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

**Water ID:** 933924550  
**Layer:** 1  
**Kind Code:** 3  
**Kind:** SULPHUR  
**Water Found Depth:** 35.0  
**Water Found Depth UOM:** ft

**Links**

<b>Bore Hole ID:</b> 10437620	<b>Tag No:</b>
<b>Depth M:</b> 10.668	<b>Contractor:</b> 4713
<b>Year Completed:</b> 1957	<b>Path:</b> 640\6402590.pdf
<b>Well Completed Dt:</b> 1957/10/15	<b>Latitude:</b> 44.3307930901883
<b>Audit No:</b>	<b>Longitude:</b> -78.7148135929929

<a href="#">41</a>	1 of 1	W/91.3	252.3 / -0.84	356 LINDSAY ST. S lot 16 con 6 LINDSAY ON	WWIS
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<b>Well ID:</b> 7238852	<b>Flowing (Y/N):</b>
<b>Construction Date:</b>	<b>Flow Rate:</b>
<b>Use 1st:</b>	<b>Data Entry Status:</b>
<b>Use 2nd:</b>	<b>Data Src:</b>
<b>Final Well Status:</b> Alteration	<b>Date Received:</b> 23-Mar-2015 00:00:00
<b>Water Type:</b>	<b>Selected Flag:</b> TRUE
<b>Casing Material:</b>	<b>Abandonment Rec:</b>
<b>Audit No:</b> Z203640	<b>Contractor:</b> 2662
<b>Tag:</b> A170733	<b>Form Version:</b> 7
<b>Constructn Method:</b>	<b>Owner:</b>
<b>Elevation (m):</b>	<b>County:</b> VICTORIA
<b>Elevatn Reliabilty:</b>	<b>Lot:</b> 016
<b>Depth to Bedrock:</b>	<b>Concession:</b> 06
<b>Well Depth:</b>	<b>Concession Name:</b> CON
<b>Overburden/Bedrock:</b>	<b>Easting NAD83:</b>
<b>Pump Rate:</b>	<b>Northing NAD83:</b>
<b>Static Water Level:</b>	<b>Zone:</b>
<b>Clear/Cloudy:</b>	<b>UTM Reliability:</b>
<b>Municipality:</b> OPS TOWNSHIP	
<b>Site Info:</b>	

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/723\7238852.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/723\7238852.pdf)

**Additional Detail(s) (Map)**

**Well Completed Date:** 2015/02/06  
**Year Completed:** 2015  
**Depth (m):**  
**Latitude:** 44.3328359935732  
**Longitude:** -78.7242417720756  
**Path:** 723\7238852.pdf

**Bore Hole Information**

<b>Bore Hole ID:</b> 1005316999	<b>Elevation:</b>
<b>DP2BR:</b>	<b>Elevrc:</b>
<b>Spatial Status:</b>	<b>Zone:</b> 17
<b>Code OB:</b>	<b>East83:</b> 681435.00
<b>Code OB Desc:</b>	<b>North83:</b> 4911360.00
<b>Open Hole:</b>	<b>Org CS:</b> UTM83
<b>Cluster Kind:</b>	<b>UTMRC:</b> 4
<b>Date Completed:</b> 06-Feb-2015 00:00:00	<b>UTMRC Desc:</b> margin of error : 30 m - 100 m

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Remarks:</b>				<b>Location Method:</b>	WWF
<b>Loc Method Desc:</b>		on Water Well Record			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1005583321			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		1.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1005583324			
<b>Layer:</b>		4			
<b>Plug From:</b>		14.0			
<b>Plug To:</b>		14.5			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1005583322			
<b>Layer:</b>		2			
<b>Plug From:</b>		1.0			
<b>Plug To:</b>		5.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1005583325			
<b>Layer:</b>		5			
<b>Plug From:</b>		14.5			
<b>Plug To:</b>		16.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		1005583323			
<b>Layer:</b>		3			
<b>Plug From:</b>		5.0			
<b>Plug To:</b>		14.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		1005583320			
<b>Method Construction Code:</b>					
<b>Method Construction:</b>					
<b>Other Method Construction:</b>					

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

Pipe ID: 1005583314  
 Casing No: 0  
 Comment:  
 Alt Name:

**Construction Record - Casing**

Casing ID: 1005583318  
 Layer: 1  
 Material: 1  
 Open Hole or Material: STEEL  
 Depth From: -2.0  
 Depth To: 5.0  
 Casing Diameter: 6.25  
 Casing Diameter UOM: inch  
 Casing Depth UOM: ft

**Construction Record - Screen**

Screen ID: 1005583319  
 Layer:  
 Slot:  
 Screen Top Depth:  
 Screen End Depth:  
 Screen Material:  
 Screen Depth UOM: ft  
 Screen Diameter UOM: inch  
 Screen Diameter:

**Water Details**

Water ID: 1005583317  
 Layer:  
 Kind Code:  
 Kind:  
 Water Found Depth:  
 Water Found Depth UOM: ft

**Hole Diameter**

Hole ID: 1005583316  
 Diameter:  
 Depth From:  
 Depth To:  
 Hole Depth UOM: ft  
 Hole Diameter UOM: inch

**Links**

Bore Hole ID:	1005316999	Tag No:	A170733
Depth M:		Contractor:	2662
Year Completed:	2015	Path:	723\7238852.pdf
Well Completed Dt:	2015/02/06	Latitude:	44.3328359935732
Audit No:	Z203640	Longitude:	-78.7242417720756

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Order No:</b>	20180510200			<b>Nearest Intersection:</b>	
<b>Status:</b>	C			<b>Municipality:</b>	
<b>Report Type:</b>	Standard Report			<b>Client Prov/State:</b>	BC
<b>Report Date:</b>	17-MAY-18			<b>Search Radius (km):</b>	.25
<b>Date Received:</b>	10-MAY-18			<b>X:</b>	-78.720925
<b>Previous Site Name:</b>				<b>Y:</b>	44.329146
<b>Lot/Building Size:</b>					
<b>Additional Info Ordered:</b>	Fire Insur. Maps and/or Site Plans; Aerial Photos				

<a href="#">43</a>	1 of 1	NW/106.3	254.9 / 1.73	1279 LINDSAY ST SOUTH ON	WWIS
<b>Well ID:</b>	7181573			<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>	Domestic			<b>Data Entry Status:</b>	
<b>Use 2nd:</b>				<b>Data Src:</b>	
<b>Final Well Status:</b>	Water Supply			<b>Date Received:</b>	25-May-2012 00:00:00
<b>Water Type:</b>				<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>	Z100918			<b>Contractor:</b>	7125
<b>Tag:</b>	A076430			<b>Form Version:</b>	7
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliability:</b>				<b>Lot:</b>	
<b>Depth to Bedrock:</b>				<b>Concession:</b>	
<b>Well Depth:</b>				<b>Concession Name:</b>	
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP				
<b>Site Info:</b>					
<b>PDF URL (Map):</b>	<a href="https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/718\7181573.pdf">https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/718\7181573.pdf</a>				

**Additional Detail(s) (Map)**

<b>Well Completed Date:</b>	2012/05/16
<b>Year Completed:</b>	2012
<b>Depth (m):</b>	
<b>Latitude:</b>	44.3378831264536
<b>Longitude:</b>	-78.7272326430709
<b>Path:</b>	718\7181573.pdf

**Bore Hole Information**

<b>Bore Hole ID:</b>	1003804761	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681181.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911914.00
<b>Open Hole:</b>		<b>Org CS:</b>	UTM83
<b>Cluster Kind:</b>		<b>UTMRC:</b>	4
<b>Date Completed:</b>	16-May-2012 00:00:00	<b>UTMRC Desc:</b>	margin of error : 30 m - 100 m
<b>Remarks:</b>		<b>Location Method:</b>	wwr
<b>Loc Method Desc:</b>	on Water Well Record		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
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**Supplier Comment:**

**Annular Space/Abandonment Sealing Record**

**Plug ID:** 1004321384  
**Layer:** 1  
**Plug From:** 0.0  
**Plug To:** 6.599999904632568  
**Plug Depth UOM:** ft

**Method of Construction & Well Use**

**Method Construction ID:** 1004321383  
**Method Construction Code:** 0  
**Method Construction:** Not Known  
**Other Method Construction:**

**Pipe Information**

**Pipe ID:** 1004321375  
**Casing No:** 0  
**Comment:**  
**Alt Name:**

**Construction Record - Casing**

**Casing ID:** 1004321380  
**Layer:** 1  
**Material:** 1  
**Open Hole or Material:** STEEL  
**Depth From:** -1.5  
**Depth To:**  
**Casing Diameter:** 6.25  
**Casing Diameter UOM:** inch  
**Casing Depth UOM:** ft

**Construction Record - Screen**

**Screen ID:** 1004321381  
**Layer:**  
**Slot:**  
**Screen Top Depth:**  
**Screen End Depth:**  
**Screen Material:**  
**Screen Depth UOM:** ft  
**Screen Diameter UOM:** inch  
**Screen Diameter:**

**Results of Well Yield Testing**

**Pumping Test Method Desc:**  
**Pump Test ID:** 1004321376  
**Pump Set At:**  
**Static Level:** 11.5  
**Final Level After Pumping:**  
**Recommended Pump Depth:**  
**Pumping Rate:**  
**Flowing Rate:**  
**Recommended Pump Rate:**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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**Levels UOM:** ft  
**Rate UOM:** GPM  
**Water State After Test Code:** 0  
**Water State After Test:**  
**Pumping Test Method:** 0  
**Pumping Duration HR:**  
**Pumping Duration MIN:**  
**Flowing:**

**Water Details**

**Water ID:** 1004321379  
**Layer:** 1  
**Kind Code:** 9  
**Kind:** Other  
**Water Found Depth:**  
**Water Found Depth UOM:** ft

**Hole Diameter**

**Hole ID:** 1004321378  
**Diameter:**  
**Depth From:**  
**Depth To:**  
**Hole Depth UOM:** ft  
**Hole Diameter UOM:** inch

**Links**

<b>Bore Hole ID:</b>	1003804761	<b>Tag No:</b>	A076430
<b>Depth M:</b>		<b>Contractor:</b>	7125
<b>Year Completed:</b>	2012	<b>Path:</b>	718\7181573.pdf
<b>Well Completed Dt:</b>	2012/05/16	<b>Latitude:</b>	44.3378831264536
<b>Audit No:</b>	Z100918	<b>Longitude:</b>	-78.7272326430709

<a href="#">44</a>	1 of 1	W/111.0	247.8 / -5.31	lot 16 con 5 ON	WWIS
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<b>Well ID:</b>	6402526	<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>		<b>Flow Rate:</b>	
<b>Use 1st:</b>	Domestic	<b>Data Entry Status:</b>	
<b>Use 2nd:</b>	0	<b>Data Src:</b>	1
<b>Final Well Status:</b>	Water Supply	<b>Date Received:</b>	03-Jan-1961 00:00:00
<b>Water Type:</b>		<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>		<b>Abandonment Rec:</b>	
<b>Audit No:</b>		<b>Contractor:</b>	2518
<b>Tag:</b>		<b>Form Version:</b>	1
<b>Constructn Method:</b>		<b>Owner:</b>	
<b>Elevation (m):</b>		<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>		<b>Lot:</b>	016
<b>Depth to Bedrock:</b>		<b>Concession:</b>	05
<b>Well Depth:</b>		<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>		<b>Easting NAD83:</b>	
<b>Pump Rate:</b>		<b>Northing NAD83:</b>	
<b>Static Water Level:</b>		<b>Zone:</b>	
<b>Clear/Cloudy:</b>		<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP		
<b>Site Info:</b>			

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/640\6402526.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402526.pdf)

**Additional Detail(s) (Map)**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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**Well Completed Date:** 1960/11/29  
**Year Completed:** 1960  
**Depth (m):** 10.9728  
**Latitude:** 44.3335503903295  
**Longitude:** -78.7262084821688  
**Path:** 640\6402526.pdf

**Bore Hole Information**

<b>Bore Hole ID:</b>	10437557	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681276.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911435.00
<b>Open Hole:</b>		<b>Org CS:</b>	
<b>Cluster Kind:</b>		<b>UTMRC:</b>	5
<b>Date Completed:</b>	29-Nov-1960 00:00:00	<b>UTMRC Desc:</b>	margin of error : 100 m - 300 m
<b>Remarks:</b>		<b>Location Method:</b>	p5
<b>Loc Method Desc:</b>	Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			
<b>Supplier Comment:</b>			

**Overburden and Bedrock**  
**Materials Interval**

**Formation ID:** 932494655  
**Layer:** 1  
**Color:**  
**General Color:**  
**Mat1:** 23  
**Most Common Material:** PREVIOUSLY DUG  
**Mat2:**  
**Mat2 Desc:**  
**Mat3:**  
**Mat3 Desc:**  
**Formation Top Depth:** 0.0  
**Formation End Depth:** 17.0  
**Formation End Depth UOM:** ft

**Overburden and Bedrock**  
**Materials Interval**

**Formation ID:** 932494656  
**Layer:** 2  
**Color:**  
**General Color:**  
**Mat1:** 11  
**Most Common Material:** GRAVEL  
**Mat2:**  
**Mat2 Desc:**  
**Mat3:**  
**Mat3 Desc:**  
**Formation Top Depth:** 17.0  
**Formation End Depth:** 22.0  
**Formation End Depth UOM:** ft

**Overburden and Bedrock**

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494657			
<b>Layer:</b>		3			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		17			
<b>Most Common Material:</b>		SHALE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		22.0			
<b>Formation End Depth:</b>		27.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494658			
<b>Layer:</b>		4			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		27.0			
<b>Formation End Depth:</b>		36.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966402526			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10986127			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714733			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		17.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Casing</u></b>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Casing ID:</b>		930714734			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>					
<b>Depth To:</b>		36.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			

**Results of Well Yield Testing**

<b>Pumping Test Method Desc:</b>	PUMP
<b>Pump Test ID:</b>	996402526
<b>Pump Set At:</b>	
<b>Static Level:</b>	10.0
<b>Final Level After Pumping:</b>	30.0
<b>Recommended Pump Depth:</b>	10.0
<b>Pumping Rate:</b>	8.0
<b>Flowing Rate:</b>	
<b>Recommended Pump Rate:</b>	5.0
<b>Levels UOM:</b>	ft
<b>Rate UOM:</b>	GPM
<b>Water State After Test Code:</b>	1
<b>Water State After Test:</b>	CLEAR
<b>Pumping Test Method:</b>	1
<b>Pumping Duration HR:</b>	3
<b>Pumping Duration MIN:</b>	0
<b>Flowing:</b>	No

**Water Details**

<b>Water ID:</b>	933924498
<b>Layer:</b>	1
<b>Kind Code:</b>	1
<b>Kind:</b>	FRESH
<b>Water Found Depth:</b>	36.0
<b>Water Found Depth UOM:</b>	ft

**Links**

<b>Bore Hole ID:</b>	10437557	<b>Tag No:</b>	
<b>Depth M:</b>	10.9728	<b>Contractor:</b>	2518
<b>Year Completed:</b>	1960	<b>Path:</b>	640\6402526.pdf
<b>Well Completed Dt:</b>	1960/11/29	<b>Latitude:</b>	44.3335503903295
<b>Audit No:</b>		<b>Longitude:</b>	-78.7262084821688

<a href="#">45</a>	1 of 1	W/115.7	251.9 / -1.24	lot 16 con 5 ON	WWIS
<b>Well ID:</b>	6402531	<b>Flowing (Y/N):</b>			
<b>Construction Date:</b>		<b>Flow Rate:</b>			
<b>Use 1st:</b>	Domestic	<b>Data Entry Status:</b>			
<b>Use 2nd:</b>	0	<b>Data Src:</b>	1		
<b>Final Well Status:</b>	Water Supply	<b>Date Received:</b>	23-Jan-1966 00:00:00		
<b>Water Type:</b>		<b>Selected Flag:</b>	TRUE		
<b>Casing Material:</b>		<b>Abandonment Rec:</b>			
<b>Audit No:</b>		<b>Contractor:</b>	2518		
<b>Tag:</b>		<b>Form Version:</b>	1		
<b>Constructn Method:</b>		<b>Owner:</b>			
<b>Elevation (m):</b>		<b>County:</b>	VICTORIA		
<b>Elevatn Reliabilty:</b>		<b>Lot:</b>	016		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Depth to Bedrock:				Concession:	05
Well Depth:				Concession Name:	CON
Overburden/Bedrock:				Easting NAD83:	
Pump Rate:				Northing NAD83:	
Static Water Level:				Zone:	
Clear/Cloudy:				UTM Reliability:	
Municipality:		OPS TOWNSHIP			
Site Info:					

PDF URL (Map): [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/640\6402531.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402531.pdf)

#### Additional Detail(s) (Map)

Well Completed Date: 1965/09/01  
Year Completed: 1965  
Depth (m): 8.2296  
Latitude: 44.3339342078212  
Longitude: -78.7264946800228  
Path: 640\6402531.pdf

#### Bore Hole Information

Bore Hole ID:	10437562	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	681252.00
Code OB Desc:		North83:	4911477.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	9
Date Completed:	01-Sep-1965 00:00:00	UTMRC Desc:	unknown UTM
Remarks:		Location Method:	p9
Loc Method Desc:	Original Pre1985 UTM Rel Code 9: unknown UTM		
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

#### Overburden and Bedrock

##### Materials Interval

Formation ID: 932494672  
Layer: 1  
Color: 6  
General Color: BROWN  
Mat1: 05  
Most Common Material: CLAY  
Mat2:  
Mat2 Desc:  
Mat3:  
Mat3 Desc:  
Formation Top Depth: 0.0  
Formation End Depth: 15.0  
Formation End Depth UOM: ft

#### Overburden and Bedrock

##### Materials Interval

Formation ID: 932494673  
Layer: 2  
Color:

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>General Color:</b>					
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		13			
<b>Mat2 Desc:</b>		BOULDERS			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		15.0			
<b>Formation End Depth:</b>		23.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932494674			
<b>Layer:</b>		3			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		23.0			
<b>Formation End Depth:</b>		27.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966402531			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10986132			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714742			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>					
<b>Depth To:</b>		27.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714741			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Depth To:		23.0			
Casing Diameter:		6.0			
Casing Diameter UOM:		inch			
Casing Depth UOM:		ft			

**Results of Well Yield Testing**

Pumping Test Method Desc:	PUMP
Pump Test ID:	996402531
Pump Set At:	
Static Level:	10.0
Final Level After Pumping:	23.0
Recommended Pump Depth:	25.0
Pumping Rate:	4.0
Flowing Rate:	
Recommended Pump Rate:	4.0
Levels UOM:	ft
Rate UOM:	GPM
Water State After Test Code:	1
Water State After Test:	CLEAR
Pumping Test Method:	1
Pumping Duration HR:	2
Pumping Duration MIN:	30
Flowing:	No

**Water Details**

Water ID:	933924503
Layer:	1
Kind Code:	1
Kind:	FRESH
Water Found Depth:	25.0
Water Found Depth UOM:	ft

**Links**

Bore Hole ID:	10437562	Tag No:	
Depth M:	8.2296	Contractor:	2518
Year Completed:	1965	Path:	6406402531.pdf
Well Completed Dt:	1965/09/01	Latitude:	44.3339342078212
Audit No:		Longitude:	-78.7264946800228

<a href="#">46</a>	1 of 1	ESE/150.2	258.8 / 5.66	lot 15 con 6 ON	WWIS
Well ID:	6416505	Flowing (Y/N):			
Construction Date:		Flow Rate:			
Use 1st:	Domestic	Data Entry Status:			
Use 2nd:	Industrial	Data Src:	1		
Final Well Status:	Water Supply	Date Received:	14-Jun-2001 00:00:00		
Water Type:		Selected Flag:	TRUE		
Casing Material:		Abandonment Rec:			
Audit No:	229216	Contractor:	3136		
Tag:		Form Version:	1		
Constructn Method:		Owner:			
Elevation (m):		County:	VICTORIA		
Elevatn Reliabilty:		Lot:	015		
Depth to Bedrock:		Concession:	06		
Well Depth:		Concession Name:	CON		
Overburden/Bedrock:		Easting NAD83:			
Pump Rate:		Northing NAD83:			
Static Water Level:		Zone:			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Clear/Cloudy:</b> <b>Municipality:</b> <b>Site Info:</b>		OPS TOWNSHIP		<b>UTM Reliability:</b>	
<b>PDF URL (Map):</b>		https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/641\6416505.pdf			
<b><u>Additional Detail(s) (Map)</u></b>					
<b>Well Completed Date:</b> <b>Year Completed:</b> <b>Depth (m):</b> <b>Latitude:</b> <b>Longitude:</b> <b>Path:</b>		2001/05/02 2001 12.4968 44.3312107595911 -78.7131919144301 641\6416505.pdf			
<b><u>Bore Hole Information</u></b>					
<b>Bore Hole ID:</b> <b>DP2BR:</b> <b>Spatial Status:</b> <b>Code OB:</b> <b>Code OB Desc:</b> <b>Open Hole:</b> <b>Cluster Kind:</b> <b>Date Completed:</b> <b>Remarks:</b> <b>Loc Method Desc:</b> <b>Elevrc Desc:</b> <b>Location Source Date:</b> <b>Improvement Location Source:</b> <b>Improvement Location Method:</b> <b>Source Revision Comment:</b> <b>Supplier Comment:</b>	10451430			<b>Elevation:</b> <b>Elevrc:</b> <b>Zone:</b> <b>East83:</b> <b>North83:</b> <b>Org CS:</b> <b>UTMRC:</b> <b>UTMRC Desc:</b> <b>Location Method:</b>	17 682321.00 4911204.00 N83 3 margin of error : 10 - 30 m
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b> <b>Layer:</b> <b>Color:</b> <b>General Color:</b> <b>Mat1:</b> <b>Most Common Material:</b> <b>Mat2:</b> <b>Mat2 Desc:</b> <b>Mat3:</b> <b>Mat3 Desc:</b> <b>Formation Top Depth:</b> <b>Formation End Depth:</b> <b>Formation End Depth UOM:</b>		932542626 3 2 GREY 05 CLAY 12 STONES 73 HARD 18.0 36.0 ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b> <b>Layer:</b> <b>Color:</b> <b>General Color:</b> <b>Mat1:</b> <b>Most Common Material:</b> <b>Mat2:</b> <b>Mat2 Desc:</b>		932542627 4 2 GREY 15 LIMESTONE 74 LAYERED			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		36.0			
<b>Formation End Depth:</b>		41.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932542625			
<b>Layer:</b>		2			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		73			
<b>Mat2 Desc:</b>		HARD			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		1.0			
<b>Formation End Depth:</b>		18.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock Materials Interval</u></b>					
<b>Formation ID:</b>		932542624			
<b>Layer:</b>		1			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		1.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		933208806			
<b>Layer:</b>		1			
<b>Plug From:</b>		0.0			
<b>Plug To:</b>		4.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Annular Space/Abandonment Sealing Record</u></b>					
<b>Plug ID:</b>		933208807			
<b>Layer:</b>		2			
<b>Plug From:</b>		4.0			
<b>Plug To:</b>		11.0			
<b>Plug Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966416505			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Method Construction Code:</b>	1				
<b>Method Construction:</b>	Cable Tool				
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>	11000000				
<b>Casing No:</b>	1				
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>	930732857				
<b>Layer:</b>	2				
<b>Material:</b>	4				
<b>Open Hole or Material:</b>	OPEN HOLE				
<b>Depth From:</b>					
<b>Depth To:</b>					
<b>Casing Diameter:</b>	6.0				
<b>Casing Diameter UOM:</b>	inch				
<b>Casing Depth UOM:</b>	ft				
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>	930732856				
<b>Layer:</b>	1				
<b>Material:</b>	1				
<b>Open Hole or Material:</b>	STEEL				
<b>Depth From:</b>					
<b>Depth To:</b>					
<b>Casing Diameter:</b>	6.0				
<b>Casing Diameter UOM:</b>	inch				
<b>Casing Depth UOM:</b>	ft				
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>	PUMP				
<b>Pump Test ID:</b>	996416505				
<b>Pump Set At:</b>					
<b>Static Level:</b>	8.0				
<b>Final Level After Pumping:</b>	21.0				
<b>Recommended Pump Depth:</b>	38.0				
<b>Pumping Rate:</b>	20.0				
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>	20.0				
<b>Levels UOM:</b>	ft				
<b>Rate UOM:</b>	GPM				
<b>Water State After Test Code:</b>	1				
<b>Water State After Test:</b>	CLEAR				
<b>Pumping Test Method:</b>	1				
<b>Pumping Duration HR:</b>	1				
<b>Pumping Duration MIN:</b>	10				
<b>Flowing:</b>	No				
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>	935129054				
<b>Test Type:</b>					
<b>Test Duration:</b>	60				
<b>Test Level:</b>	21.0				
<b>Test Level UOM:</b>	ft				

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Draw Down & Recovery

Pump Test Detail ID: 934340620  
 Test Type:  
 Test Duration: 15  
 Test Level: 14.0  
 Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934611068  
 Test Type:  
 Test Duration: 30  
 Test Level: 17.0  
 Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934865874  
 Test Type:  
 Test Duration: 45  
 Test Level: 19.0  
 Test Level UOM: ft

Water Details

Water ID: 933938503  
 Layer: 2  
 Kind Code: 1  
 Kind: FRESH  
 Water Found Depth: 40.0  
 Water Found Depth UOM: ft

Water Details

Water ID: 933938502  
 Layer: 1  
 Kind Code: 1  
 Kind: FRESH  
 Water Found Depth: 38.0  
 Water Found Depth UOM: ft

Links

Bore Hole ID:	10451430	Tag No:	
Depth M:	12.4968	Contractor:	3136
Year Completed:	2001	Path:	641\6416505.pdf
Well Completed Dt:	2001/05/02	Latitude:	44.3312107595911
Audit No:	229216	Longitude:	-78.7131919144301

<a href="#">47</a>	1 of 1	NW/153.5	253.8 / 0.69	323 LINDSAY STREET SOUTH LINDSAY ON	HINC
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External File Num: FS INC 0812-07632  
 Fuel Occurrence Type: Fire  
 Date of Occurrence: 10/22/2008  
 Fuel Type Involved: Regulated Fuel Not Involved  
 Status Desc: Completed - No Action Required  
 Job Type Desc: Incident/Near-Miss Occurrence (FS)

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Oper. Type Involved:</b> <b>Service Interruptions:</b> <b>Property Damage:</b> <b>Fuel Life Cycle Stage:</b> <b>Root Cause:</b> <b>Reported Details:</b> <b>Fuel Category:</b> <b>Occurrence Type:</b> <b>Affiliation:</b> <b>County Name:</b> <b>Approx. Quant. Rel:</b> <b>Nearby body of water:</b> <b>Enter Drainage Syst.:</b> <b>Approx. Quant. Unit:</b> <b>Environmental Impact:</b>		Commercial (e.g. restaurant, business unit, etc) Yes No Utilization  OFM requesting TSSA assistance. Unknown Incident Safety Authorities (MOL, ESA, Insurers, etc.) Kawartha Lakes			
<a href="#">48</a>	1 of 17	NW/180.9	254.4 / 1.26	LINDSAY GOLF AND COUNTRY CLUB 282 Lindsay Street South Lindsay ON K9V 4R5	GEN
<b>Generator No:</b> <b>SIC Code:</b> <b>SIC Description:</b> <b>Approval Years:</b> <b>PO Box No:</b> <b>Country:</b> <b>Status:</b> <b>Co Admin:</b> <b>Choice of Contact:</b> <b>Phone No Admin:</b> <b>Contaminated Facility:</b> <b>MHSW Facility:</b>		ON1374581  03,04			
<a href="#">48</a>	2 of 17	NW/180.9	254.4 / 1.26	Lindsay Golf and Country Club (1965) Incorporated 282 Lindsay St S Kawartha Lakes ON	CA
<b>Certificate #:</b> <b>Application Year:</b> <b>Issue Date:</b> <b>Approval Type:</b> <b>Status:</b> <b>Application Type:</b> <b>Client Name:</b> <b>Client Address:</b> <b>Client City:</b> <b>Client Postal Code:</b> <b>Project Description:</b> <b>Contaminants:</b> <b>Emission Control:</b>		1760-777QJP 2007 9/27/2007 Municipal and Private Sewage Works Approved			
<a href="#">48</a>	3 of 17	NW/180.9	254.4 / 1.26	Lindsay Golf and Country Club (1965) Incorporated 282 Lindsay Street South Kawartha Lakes ON	CA
<b>Certificate #:</b> <b>Application Year:</b> <b>Issue Date:</b> <b>Approval Type:</b>		3008-5SQKVJ 2003 11/24/2003 Municipal and Private Sewage Works			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Status:</b> <b>Application Type:</b> <b>Client Name:</b> <b>Client Address:</b> <b>Client City:</b> <b>Client Postal Code:</b> <b>Project Description:</b> <b>Contaminants:</b> <b>Emission Control:</b>		Revoked and/or Replaced			
<a href="#">48</a>	4 of 17	NW/180.9	254.4 / 1.26	LINDSAY GOLF AND COUNTRY CLUB 282 Lindsay Street South Lindsay ON K9V 4R5	GEN
<b>Generator No:</b> <b>SIC Code:</b> <b>SIC Description:</b> <b>Approval Years:</b> <b>PO Box No:</b> <b>Country:</b> <b>Status:</b> <b>Co Admin:</b> <b>Choice of Contact:</b> <b>Phone No Admin:</b> <b>Contaminated Facility:</b> <b>MHSW Facility:</b>		ON1374581 713910 Golf Courses and Country Clubs 2009			
<b>Detail(s)</b>					
<b>Waste Class:</b>		213			
<b>Waste Class Name:</b>		PETROLEUM DISTILLATES			
<b>Waste Class:</b>		252			
<b>Waste Class Name:</b>		WASTE OILS & LUBRICANTS			
<a href="#">48</a>	5 of 17	NW/180.9	254.4 / 1.26	LINDSAY GOLF AND COUNTRY CLUB 282 Lindsay Street South Lindsay ON K9V 4R5	GEN
<b>Generator No:</b> <b>SIC Code:</b> <b>SIC Description:</b> <b>Approval Years:</b> <b>PO Box No:</b> <b>Country:</b> <b>Status:</b> <b>Co Admin:</b> <b>Choice of Contact:</b> <b>Phone No Admin:</b> <b>Contaminated Facility:</b> <b>MHSW Facility:</b>		ON1374581 713910 Golf Courses and Country Clubs 2010			
<b>Detail(s)</b>					
<b>Waste Class:</b>		252			
<b>Waste Class Name:</b>		WASTE OILS & LUBRICANTS			
<b>Waste Class:</b>		213			
<b>Waste Class Name:</b>		PETROLEUM DISTILLATES			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<a href="#">48</a>	6 of 17	NW/180.9	254.4 / 1.26	LINDSAY GOLF AND COUNTRY CLUB 282 Lindsay Street South Lindsay ON K9V 4R5	GEN
<b>Generator No:</b> <b>SIC Code:</b> <b>SIC Description:</b> <b>Approval Years:</b> <b>PO Box No:</b> <b>Country:</b> <b>Status:</b> <b>Co Admin:</b> <b>Choice of Contact:</b> <b>Phone No Admin:</b> <b>Contaminated Facility:</b> <b>MHSW Facility:</b>		ON1374581 713910 Golf Courses and Country Clubs 2011			
<b><u>Detail(s)</u></b>					
<b>Waste Class:</b>		213			
<b>Waste Class Name:</b>		PETROLEUM DISTILLATES			
<b>Waste Class:</b>		252			
<b>Waste Class Name:</b>		WASTE OILS & LUBRICANTS			
<a href="#">48</a>	7 of 17	NW/180.9	254.4 / 1.26	LINDSAY GOLF AND COUNTRY CLUB 282 Lindsay Street South Lindsay ON K9V 4R5	GEN
<b>Generator No:</b> <b>SIC Code:</b> <b>SIC Description:</b> <b>Approval Years:</b> <b>PO Box No:</b> <b>Country:</b> <b>Status:</b> <b>Co Admin:</b> <b>Choice of Contact:</b> <b>Phone No Admin:</b> <b>Contaminated Facility:</b> <b>MHSW Facility:</b>		ON1374581 713910 Golf Courses and Country Clubs 2012			
<b><u>Detail(s)</u></b>					
<b>Waste Class:</b>		252			
<b>Waste Class Name:</b>		WASTE OILS & LUBRICANTS			
<b>Waste Class:</b>		213			
<b>Waste Class Name:</b>		PETROLEUM DISTILLATES			
<a href="#">48</a>	8 of 17	NW/180.9	254.4 / 1.26	LINDSAY GOLF AND COUNTRY CLUB 282 Lindsay Street South Lindsay ON	GEN
<b>Generator No:</b> <b>SIC Code:</b> <b>SIC Description:</b> <b>Approval Years:</b> <b>PO Box No:</b> <b>Country:</b> <b>Status:</b> <b>Co Admin:</b> <b>Choice of Contact:</b>		ON1374581 713910 GOLF COURSES AND COUNTRY CLUBS 2013			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Phone No Admin:</b> <b>Contaminated Facility:</b> <b>MHSW Facility:</b>					
<b>Detail(s)</b>					
<b>Waste Class:</b>		213			
<b>Waste Class Name:</b>		PETROLEUM DISTILLATES			
<b>Waste Class:</b>		252			
<b>Waste Class Name:</b>		WASTE OILS & LUBRICANTS			
<a href="#">48</a>	9 of 17	NW/180.9	254.4 / 1.26	Lindsay Golf and Country Club (1965) Incorporated 282 Lindsay St S Kawartha Lakes ON K9V 4R8	ECA
<b>Approval No:</b>		1760-777QJP		<b>MOE District:</b> Peterborough	
<b>Approval Date:</b>		2007-09-27		<b>City:</b>	
<b>Status:</b>		Approved		<b>Longitude:</b> -78.727234	
<b>Record Type:</b>		ECA		<b>Latitude:</b> 44.338963	
<b>Link Source:</b>		IDS		<b>Geometry X:</b>	
<b>SWP Area Name:</b>		Kawartha-Haliburton		<b>Geometry Y:</b>	
<b>Approval Type:</b>		ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS			
<b>Project Type:</b>		MUNICIPAL AND PRIVATE SEWAGE WORKS			
<b>Business Name:</b>		Lindsay Golf and Country Club (1965) Incorporated			
<b>Address:</b>		282 Lindsay St S			
<b>Full Address:</b>					
<b>Full PDF Link:</b>		<a href="https://www.accessenvironment.ene.gov.on.ca/instruments/6963-75URDK-14.pdf">https://www.accessenvironment.ene.gov.on.ca/instruments/6963-75URDK-14.pdf</a>			
<b>PDF Site Location:</b>					
<a href="#">48</a>	10 of 17	NW/180.9	254.4 / 1.26	Lindsay Golf and Country Club (1965) Incorporated 282 Lindsay Street South Kawartha Lakes ON K9V 4R8	ECA
<b>Approval No:</b>		3008-5SQKVJ		<b>MOE District:</b> Peterborough	
<b>Approval Date:</b>		2003-11-24		<b>City:</b>	
<b>Status:</b>		Revoked and/or Replaced		<b>Longitude:</b> -78.727234	
<b>Record Type:</b>		ECA		<b>Latitude:</b> 44.338963	
<b>Link Source:</b>		IDS		<b>Geometry X:</b>	
<b>SWP Area Name:</b>		Kawartha-Haliburton		<b>Geometry Y:</b>	
<b>Approval Type:</b>		ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS			
<b>Project Type:</b>		MUNICIPAL AND PRIVATE SEWAGE WORKS			
<b>Business Name:</b>		Lindsay Golf and Country Club (1965) Incorporated			
<b>Address:</b>		282 Lindsay Street South			
<b>Full Address:</b>					
<b>Full PDF Link:</b>		<a href="https://www.accessenvironment.ene.gov.on.ca/instruments/4737-5P4L3D-14.pdf">https://www.accessenvironment.ene.gov.on.ca/instruments/4737-5P4L3D-14.pdf</a>			
<b>PDF Site Location:</b>					
<a href="#">48</a>	11 of 17	NW/180.9	254.4 / 1.26	LINDSAY GOLF AND COUNTRY CLUB 282 Lindsay Street South Lindsay ON K9V 4R5	GEN
<b>Generator No:</b>		ON1374581			
<b>SIC Code:</b>		713910			
<b>SIC Description:</b>		GOLF COURSES AND COUNTRY CLUBS			
<b>Approval Years:</b>		2015			
<b>PO Box No:</b>					
<b>Country:</b>		Canada			
<b>Status:</b>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Co Admin:</b> <b>Choice of Contact:</b> <b>Phone No Admin:</b> <b>Contaminated Facility:</b> <b>MHSW Facility:</b>		Jeanine A Corneil CO_OFFICIAL 705-328-2258 Ext.21 No No			
<b><u>Detail(s)</u></b>					
<b>Waste Class:</b>		252			
<b>Waste Class Name:</b>		WASTE OILS & LUBRICANTS			
<b>Waste Class:</b>		213			
<b>Waste Class Name:</b>		PETROLEUM DISTILLATES			
<a href="#">48</a>	12 of 17	<b>NW/180.9</b>	<b>254.4 / 1.26</b>	<b>LINDSAY GOLF AND COUNTRY CLUB 282 Lindsay Street South Lindsay ON K9V 4R5</b>	<b>GEN</b>
<b>Generator No:</b> <b>SIC Code:</b> <b>SIC Description:</b> <b>Approval Years:</b> <b>PO Box No:</b> <b>Country:</b> <b>Status:</b> <b>Co Admin:</b> <b>Choice of Contact:</b> <b>Phone No Admin:</b> <b>Contaminated Facility:</b> <b>MHSW Facility:</b>		ON1374581 713910 GOLF COURSES AND COUNTRY CLUBS 2016 Canada Jeanine A Corneil CO_OFFICIAL 705-328-2258 Ext.21 No No			
<b><u>Detail(s)</u></b>					
<b>Waste Class:</b>		252			
<b>Waste Class Name:</b>		WASTE OILS & LUBRICANTS			
<b>Waste Class:</b>		213			
<b>Waste Class Name:</b>		PETROLEUM DISTILLATES			
<a href="#">48</a>	13 of 17	<b>NW/180.9</b>	<b>254.4 / 1.26</b>	<b>LINDSAY GOLF AND COUNTRY CLUB 282 Lindsay Street South Lindsay ON K9V 4R5</b>	<b>GEN</b>
<b>Generator No:</b> <b>SIC Code:</b> <b>SIC Description:</b> <b>Approval Years:</b> <b>PO Box No:</b> <b>Country:</b> <b>Status:</b> <b>Co Admin:</b> <b>Choice of Contact:</b> <b>Phone No Admin:</b> <b>Contaminated Facility:</b> <b>MHSW Facility:</b>		ON1374581 713910 GOLF COURSES AND COUNTRY CLUBS 2014 Canada Jeanine A Corneil CO_OFFICIAL 705-328-2258 Ext.21 No No			
<b><u>Detail(s)</u></b>					
<b>Waste Class:</b>		213			
<b>Waste Class Name:</b>		PETROLEUM DISTILLATES			
<b>Waste Class:</b>		252			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Waste Class Name:</b>		WASTE OILS & LUBRICANTS			
<a href="#">48</a>	14 of 17	NW/180.9	254.4 / 1.26	LINDSAY GOLF AND COUNTRY CLUB 282 Lindsay Street South Lindsay ON K9V 4R5	GEN
<b>Generator No:</b>		ON1374581			
<b>SIC Code:</b>					
<b>SIC Description:</b>					
<b>Approval Years:</b>		As of Dec 2018			
<b>PO Box No:</b>					
<b>Country:</b>		Canada			
<b>Status:</b>		Registered			
<b>Co Admin:</b>					
<b>Choice of Contact:</b>					
<b>Phone No Admin:</b>					
<b>Contaminated Facility:</b>					
<b>MHSW Facility:</b>					
<b><u>Detail(s)</u></b>					
<b>Waste Class:</b>		213 I			
<b>Waste Class Name:</b>		Petroleum distillates			
<b>Waste Class:</b>		252 L			
<b>Waste Class Name:</b>		Waste crankcase oils and lubricants			
<a href="#">48</a>	15 of 17	NW/180.9	254.4 / 1.26	LINDSAY GOLF AND COUNTRY CLUB 282 Lindsay Street South Lindsay ON K9V 4R5	GEN
<b>Generator No:</b>		ON1374581			
<b>SIC Code:</b>					
<b>SIC Description:</b>					
<b>Approval Years:</b>		As of Jul 2020			
<b>PO Box No:</b>					
<b>Country:</b>		Canada			
<b>Status:</b>		Registered			
<b>Co Admin:</b>					
<b>Choice of Contact:</b>					
<b>Phone No Admin:</b>					
<b>Contaminated Facility:</b>					
<b>MHSW Facility:</b>					
<b><u>Detail(s)</u></b>					
<b>Waste Class:</b>		213 I			
<b>Waste Class Name:</b>		Petroleum distillates			
<b>Waste Class:</b>		252 L			
<b>Waste Class Name:</b>		Waste crankcase oils and lubricants			
<a href="#">48</a>	16 of 17	NW/180.9	254.4 / 1.26	Lindsay Golf and Country Club (1965) Incorporated 282 Lindsay Street South Lindsay, ON Canada ON	PTTW
<b>EBR Registry No:</b>		019-2691		<b>Decision Posted:</b> December 29, 2020	
<b>Ministry Ref No:</b>		1000100836		<b>Exception Posted:</b>	
<b>Notice Type:</b>		Instrument		<b>Section:</b> Section 34	
<b>Notice Stage:</b>		Decision		<b>Act 1:</b> Ontario Water Resources Act, R.S.O. 1990	
<b>Notice Date:</b>				<b>Act 2:</b> Ontario Water Resources Act	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Proposal Date:</b>	November 12, 2020			<b>Site Location Map:</b>	44.337832,-78.726725
<b>Year:</b>	2020				
<b>Instrument Type:</b>	Permit to take water				
<b>Off Instrument Name:</b>	Permit to Take Water (OWRA s. 34)				
<b>Posted By:</b>	Ministry of the Environment, Conservation and Parks				
<b>Company Name:</b>					
<b>Site Address:</b>	282 Lindsay Street South Lindsay, ON Canada				
<b>Location Other:</b>					
<b>Proponent Name:</b>	Lindsay Golf and Country Club (1965) Incorporated				
<b>Proponent Address:</b>	Lindsay Golf and Country Club (1965) Incorporated 282 Lindsay Street South Lindsay, ON K6V 4R5 Canada				
<b>Comment Period:</b>	November 12, 2020 - December 12, 2020 (30 days) Closed				
<b>URL:</b>	https://ero.ontario.ca/notice/019-2691				

**Site Location Details:**

<a href="#">48</a>	17 of 17	NW/180.9	254.4 / 1.26	LINDSAY GOLF AND COUNTRY CLUB 282 Lindsay Street South Lindsay ON K9V 4R5	GEN
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**Generator No:** ON1374581  
**SIC Code:**  
**SIC Description:**  
**Approval Years:** As of Nov 2021  
**PO Box No:**  
**Country:** Canada  
**Status:** Registered  
**Co Admin:**  
**Choice of Contact:**  
**Phone No Admin:**  
**Contaminated Facility:**  
**MHSW Facility:**

Detail(s)

**Waste Class:** 252 L  
**Waste Class Name:** Waste crankcase oils and lubricants  
**Waste Class:** 213 I  
**Waste Class Name:** Petroleum distillates

<a href="#">49</a>	1 of 1	NW/181.4	254.4 / 1.26	LINDSAY GOLF AND COUNTRY CLUB 282 Lindsay Street South Lindsay ON K9V 4R5	GEN
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**Generator No:** ON1374581  
**SIC Code:**  
**SIC Description:**  
**Approval Years:** As of Oct 2022  
**PO Box No:**  
**Country:** Canada  
**Status:** Registered  
**Co Admin:**  
**Choice of Contact:**  
**Phone No Admin:**  
**Contaminated Facility:**  
**MHSW Facility:**

Detail(s)

**Waste Class:** 213 I  
**Waste Class Name:** PETROLEUM DISTILLATES

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Waste Class:</b>		252 L			
<b>Waste Class Name:</b>		WASTE OILS & LUBRICANTS			

<a href="#">50</a>	1 of 2	<a href="#">ESE/184.6</a>	<a href="#">259.9 / 6.73</a>	<a href="#">lot 15 con 6 ON</a>	<a href="#">WWIS</a>
<b>Well ID:</b>	6405829			<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>	Domestic			<b>Data Entry Status:</b>	
<b>Use 2nd:</b>	0			<b>Data Src:</b>	1
<b>Final Well Status:</b>	Water Supply			<b>Date Received:</b>	18-Dec-1974 00:00:00
<b>Water Type:</b>				<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>				<b>Contractor:</b>	2518
<b>Tag:</b>				<b>Form Version:</b>	1
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>				<b>Lot:</b>	015
<b>Depth to Bedrock:</b>				<b>Concession:</b>	06
<b>Well Depth:</b>				<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP				
<b>Site Info:</b>					

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/640\6405829.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6405829.pdf)

**Additional Detail(s) (Map)**

**Well Completed Date:** 1974/04/26  
**Year Completed:** 1974  
**Depth (m):** 9.7536  
**Latitude:** 44.3304836056311  
**Longitude:** -78.7132954388456  
**Path:** 640\6405829.pdf

**Bore Hole Information**

<b>Bore Hole ID:</b>	10440836	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	682315.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911123.00
<b>Open Hole:</b>		<b>Org CS:</b>	
<b>Cluster Kind:</b>		<b>UTMRC:</b>	4
<b>Date Completed:</b>	26-Apr-1974 00:00:00	<b>UTMRC Desc:</b>	margin of error : 30 m - 100 m
<b>Remarks:</b>		<b>Location Method:</b>	p4
<b>Loc Method Desc:</b>	Original Pre1985 UTM Rel Code 4: margin of error : 30 m - 100 m		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			
<b>Supplier Comment:</b>			

**Overburden and Bedrock  
Materials Interval**

**Formation ID:** 932504348

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Layer:</b>		1			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		2.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932504350			
<b>Layer:</b>		3			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		14.0			
<b>Formation End Depth:</b>		32.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932504349			
<b>Layer:</b>		2			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		2.0			
<b>Formation End Depth:</b>		14.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well</u></b>					
<b><u>Use</u></b>					
<b>Method Construction ID:</b>		966405829			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10989406			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>			930720088		
<b>Layer:</b>			1		
<b>Material:</b>			1		
<b>Open Hole or Material:</b>			STEEL		
<b>Depth From:</b>					
<b>Depth To:</b>			22.0		
<b>Casing Diameter:</b>			6.0		
<b>Casing Diameter UOM:</b>			inch		
<b>Casing Depth UOM:</b>			ft		
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>			930720089		
<b>Layer:</b>			2		
<b>Material:</b>			4		
<b>Open Hole or Material:</b>			OPEN HOLE		
<b>Depth From:</b>					
<b>Depth To:</b>			32.0		
<b>Casing Diameter:</b>			6.0		
<b>Casing Diameter UOM:</b>			inch		
<b>Casing Depth UOM:</b>			ft		
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>			BAILER		
<b>Pump Test ID:</b>			996405829		
<b>Pump Set At:</b>					
<b>Static Level:</b>			4.0		
<b>Final Level After Pumping:</b>			12.0		
<b>Recommended Pump Depth:</b>			30.0		
<b>Pumping Rate:</b>			3.0		
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>			3.0		
<b>Levels UOM:</b>			ft		
<b>Rate UOM:</b>			GPM		
<b>Water State After Test Code:</b>					
<b>Water State After Test:</b>					
<b>Pumping Test Method:</b>			2		
<b>Pumping Duration HR:</b>			2		
<b>Pumping Duration MIN:</b>			0		
<b>Flowing:</b>			No		
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>			934323949		
<b>Test Type:</b>			Recovery		
<b>Test Duration:</b>			15		
<b>Test Level:</b>			4.0		
<b>Test Level UOM:</b>			ft		
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>			935119605		
<b>Test Type:</b>			Recovery		
<b>Test Duration:</b>			60		
<b>Test Level:</b>			4.0		
<b>Test Level UOM:</b>			ft		
<b><u>Water Details</u></b>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Water ID:</b>		933927694			
<b>Layer:</b>		1			
<b>Kind Code:</b>		1			
<b>Kind:</b>		FRESH			
<b>Water Found Depth:</b>		32.0			
<b>Water Found Depth UOM:</b>		ft			

**Links**

<b>Bore Hole ID:</b>	10440836	<b>Tag No:</b>	
<b>Depth M:</b>	9.7536	<b>Contractor:</b>	2518
<b>Year Completed:</b>	1974	<b>Path:</b>	640\6405829.pdf
<b>Well Completed Dt:</b>	1974/04/26	<b>Latitude:</b>	44.3304836056311
<b>Audit No:</b>		<b>Longitude:</b>	-78.7132954388456

<a href="#">50</a>	2 of 2	ESE/184.6	259.9 / 6.73	lot 16 con 7 ON	WWIS
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<b>Well ID:</b>	6405845	<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>		<b>Flow Rate:</b>	
<b>Use 1st:</b>	Domestic	<b>Data Entry Status:</b>	
<b>Use 2nd:</b>	0	<b>Data Src:</b>	1
<b>Final Well Status:</b>	Water Supply	<b>Date Received:</b>	18-Dec-1974 00:00:00
<b>Water Type:</b>		<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>		<b>Abandonment Rec:</b>	
<b>Audit No:</b>		<b>Contractor:</b>	2518
<b>Tag:</b>		<b>Form Version:</b>	1
<b>Constructn Method:</b>		<b>Owner:</b>	
<b>Elevation (m):</b>		<b>County:</b>	VICTORIA
<b>Elevatn Reliability:</b>		<b>Lot:</b>	016
<b>Depth to Bedrock:</b>		<b>Concession:</b>	07
<b>Well Depth:</b>		<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>		<b>Easting NAD83:</b>	
<b>Pump Rate:</b>		<b>Northing NAD83:</b>	
<b>Static Water Level:</b>		<b>Zone:</b>	
<b>Clear/Cloudy:</b>		<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP		
<b>Site Info:</b>			

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/640\6405845.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6405845.pdf)

**Additional Detail(s) (Map)**

<b>Well Completed Date:</b>	1974/04/26
<b>Year Completed:</b>	1974
<b>Depth (m):</b>	9.7536
<b>Latitude:</b>	44.3304836056311
<b>Longitude:</b>	-78.7132954388456
<b>Path:</b>	640\6405845.pdf

**Bore Hole Information**

<b>Bore Hole ID:</b>	10440852	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	682315.00
<b>Code OB Desc:</b>		<b>North83:</b>	4911123.00
<b>Open Hole:</b>		<b>Org CS:</b>	
<b>Cluster Kind:</b>		<b>UTMRC:</b>	4
<b>Date Completed:</b>	26-Apr-1974 00:00:00	<b>UTMRC Desc:</b>	margin of error : 30 m - 100 m
<b>Remarks:</b>		<b>Location Method:</b>	p4
<b>Loc Method Desc:</b>	Original Pre1985 UTM Rel Code 4: margin of error : 30 m - 100 m		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932504398			
<b>Layer:</b>		1			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		2.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932504400			
<b>Layer:</b>		3			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		16.0			
<b>Formation End Depth:</b>		32.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932504399			
<b>Layer:</b>		2			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		25			
<b>Most Common Material:</b>		OVERBURDEN			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		2.0			
<b>Formation End Depth:</b>		16.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well</u></b>					
<b><u>Use</u></b>					
<b>Method Construction ID:</b>		966405845			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Method Construction Code:</b>	1				
<b>Method Construction:</b>	Cable Tool				
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>	10989422				
<b>Casing No:</b>	1				
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>	930720109				
<b>Layer:</b>	1				
<b>Material:</b>	1				
<b>Open Hole or Material:</b>	STEEL				
<b>Depth From:</b>					
<b>Depth To:</b>	32.0				
<b>Casing Diameter:</b>	6.0				
<b>Casing Diameter UOM:</b>	inch				
<b>Casing Depth UOM:</b>	ft				
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>	BAILER				
<b>Pump Test ID:</b>	996405845				
<b>Pump Set At:</b>					
<b>Static Level:</b>	3.0				
<b>Final Level After Pumping:</b>	32.0				
<b>Recommended Pump Depth:</b>	28.0				
<b>Pumping Rate:</b>	4.0				
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>	4.0				
<b>Levels UOM:</b>	ft				
<b>Rate UOM:</b>	GPM				
<b>Water State After Test Code:</b>	1				
<b>Water State After Test:</b>	CLEAR				
<b>Pumping Test Method:</b>	2				
<b>Pumping Duration HR:</b>	2				
<b>Pumping Duration MIN:</b>	0				
<b>Flowing:</b>	No				
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>	934323961				
<b>Test Type:</b>	Recovery				
<b>Test Duration:</b>	15				
<b>Test Level:</b>	3.0				
<b>Test Level UOM:</b>	ft				
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>	934600870				
<b>Test Type:</b>	Recovery				
<b>Test Duration:</b>	30				
<b>Test Level:</b>	3.0				
<b>Test Level UOM:</b>	ft				
<b><u>Draw Down &amp; Recovery</u></b>					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Pump Test Detail ID:</b> 934857649					
<b>Test Type:</b> Recovery					
<b>Test Duration:</b> 45					
<b>Test Level:</b> 3.0					
<b>Test Level UOM:</b> ft					
<b>Draw Down &amp; Recovery</b>					
<b>Pump Test Detail ID:</b> 935119616					
<b>Test Type:</b> Recovery					
<b>Test Duration:</b> 60					
<b>Test Level:</b> 3.0					
<b>Test Level UOM:</b> ft					
<b>Water Details</b>					
<b>Water ID:</b> 933927708					
<b>Layer:</b> 1					
<b>Kind Code:</b> 1					
<b>Kind:</b> FRESH					
<b>Water Found Depth:</b> 32.0					
<b>Water Found Depth UOM:</b> ft					
<b>Links</b>					
<b>Bore Hole ID:</b> 10440852		<b>Tag No:</b>			
<b>Depth M:</b> 9.7536		<b>Contractor:</b> 2518			
<b>Year Completed:</b> 1974		<b>Path:</b> 640\6405845.pdf			
<b>Well Completed Dt:</b> 1974/04/26		<b>Latitude:</b> 44.3304836056311			
<b>Audit No:</b>		<b>Longitude:</b> -78.7132954388456			
<a href="#">51</a>	1 of 4	W/196.7	249.1 / -4.00	<b>Lindsay Cemetery Company</b> 347 Lindsay St S Kawartha Lakes ON K9V 4R4	ECA
<b>Approval No:</b> 8-4179-96-006		<b>MOE District:</b> Peterborough			
<b>Approval Date:</b> 2011-10-25		<b>City:</b>			
<b>Status:</b> Approved		<b>Longitude:</b> -78.72535			
<b>Record Type:</b> ECA		<b>Latitude:</b> 44.334667			
<b>Link Source:</b> IDS		<b>Geometry X:</b>			
<b>SWP Area Name:</b> Kawartha-Haliburton		<b>Geometry Y:</b>			
<b>Approval Type:</b> ECA-AIR					
<b>Project Type:</b> AIR					
<b>Business Name:</b> Lindsay Cemetery Company					
<b>Address:</b> 347 Lindsay St S					
<b>Full Address:</b>					
<b>Full PDF Link:</b> <a href="https://www.accessenvironment.ene.gov.on.ca/instruments/5368-8ADQ6W-14.pdf">https://www.accessenvironment.ene.gov.on.ca/instruments/5368-8ADQ6W-14.pdf</a>					
<b>PDF Site Location:</b>					
<a href="#">51</a>	2 of 4	W/196.7	249.1 / -4.00	<b>The Lindsay Cemetery Corporation</b> 347 Lindsay St S Lot 17 Concession 5 former Ops Township Kawartha Lakes ON K9V 4R4	ECA
<b>Approval No:</b> 7720-9QDPMM		<b>MOE District:</b> Peterborough			
<b>Approval Date:</b> 2014-10-30		<b>City:</b>			
<b>Status:</b> Approved		<b>Longitude:</b> -78.72535			
<b>Record Type:</b> ECA		<b>Latitude:</b> 44.334667			
<b>Link Source:</b> IDS		<b>Geometry X:</b>			
<b>SWP Area Name:</b> Kawartha-Haliburton		<b>Geometry Y:</b>			
<b>Approval Type:</b> ECA-AIR					

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Project Type:</b>		AIR			
<b>Business Name:</b>		The Lindsay Cemetery Corporation			
<b>Address:</b>		347 Lindsay St S Lot 17 Concession 5 former Ops Township			
<b>Full Address:</b>					
<b>Full PDF Link:</b>		https://www.accessenvironment.ene.gov.on.ca/instruments/0695-9FFJVZ-14.pdf			
<b>PDF Site Location:</b>					
<a href="#">51</a>	3 of 4	W/196.7	249.1 / -4.00	<b>The Lindsay Cemetery Corporation 347 Lindsay Street South Lindsay ON K9V 4R4</b>	<b>GEN</b>
<b>Generator No:</b>		ON6942190			
<b>SIC Code:</b>					
<b>SIC Description:</b>					
<b>Approval Years:</b>		As of Jul 2020			
<b>PO Box No:</b>					
<b>Country:</b>		Canada			
<b>Status:</b>		Registered			
<b>Co Admin:</b>					
<b>Choice of Contact:</b>					
<b>Phone No Admin:</b>					
<b>Contaminated Facility:</b>					
<b>MHSW Facility:</b>					
<b><u>Detail(s)</u></b>					
<b>Waste Class:</b>		252 L			
<b>Waste Class Name:</b>		Waste crankcase oils and lubricants			
<a href="#">51</a>	4 of 4	W/196.7	249.1 / -4.00	<b>The Lindsay Cemetery Corporation 347 Lindsay Street South Lindsay ON K9V 4R4</b>	<b>GEN</b>
<b>Generator No:</b>		ON6942190			
<b>SIC Code:</b>					
<b>SIC Description:</b>					
<b>Approval Years:</b>		As of Nov 2021			
<b>PO Box No:</b>					
<b>Country:</b>		Canada			
<b>Status:</b>		Registered			
<b>Co Admin:</b>					
<b>Choice of Contact:</b>					
<b>Phone No Admin:</b>					
<b>Contaminated Facility:</b>					
<b>MHSW Facility:</b>					
<b><u>Detail(s)</u></b>					
<b>Waste Class:</b>		252 L			
<b>Waste Class Name:</b>		Waste crankcase oils and lubricants			
<b>Waste Class:</b>		312 P			
<b>Waste Class Name:</b>		Pathological wastes			
<a href="#">52</a>	1 of 4	ESE/201.8	259.9 / 6.73	<b>Mike Redmond Septic Service Ltd. 36 Golden Mile Road, Lindsay Kawartha Lakes ON</b>	<b>CA</b>
<b>Certificate #:</b>		6634-67HK9W			
<b>Application Year:</b>		2004			
<b>Issue Date:</b>		12/14/2004			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Approval Type:</b> <b>Status:</b> <b>Application Type:</b> <b>Client Name:</b> <b>Client Address:</b> <b>Client City:</b> <b>Client Postal Code:</b> <b>Project Description:</b> <b>Contaminants:</b> <b>Emission Control:</b>		Waste Management Systems Approved			

<a href="#">52</a>	2 of 4	ESE/201.8	259.9 / 6.73	Mike Redmond Septic Service Ltd. 36 Golden Mile Road Kawartha Lakes ON	CA
<b>Certificate #:</b> <b>Application Year:</b> <b>Issue Date:</b> <b>Approval Type:</b> <b>Status:</b> <b>Application Type:</b> <b>Client Name:</b> <b>Client Address:</b> <b>Client City:</b> <b>Client Postal Code:</b> <b>Project Description:</b> <b>Contaminants:</b> <b>Emission Control:</b>		A920380 2002 7/11/2002 Waste Management Systems Approved			

<a href="#">52</a>	3 of 4	ESE/201.8	259.9 / 6.73	Mike Redmond Septic Service Ltd. 36 Golden Mile Road Kawartha Lakes ON L9V 4R2	ECA
<b>Approval No:</b> <b>Approval Date:</b> <b>Status:</b> <b>Record Type:</b> <b>Link Source:</b> <b>SWP Area Name:</b> <b>Approval Type:</b> <b>Project Type:</b> <b>Business Name:</b> <b>Address:</b> <b>Full Address:</b> <b>Full PDF Link:</b> <b>PDF Site Location:</b>		A920380 2002-07-11 Approved ECA IDS Kawartha-Haliburton ECA-WASTE MANAGEMENT SYSTEMS WASTE MANAGEMENT SYSTEMS Mike Redmond Septic Service Ltd. 36 Golden Mile Road		<b>MOE District:</b> <b>City:</b> <b>Longitude:</b> <b>Latitude:</b> <b>Geometry X:</b> <b>Geometry Y:</b>	Peterborough -78.70966 44.32921

<a href="#">52</a>	4 of 4	ESE/201.8	259.9 / 6.73	Mike Redmond Septic Service Ltd. 36 Golden Mile Road, Lindsay Kawartha Lakes ON	ECA
<b>Approval No:</b> <b>Approval Date:</b> <b>Status:</b> <b>Record Type:</b> <b>Link Source:</b> <b>SWP Area Name:</b> <b>Approval Type:</b> <b>Project Type:</b> <b>Business Name:</b>		6634-67HK9W 2004-12-14 Approved ECA IDS Kawartha-Haliburton ECA-WASTE MANAGEMENT SYSTEMS WASTE MANAGEMENT SYSTEMS Mike Redmond Septic Service Ltd.		<b>MOE District:</b> <b>City:</b> <b>Longitude:</b> <b>Latitude:</b> <b>Geometry X:</b> <b>Geometry Y:</b>	Peterborough -78.70966 44.32921

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Address:</b>		36 Golden Mile Road, Lindsay			
<b>Full Address:</b>					
<b>Full PDF Link:</b>		<a href="https://www.accessenvironment.ene.gov.on.ca/instruments/7963-678MLM-14.pdf">https://www.accessenvironment.ene.gov.on.ca/instruments/7963-678MLM-14.pdf</a>			
<b>PDF Site Location:</b>					

<a href="#">53</a>	1 of 4	NW/203.5	255.6 / 2.41	2317438 Ontario Inc. 364 Lindsay St S Kawartha Lakes ON M4V 1P5	ECA
<b>Approval No:</b>		8862-ASQQWE		<b>MOE District:</b>	
<b>Approval Date:</b>		2017-11-10		<b>City:</b>	
<b>Status:</b>		Approved		<b>Longitude:</b>	
<b>Record Type:</b>		ECA		<b>Latitude:</b>	
<b>Link Source:</b>		IDS		<b>Geometry X:</b>	
<b>SWP Area Name:</b>				<b>Geometry Y:</b>	
<b>Approval Type:</b>		ECA-INDUSTRIAL SEWAGE WORKS			
<b>Project Type:</b>		INDUSTRIAL SEWAGE WORKS			
<b>Business Name:</b>		2317438 Ontario Inc.			
<b>Address:</b>		364 Lindsay St S			
<b>Full Address:</b>					
<b>Full PDF Link:</b>		<a href="https://www.accessenvironment.ene.gov.on.ca/instruments/1226-AJNSAN-14.pdf">https://www.accessenvironment.ene.gov.on.ca/instruments/1226-AJNSAN-14.pdf</a>			
<b>PDF Site Location:</b>					

<a href="#">53</a>	2 of 4	NW/203.5	255.6 / 2.41	2317438 ONTARIO INC 364 LINDSAY ST S LINDSAY ON CA ON	DTNK
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**Delisted Fuel Storage Tank**

<b>Instance No:</b>	64761230	<b>Creation Date:</b>	
<b>Status:</b>	Registered	<b>Overfill Prot Type:</b>	
<b>Instance Type:</b>		<b>Facility Location:</b>	364 LINDSAY ST S LINDSAY ON CA
<b>Fuel Type:</b>	Gasoline	<b>Piping SW Steel:</b>	
<b>Cont Name:</b>		<b>Piping SW Galvan:</b>	
<b>Capacity:</b>	65000	<b>Tanks SW Steel:</b>	
<b>Tank Material:</b>	Fiberglass (FRP)	<b>Piping Underground:</b>	
<b>Corrosion Prot:</b>	Fiberglass	<b>No Underground:</b>	
<b>Tank Type:</b>	Double Wall UST	<b>Max Hazard Rank:</b>	NULL
<b>Install Year:</b>	2017	<b>Max Hazard Rank 1:</b>	NULL
<b>Facility Type:</b>	FS LIQUID FUEL TANK	<b>Nxt Period Start Dt:</b>	NULL
<b>Device Installed Loc:</b>		<b>Program Area 1:</b>	NULL
<b>Fuel Type 2:</b>	Diesel	<b>Program Area 2:</b>	NULL
<b>Fuel Type 3:</b>	NULL	<b>Nxt Period Strt Dt 2:</b>	NULL
<b>Item:</b>		<b>Risk Based Periodic:</b>	NULL
<b>Item Description:</b>	FS Liquid Fuel Tank	<b>Vol of Directives:</b>	NULL
<b>Model:</b>	NULL	<b>Years in Service:</b>	NULL
<b>Description:</b>		<b>Created Date:</b>	NULL
<b>Instance Creation Dt:</b>	7/4/2017 10:35:53 AM	<b>Federal Device:</b>	NULL
<b>Instance Install Dt:</b>	7/4/2017 10:34:07 AM	<b>Periodic Exempt:</b>	NULL
<b>Manufacturer:</b>	NULL	<b>Statutory Interval:</b>	NULL
<b>Serial No:</b>	NULL	<b>Rcomnd Insp Interval:</b>	NULL
<b>ULC Standard:</b>	S615	<b>Recommended Toler:</b>	NULL
<b>Quantity:</b>	1	<b>Panam Venue Name:</b>	NULL
<b>Unit of Measure:</b>	EA	<b>External Identifier:</b>	NULL
<b>Parent Fac Type:</b>			
<b>TSSA Base Sched Cycle 1:</b>	NULL		
<b>TSSA Base Sched Cycle 2:</b>	NULL		
<b>Original Source:</b>	FST		
<b>Record Date:</b>	31-JUL-2020		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<a href="#">53</a>	3 of 4	NW/203.5	255.6 / 2.41	2317438 ONTARIO INC 364 LINDSAY ST S LINDSAY ON CA ON	DTNK

**Delisted Fuel Storage Tank**

<b>Instance No:</b>	64761229	<b>Creation Date:</b>	
<b>Status:</b>	Registered	<b>Overfill Prot Type:</b>	
<b>Instance Type:</b>		<b>Facility Location:</b>	364 LINDSAY ST S LINDSAY ON CA
<b>Fuel Type:</b>	Gasoline	<b>Piping SW Steel:</b>	
<b>Cont Name:</b>		<b>Piping SW Galvan:</b>	
<b>Capacity:</b>	65000	<b>Tanks SW Steel:</b>	
<b>Tank Material:</b>	Fiberglass (FRP)	<b>Piping Underground:</b>	
<b>Corrosion Prot:</b>	Fiberglass	<b>No Underground:</b>	
<b>Tank Type:</b>	Double Wall UST	<b>Max Hazard Rank:</b>	NULL
<b>Install Year:</b>	2017	<b>Max Hazard Rank 1:</b>	NULL
<b>Facility Type:</b>	FS LIQUID FUEL TANK	<b>Nxt Period Start Dt:</b>	NULL
<b>Device Installed Loc:</b>		<b>Program Area 1:</b>	NULL
<b>Fuel Type 2:</b>	Gasoline	<b>Program Area 2:</b>	NULL
<b>Fuel Type 3:</b>	NULL	<b>Nxt Period Strt Dt 2:</b>	NULL
<b>Item:</b>		<b>Risk Based Periodic:</b>	NULL
<b>Item Description:</b>	FS Liquid Fuel Tank	<b>Vol of Directives:</b>	NULL
<b>Model:</b>	NULL	<b>Years in Service:</b>	NULL
<b>Description:</b>		<b>Created Date:</b>	NULL
<b>Instance Creation Dt:</b>	7/4/2017 10:34:07 AM	<b>Federal Device:</b>	NULL
<b>Instance Install Dt:</b>	7/4/2017 10:34:07 AM	<b>Periodic Exempt:</b>	NULL
<b>Manufacturer:</b>	NULL	<b>Statutory Interval:</b>	NULL
<b>Serial No:</b>	NULL	<b>Rcomnd Insp Interval:</b>	NULL
<b>ULC Standard:</b>	S615	<b>Recommended Toler:</b>	NULL
<b>Quantity:</b>	1	<b>Panam Venue Name:</b>	NULL
<b>Unit of Measure:</b>	EA	<b>External Identifier:</b>	NULL
<b>Parent Fac Type:</b>			
<b>TSSA Base Sched Cycle 1:</b>	NULL		
<b>TSSA Base Sched Cycle 2:</b>	NULL		
<b>Original Source:</b>	FST		
<b>Record Date:</b>	31-JUL-2020		

<a href="#">53</a>	4 of 4	NW/203.5	255.6 / 2.41	364 LINDSAY ST S LINDSAY ON NULL	DTNK
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**Delisted Fuel Storage Tank**

<b>Instance No:</b>	64761227	<b>Creation Date:</b>	
<b>Status:</b>	Active	<b>Overfill Prot Type:</b>	
<b>Instance Type:</b>		<b>Facility Location:</b>	
<b>Fuel Type:</b>		<b>Piping SW Steel:</b>	0
<b>Cont Name:</b>		<b>Piping SW Galvan:</b>	0
<b>Capacity:</b>		<b>Tanks SW Steel:</b>	0
<b>Tank Material:</b>		<b>Piping Underground:</b>	3
<b>Corrosion Prot:</b>		<b>No Underground:</b>	2
<b>Tank Type:</b>		<b>Max Hazard Rank:</b>	
<b>Install Year:</b>		<b>Max Hazard Rank 1:</b>	
<b>Facility Type:</b>		<b>Nxt Period Start Dt:</b>	
<b>Device Installed Loc:</b>		<b>Program Area 1:</b>	
<b>Fuel Type 2:</b>		<b>Program Area 2:</b>	
<b>Fuel Type 3:</b>		<b>Nxt Period Strt Dt 2:</b>	
<b>Item:</b>	FS GASOLINE STATION - SELF SERVE	<b>Risk Based Periodic:</b>	
<b>Item Description:</b>		<b>Vol of Directives:</b>	
<b>Model:</b>		<b>Years in Service:</b>	
<b>Description:</b>		<b>Created Date:</b>	



Improvement Location Method:  
 Source Revision Comment:  
 Supplier Comment:

Overburden and Bedrock  
Materials Interval

Formation ID: 932494861  
 Layer: 3  
 Color: 2  
 General Color: GREY  
 Mat1: 05  
 Most Common Material: CLAY  
 Mat2: 17  
 Mat2 Desc: SHALE  
 Mat3:  
 Mat3 Desc:  
 Formation Top Depth: 14.0  
 Formation End Depth: 19.0  
 Formation End Depth UOM: ft

Overburden and Bedrock  
Materials Interval

Formation ID: 932494862  
 Layer: 4  
 Color: 2  
 General Color: GREY  
 Mat1: 15  
 Most Common Material: LIMESTONE  
 Mat2:  
 Mat2 Desc:  
 Mat3:  
 Mat3 Desc:  
 Formation Top Depth: 19.0  
 Formation End Depth: 25.0  
 Formation End Depth UOM: ft

Overburden and Bedrock  
Materials Interval

Formation ID: 932494859  
 Layer: 1  
 Color:  
 General Color:  
 Mat1: 02  
 Most Common Material: TOPSOIL  
 Mat2:  
 Mat2 Desc:  
 Mat3:  
 Mat3 Desc:  
 Formation Top Depth: 0.0  
 Formation End Depth: 2.0  
 Formation End Depth UOM: ft

Overburden and Bedrock  
Materials Interval

Formation ID: 932494860  
 Layer: 2  
 Color: 5  
 General Color: YELLOW

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		12			
<b>Mat2 Desc:</b>		STONES			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		2.0			
<b>Formation End Depth:</b>		14.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966402592			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10986192			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714840			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>					
<b>Depth To:</b>		25.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714839			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		19.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		PUMP			
<b>Pump Test ID:</b>		996402592			
<b>Pump Set At:</b>					
<b>Static Level:</b>		4.0			
<b>Final Level After Pumping:</b>		15.0			
<b>Recommended Pump Depth:</b>		20.0			
<b>Pumping Rate:</b>		8.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		5.0			
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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**Water State After Test Code:** 1  
**Water State After Test:** CLEAR  
**Pumping Test Method:** 1  
**Pumping Duration HR:** 2  
**Pumping Duration MIN:** 0  
**Flowing:** No

**Water Details**

**Water ID:** 933924552  
**Layer:** 1  
**Kind Code:** 1  
**Kind:** FRESH  
**Water Found Depth:** 21.0  
**Water Found Depth UOM:** ft

**Links**

<b>Bore Hole ID:</b>	10437622	<b>Tag No:</b>	
<b>Depth M:</b>	7.62	<b>Contractor:</b>	2518
<b>Year Completed:</b>	1962	<b>Path:</b>	640\6402592.pdf
<b>Well Completed Dt:</b>	1962/04/28	<b>Latitude:</b>	44.3307689186556
<b>Audit No:</b>		<b>Longitude:</b>	-78.7127073921791

<a href="#"><u>55</u></a>	1 of 1	<b>ESE/206.8</b>	<b>259.8 / 6.61</b>	<b>18 GOLDEN MILE RD lot 15 con 6 LINDSAY ON</b>	<b>WWIS</b>
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<b>Well ID:</b>	7159851	<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>		<b>Flow Rate:</b>	
<b>Use 1st:</b>	Domestic	<b>Data Entry Status:</b>	
<b>Use 2nd:</b>		<b>Data Src:</b>	
<b>Final Well Status:</b>	Water Supply	<b>Date Received:</b>	02-Mar-2011 00:00:00
<b>Water Type:</b>		<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>		<b>Abandonment Rec:</b>	
<b>Audit No:</b>	Z123325	<b>Contractor:</b>	7067
<b>Tag:</b>	A103186	<b>Form Version:</b>	7
<b>Constructn Method:</b>		<b>Owner:</b>	
<b>Elevation (m):</b>		<b>County:</b>	VICTORIA
<b>Elevatn Reliability:</b>		<b>Lot:</b>	015
<b>Depth to Bedrock:</b>		<b>Concession:</b>	06
<b>Well Depth:</b>		<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>		<b>Easting NAD83:</b>	
<b>Pump Rate:</b>		<b>Northing NAD83:</b>	
<b>Static Water Level:</b>		<b>Zone:</b>	
<b>Clear/Cloudy:</b>		<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP		
<b>Site Info:</b>			

**PDF URL (Map):** [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/715\7159851.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/715\7159851.pdf)

**Additional Detail(s) (Map)**

**Well Completed Date:** 2010/11/04  
**Year Completed:** 2010  
**Depth (m):**  
**Latitude:** 44.3312319293048  
**Longitude:** -78.7124510781171  
**Path:** 715\7159851.pdf

**Bore Hole Information**

**Bore Hole ID:** 1003481001 **Elevation:**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>DP2BR:</b>				<b>Elevrc:</b>	
<b>Spatial Status:</b>				<b>Zone:</b>	17
<b>Code OB:</b>				<b>East83:</b>	682380.00
<b>Code OB Desc:</b>				<b>North83:</b>	4911208.00
<b>Open Hole:</b>				<b>Org CS:</b>	UTM83
<b>Cluster Kind:</b>				<b>UTMRC:</b>	3
<b>Date Completed:</b>	04-Nov-2010 00:00:00			<b>UTMRC Desc:</b>	margin of error : 10 - 30 m
<b>Remarks:</b>				<b>Location Method:</b>	wwr
<b>Loc Method Desc:</b>		on Water Well Record			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<u><b>Annular Space/Abandonment Sealing Record</b></u>					
<b>Plug ID:</b>	1003784988				
<b>Layer:</b>	2				
<b>Plug From:</b>	5.0				
<b>Plug To:</b>					
<b>Plug Depth UOM:</b>	m				
<u><b>Annular Space/Abandonment Sealing Record</b></u>					
<b>Plug ID:</b>	1003784987				
<b>Layer:</b>	1				
<b>Plug From:</b>	0.0				
<b>Plug To:</b>	5.0				
<b>Plug Depth UOM:</b>	m				
<u><b>Method of Construction &amp; Well Use</b></u>					
<b>Method Construction ID:</b>	1003784985				
<b>Method Construction Code:</b>	0				
<b>Method Construction:</b>	Not Known				
<b>Other Method Construction:</b>					
<u><b>Pipe Information</b></u>					
<b>Pipe ID:</b>	1003784975				
<b>Casing No:</b>	0				
<b>Comment:</b>					
<b>Alt Name:</b>					
<u><b>Construction Record - Casing</b></u>					
<b>Casing ID:</b>	1003784981				
<b>Layer:</b>	1				
<b>Material:</b>	1				
<b>Open Hole or Material:</b>	STEEL				
<b>Depth From:</b>	-0.6000000238418579				
<b>Depth To:</b>	7.599999904632568				
<b>Casing Diameter:</b>	15.899999618530273				
<b>Casing Diameter UOM:</b>	cm				
<b>Casing Depth UOM:</b>	m				

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		1003784982			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>		7.599999904632568			
<b>Depth To:</b>		13.100000381469727			
<b>Casing Diameter:</b>		15.899999618530273			
<b>Casing Diameter UOM:</b>		cm			
<b>Casing Depth UOM:</b>		m			
<b><u>Construction Record - Screen</u></b>					
<b>Screen ID:</b>		1003784983			
<b>Layer:</b>					
<b>Slot:</b>					
<b>Screen Top Depth:</b>					
<b>Screen End Depth:</b>					
<b>Screen Material:</b>					
<b>Screen Depth UOM:</b>		m			
<b>Screen Diameter UOM:</b>		cm			
<b>Screen Diameter:</b>					
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>					
<b>Pump Test ID:</b>		1003784976			
<b>Pump Set At:</b>					
<b>Static Level:</b>		2.0999999046325684			
<b>Final Level After Pumping:</b>					
<b>Recommended Pump Depth:</b>					
<b>Pumping Rate:</b>					
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>					
<b>Levels UOM:</b>		m			
<b>Rate UOM:</b>		LPM			
<b>Water State After Test Code:</b>		0			
<b>Water State After Test:</b>					
<b>Pumping Test Method:</b>		0			
<b>Pumping Duration HR:</b>					
<b>Pumping Duration MIN:</b>					
<b>Flowing:</b>					
<b><u>Water Details</u></b>					
<b>Water ID:</b>		1003784980			
<b>Layer:</b>		1			
<b>Kind Code:</b>		1			
<b>Kind:</b>		FRESH			
<b>Water Found Depth:</b>		8.5			
<b>Water Found Depth UOM:</b>		m			
<b><u>Hole Diameter</u></b>					
<b>Hole ID:</b>		1003784979			
<b>Diameter:</b>		15.899999618530273			
<b>Depth From:</b>		7.599999904632568			
<b>Depth To:</b>		13.100000381469727			
<b>Hole Depth UOM:</b>		m			
<b>Hole Diameter UOM:</b>		cm			

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

Hole ID: 1003784978  
 Diameter: 16.899999618530273  
 Depth From: 0.0  
 Depth To: 7.599999904632568  
 Hole Depth UOM: m  
 Hole Diameter UOM: cm

Links

Bore Hole ID:	1003481001	Tag No:	A103186
Depth M:		Contractor:	7067
Year Completed:	2010	Path:	715\7159851.pdf
Well Completed Dt:	2010/11/04	Latitude:	44.3312319293048
Audit No:	Z123325	Longitude:	-78.7124510781171

<a href="#">56</a>	1 of 1	ESE/207.7	259.8 / 6.61	lot 15 con 6 ON	WWIS
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Well ID:	6404526	Flowing (Y/N):	
Construction Date:		Flow Rate:	
Use 1st:	Domestic	Data Entry Status:	
Use 2nd:	0	Data Src:	1
Final Well Status:	Water Supply	Date Received:	10-Nov-1971 00:00:00
Water Type:		Selected Flag:	TRUE
Casing Material:		Abandonment Rec:	
Audit No:		Contractor:	2518
Tag:		Form Version:	1
Constructn Method:		Owner:	
Elevation (m):		County:	VICTORIA
Elevatn Reliabilty:		Lot:	015
Depth to Bedrock:		Concession:	06
Well Depth:		Concession Name:	CON
Overburden/Bedrock:		Easting NAD83:	
Pump Rate:		Northing NAD83:	
Static Water Level:		Zone:	
Clear/Cloudy:		UTM Reliability:	
Municipality:	OPS TOWNSHIP		
Site Info:			

PDF URL (Map): [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/640\6404526.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6404526.pdf)

Additional Detail(s) (Map)

Well Completed Date: 1971/06/02  
 Year Completed: 1971  
 Depth (m): 18.288  
 Latitude: 44.3311869503122  
 Longitude: -78.7124528273786  
 Path: 640\6404526.pdf

Bore Hole Information

Bore Hole ID:	10439549	Elevation:	
DP2BR:		Elevarc:	
Spatial Status:		Zone:	17
Code OB:		East83:	682380.00
Code OB Desc:		North83:	4911203.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	4
Date Completed:	02-Jun-1971 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Remarks:</b>				<b>Location Method:</b>	p4
<b>Loc Method Desc:</b>		Original Pre1985 UTM Rel Code 4: margin of error : 30 m - 100 m			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<u><b>Overburden and Bedrock</b></u>					
<u><b>Materials Interval</b></u>					
<b>Formation ID:</b>		932500247			
<b>Layer:</b>		2			
<b>Color:</b>		5			
<b>General Color:</b>		YELLOW			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		2.0			
<b>Formation End Depth:</b>		20.0			
<b>Formation End Depth UOM:</b>		ft			
<u><b>Overburden and Bedrock</b></u>					
<u><b>Materials Interval</b></u>					
<b>Formation ID:</b>		932500246			
<b>Layer:</b>		1			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		2.0			
<b>Formation End Depth UOM:</b>		ft			
<u><b>Overburden and Bedrock</b></u>					
<u><b>Materials Interval</b></u>					
<b>Formation ID:</b>		932500248			
<b>Layer:</b>		3			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		12			
<b>Mat2 Desc:</b>		STONES			
<b>Mat3:</b>		17			
<b>Mat3 Desc:</b>		SHALE			
<b>Formation Top Depth:</b>		20.0			
<b>Formation End Depth:</b>		52.0			
<b>Formation End Depth UOM:</b>		ft			
<u><b>Overburden and Bedrock</b></u>					
<u><b>Materials Interval</b></u>					

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Formation ID:</b>		932500249			
<b>Layer:</b>		4			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		52.0			
<b>Formation End Depth:</b>		60.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966404526			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10988119			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930718065			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		54.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930718066			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>					
<b>Depth To:</b>		60.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		PUMP			
<b>Pump Test ID:</b>		996404526			
<b>Pump Set At:</b>					
<b>Static Level:</b>					
<b>Final Level After Pumping:</b>		8.0			
<b>Recommended Pump Depth:</b>		25.0			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b>Pumping Rate:</b>		30.0			
<b>Flowing Rate:</b>		2.0			
<b>Recommended Pump Rate:</b>		10.0			
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		1			
<b>Pumping Duration HR:</b>		3			
<b>Pumping Duration MIN:</b>		0			
<b>Flowing:</b>		Yes			

**Draw Down & Recovery**

**Pump Test Detail ID:** 934596455  
**Test Type:** Recovery  
**Test Duration:** 30  
**Test Level:** 0.0  
**Test Level UOM:** ft

**Draw Down & Recovery**

**Pump Test Detail ID:** 935115187  
**Test Type:** Recovery  
**Test Duration:** 60  
**Test Level:** 0.0  
**Test Level UOM:** ft

**Draw Down & Recovery**

**Pump Test Detail ID:** 934328269  
**Test Type:** Recovery  
**Test Duration:** 15  
**Test Level:** 0.0  
**Test Level UOM:** ft

**Draw Down & Recovery**

**Pump Test Detail ID:** 934853248  
**Test Type:** Recovery  
**Test Duration:** 45  
**Test Level:** 0.0  
**Test Level UOM:** ft

**Water Details**

**Water ID:** 933926416  
**Layer:** 1  
**Kind Code:** 1  
**Kind:** FRESH  
**Water Found Depth:** 58.0  
**Water Found Depth UOM:** ft

**Links**

**Bore Hole ID:** 10439549  
**Depth M:** 18.288  
**Year Completed:** 1971  
**Well Completed Dt:** 1971/06/02  
**Audit No:**

**Tag No:** 2518  
**Contractor:** 640\6404526.pdf  
**Path:** 44.3311869503122  
**Latitude:** -78.7124528273786  
**Longitude:**

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<a href="#">57</a>	1 of 1	E/222.4	256.9 / 3.78	lot 15 con 7 ON	WWIS
<b>Well ID:</b>		6405256		<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>		Domestic		<b>Data Entry Status:</b>	
<b>Use 2nd:</b>		0		<b>Data Src:</b>	
<b>Final Well Status:</b>		Water Supply		<b>Date Received:</b>	
<b>Water Type:</b>				<b>Selected Flag:</b>	
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>				<b>Contractor:</b>	
<b>Tag:</b>				<b>Form Version:</b>	
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	
<b>Elevatn Reliabilty:</b>				<b>Lot:</b>	
<b>Depth to Bedrock:</b>				<b>Concession:</b>	
<b>Well Depth:</b>				<b>Concession Name:</b>	
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>		OPS TOWNSHIP			
<b>Site Info:</b>					
<b>PDF URL (Map):</b>		<a href="https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6405256.pdf">https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6405256.pdf</a>			
<b><u>Additional Detail(s) (Map)</u></b>					
<b>Well Completed Date:</b>		1973/03/20			
<b>Year Completed:</b>		1973			
<b>Depth (m):</b>		13.1064			
<b>Latitude:</b>		44.3340819263011			
<b>Longitude:</b>		-78.713155539991			
<b>Path:</b>		640\6405256.pdf			
<b><u>Bore Hole Information</u></b>					
<b>Bore Hole ID:</b>		10440274		<b>Elevation:</b>	
<b>DP2BR:</b>				<b>Elevrc:</b>	
<b>Spatial Status:</b>				<b>Zone:</b>	
<b>Code OB:</b>				<b>East83:</b>	
<b>Code OB Desc:</b>				<b>North83:</b>	
<b>Open Hole:</b>				<b>Org CS:</b>	
<b>Cluster Kind:</b>				<b>UTMRC:</b>	
<b>Date Completed:</b>		20-Mar-1973 00:00:00		<b>UTMRC Desc:</b>	
<b>Remarks:</b>				<b>Location Method:</b>	
<b>Loc Method Desc:</b>		Original Pre1985 UTM Rel Code 4: margin of error : 30 m - 100 m			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932502490			
<b>Layer:</b>		4			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		17			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Most Common Material:</b>					
<b>Mat2:</b>		SHALE			
		15			
<b>Mat2 Desc:</b>		LIMESTONE			
<b>Mat3:</b>		26			
<b>Mat3 Desc:</b>		ROCK			
<b>Formation Top Depth:</b>		42.0			
<b>Formation End Depth:</b>		43.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932502489			
<b>Layer:</b>		3			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		11			
<b>Most Common Material:</b>		GRAVEL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		40.0			
<b>Formation End Depth:</b>		42.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932502487			
<b>Layer:</b>		1			
<b>Color:</b>		8			
<b>General Color:</b>		BLACK			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		28			
<b>Mat2 Desc:</b>		SAND			
<b>Mat3:</b>		06			
<b>Mat3 Desc:</b>		SILT			
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		2.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932502488			
<b>Layer:</b>		2			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		11			
<b>Mat2 Desc:</b>		GRAVEL			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		2.0			
<b>Formation End Depth:</b>		40.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well</u></b>					
<b><u>Use</u></b>					

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Method Construction ID:</b>		966405256			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10988844			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930719220			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		43.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		BAILER			
<b>Pump Test ID:</b>		996405256			
<b>Pump Set At:</b>					
<b>Static Level:</b>		6.0			
<b>Final Level After Pumping:</b>		35.0			
<b>Recommended Pump Depth:</b>		35.0			
<b>Pumping Rate:</b>		6.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		4.0			
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		2			
<b>Pumping Duration HR:</b>		4			
<b>Pumping Duration MIN:</b>		20			
<b>Flowing:</b>		No			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934598754			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		30			
<b>Test Level:</b>		20.0			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		935117496			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		60			
<b>Test Level:</b>		10.0			
<b>Test Level UOM:</b>		ft			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934855962			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		45			
<b>Test Level:</b>		15.0			
<b>Test Level UOM:</b>		ft			
<b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>		934330580			
<b>Test Type:</b>		Recovery			
<b>Test Duration:</b>		15			
<b>Test Level:</b>		25.0			
<b>Test Level UOM:</b>		ft			
<b><u>Water Details</u></b>					
<b>Water ID:</b>		933927138			
<b>Layer:</b>		1			
<b>Kind Code:</b>		5			
<b>Kind:</b>		Not stated			
<b>Water Found Depth:</b>		43.0			
<b>Water Found Depth UOM:</b>		ft			
<b><u>Links</u></b>					
<b>Bore Hole ID:</b>	10440274			<b>Tag No:</b>	
<b>Depth M:</b>	13.1064			<b>Contractor:</b>	2518
<b>Year Completed:</b>	1973			<b>Path:</b>	640\6405256.pdf
<b>Well Completed Dt:</b>	1973/03/20			<b>Latitude:</b>	44.3340819263011
<b>Audit No:</b>				<b>Longitude:</b>	-78.713155539991

<b><u>58</u></b>	<b>1 of 1</b>	<b>NW/233.0</b>	<b>255.5 / 2.39</b>	<b>lot 17 con 6 ON</b>	<b>WWIS</b>
<b>Well ID:</b>	6402601			<b>Flowing (Y/N):</b>	
<b>Construction Date:</b>				<b>Flow Rate:</b>	
<b>Use 1st:</b>	Public			<b>Data Entry Status:</b>	
<b>Use 2nd:</b>	0			<b>Data Src:</b>	1
<b>Final Well Status:</b>	Water Supply			<b>Date Received:</b>	04-Oct-1955 00:00:00
<b>Water Type:</b>				<b>Selected Flag:</b>	TRUE
<b>Casing Material:</b>				<b>Abandonment Rec:</b>	
<b>Audit No:</b>				<b>Contractor:</b>	2113
<b>Tag:</b>				<b>Form Version:</b>	1
<b>Constructn Method:</b>				<b>Owner:</b>	
<b>Elevation (m):</b>				<b>County:</b>	VICTORIA
<b>Elevatn Reliabilty:</b>				<b>Lot:</b>	017
<b>Depth to Bedrock:</b>				<b>Concession:</b>	06
<b>Well Depth:</b>				<b>Concession Name:</b>	CON
<b>Overburden/Bedrock:</b>				<b>Easting NAD83:</b>	
<b>Pump Rate:</b>				<b>Northing NAD83:</b>	
<b>Static Water Level:</b>				<b>Zone:</b>	
<b>Clear/Cloudy:</b>				<b>UTM Reliability:</b>	
<b>Municipality:</b>	OPS TOWNSHIP				
<b>Site Info:</b>					
<b>PDF URL (Map):</b>	<a href="https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402601.pdf">https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402601.pdf</a>				
<b><u>Additional Detail(s) (Map)</u></b>					
<b>Well Completed Date:</b>	1955/09/08				

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Year Completed:</b>		1955			
<b>Depth (m):</b>		11.2776			
<b>Latitude:</b>		44.3392450099766			
<b>Longitude:</b>		-78.7269040321154			
<b>Path:</b>		640\6402601.pdf			

**Bore Hole Information**

<b>Bore Hole ID:</b>	10437631	<b>Elevation:</b>	
<b>DP2BR:</b>		<b>Elevrc:</b>	
<b>Spatial Status:</b>		<b>Zone:</b>	17
<b>Code OB:</b>		<b>East83:</b>	681203.00
<b>Code OB Desc:</b>		<b>North83:</b>	4912066.00
<b>Open Hole:</b>		<b>Org CS:</b>	
<b>Cluster Kind:</b>		<b>UTMRC:</b>	9
<b>Date Completed:</b>	08-Sep-1955 00:00:00	<b>UTMRC Desc:</b>	unknown UTM
<b>Remarks:</b>		<b>Location Method:</b>	p9
<b>Loc Method Desc:</b>	Original Pre1985 UTM Rel Code 9: unknown UTM		
<b>Elevrc Desc:</b>			
<b>Location Source Date:</b>			
<b>Improvement Location Source:</b>			
<b>Improvement Location Method:</b>			
<b>Source Revision Comment:</b>			
<b>Supplier Comment:</b>			

**Overburden and Bedrock**

**Materials Interval**

<b>Formation ID:</b>	932494893
<b>Layer:</b>	6
<b>Color:</b>	2
<b>General Color:</b>	GREY
<b>Mat1:</b>	15
<b>Most Common Material:</b>	LIMESTONE
<b>Mat2:</b>	
<b>Mat2 Desc:</b>	
<b>Mat3:</b>	
<b>Mat3 Desc:</b>	
<b>Formation Top Depth:</b>	26.0
<b>Formation End Depth:</b>	37.0
<b>Formation End Depth UOM:</b>	ft

**Overburden and Bedrock**

**Materials Interval**

<b>Formation ID:</b>	932494890
<b>Layer:</b>	3
<b>Color:</b>	6
<b>General Color:</b>	BROWN
<b>Mat1:</b>	05
<b>Most Common Material:</b>	CLAY
<b>Mat2:</b>	12
<b>Mat2 Desc:</b>	STONES
<b>Mat3:</b>	
<b>Mat3 Desc:</b>	
<b>Formation Top Depth:</b>	7.0
<b>Formation End Depth:</b>	15.0
<b>Formation End Depth UOM:</b>	ft

**Overburden and Bedrock**

**Materials Interval**

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Formation ID:</b>		932494889			
<b>Layer:</b>		2			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		1.0			
<b>Formation End Depth:</b>		7.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494891			
<b>Layer:</b>		4			
<b>Color:</b>		6			
<b>General Color:</b>		BROWN			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		11			
<b>Mat2 Desc:</b>		GRAVEL			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		15.0			
<b>Formation End Depth:</b>		20.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494888			
<b>Layer:</b>		1			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		1.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494892			
<b>Layer:</b>		5			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		11			
<b>Most Common Material:</b>		GRAVEL			
<b>Mat2:</b>		09			
<b>Mat2 Desc:</b>		MEDIUM SAND			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		20.0			
<b>Formation End Depth:</b>		26.0			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966402601			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10986201			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714856			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		26.0			
<b>Casing Diameter:</b>		8.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930714857			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>					
<b>Depth To:</b>		37.0			
<b>Casing Diameter:</b>		8.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		PUMP			
<b>Pump Test ID:</b>		996402601			
<b>Pump Set At:</b>					
<b>Static Level:</b>		9.0			
<b>Final Level After Pumping:</b>		22.0			
<b>Recommended Pump Depth:</b>					
<b>Pumping Rate:</b>		20.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>					
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			
<b>Water State After Test Code:</b>		1			
<b>Water State After Test:</b>		CLEAR			
<b>Pumping Test Method:</b>		1			
<b>Pumping Duration HR:</b>		4			
<b>Pumping Duration MIN:</b>		0			
<b>Flowing:</b>		No			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
<b><u>Water Details</u></b>					
Water ID:		933924561			
Layer:		1			
Kind Code:		1			
Kind:		FRESH			
Water Found Depth:		30.0			
Water Found Depth UOM:		ft			
<b><u>Links</u></b>					
Bore Hole ID:	10437631			Tag No:	
Depth M:	11.2776			Contractor:	2113
Year Completed:	1955			Path:	640\6402601.pdf
Well Completed Dt:	1955/09/08			Latitude:	44.3392450099766
Audit No:				Longitude:	-78.7269040321154

<a href="#">59</a>	1 of 1	ESE/241.8	259.9 / 6.74	lot 15 con 6 ON	WWIS
Well ID:	6402594			Flowing (Y/N):	
Construction Date:				Flow Rate:	
Use 1st:	Domestic			Data Entry Status:	
Use 2nd:	0			Data Src:	1
Final Well Status:	Water Supply			Date Received:	07-Jan-1963 00:00:00
Water Type:				Selected Flag:	TRUE
Casing Material:				Abandonment Rec:	
Audit No:				Contractor:	2518
Tag:				Form Version:	1
Constructn Method:				Owner:	
Elevation (m):				County:	VICTORIA
Elevatn Reliabilty:				Lot:	015
Depth to Bedrock:				Concession:	06
Well Depth:				Concession Name:	CON
Overburden/Bedrock:				Easting NAD83:	
Pump Rate:				Northing NAD83:	
Static Water Level:				Zone:	
Clear/Cloudy:				UTM Reliability:	
Municipality:	OPS TOWNSHIP				
Site Info:					
PDF URL (Map):	<a href="https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402594.pdf">https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6402594.pdf</a>				

**Additional Detail(s) (Map)**

Well Completed Date:	1962/12/14
Year Completed:	1962
Depth (m):	9.144
Latitude:	44.331429289167
Longitude:	-78.711966782303
Path:	640\6402594.pdf

**Bore Hole Information**

Bore Hole ID:	10437624	Elevation:	
DP2BR:		Elelvc:	
Spatial Status:		Zone:	17
Code OB:		East83:	682418.00
Code OB Desc:		North83:	4911231.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	5
Date Completed:	14-Dec-1962 00:00:00	UTMRC Desc:	margin of error : 100 m - 300 m

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Remarks:</b>					<b>Location Method:</b> p5
<b>Loc Method Desc:</b>		Original Pre1985 UTM Rel Code 5: margin of error : 100 m - 300 m			
<b>Elevrc Desc:</b>					
<b>Location Source Date:</b>					
<b>Improvement Location Source:</b>					
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494866			
<b>Layer:</b>		1			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		2.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494867			
<b>Layer:</b>		2			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		11			
<b>Mat2 Desc:</b>		GRAVEL			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		2.0			
<b>Formation End Depth:</b>		24.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932494868			
<b>Layer:</b>		3			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		17			
<b>Most Common Material:</b>		SHALE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		24.0			
<b>Formation End Depth:</b>		30.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well</u></b>					
<b><u>Use</u></b>					

<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>
<i>Method Construction ID:</i>		966402594			
<i>Method Construction Code:</i>		1			
<i>Method Construction:</i>		Cable Tool			
<i>Other Method Construction:</i>					
 <b><u>Pipe Information</u></b>					
<i>Pipe ID:</i>		10986194			
<i>Casing No:</i>		1			
<i>Comment:</i>					
<i>Alt Name:</i>					
 <b><u>Construction Record - Casing</u></b>					
<i>Casing ID:</i>		930714843			
<i>Layer:</i>		1			
<i>Material:</i>		1			
<i>Open Hole or Material:</i>		STEEL			
<i>Depth From:</i>					
<i>Depth To:</i>		25.0			
<i>Casing Diameter:</i>		6.0			
<i>Casing Diameter UOM:</i>		inch			
<i>Casing Depth UOM:</i>		ft			
 <b><u>Construction Record - Casing</u></b>					
<i>Casing ID:</i>		930714844			
<i>Layer:</i>		2			
<i>Material:</i>		4			
<i>Open Hole or Material:</i>		OPEN HOLE			
<i>Depth From:</i>					
<i>Depth To:</i>		30.0			
<i>Casing Diameter:</i>		6.0			
<i>Casing Diameter UOM:</i>		inch			
<i>Casing Depth UOM:</i>		ft			
 <b><u>Results of Well Yield Testing</u></b>					
<i>Pumping Test Method Desc:</i>		PUMP			
<i>Pump Test ID:</i>		996402594			
<i>Pump Set At:</i>					
<i>Static Level:</i>		10.0			
<i>Final Level After Pumping:</i>		14.0			
<i>Recommended Pump Depth:</i>		25.0			
<i>Pumping Rate:</i>		9.0			
<i>Flowing Rate:</i>					
<i>Recommended Pump Rate:</i>		3.0			
<i>Levels UOM:</i>		ft			
<i>Rate UOM:</i>		GPM			
<i>Water State After Test Code:</i>		1			
<i>Water State After Test:</i>		CLEAR			
<i>Pumping Test Method:</i>		1			
<i>Pumping Duration HR:</i>		1			
<i>Pumping Duration MIN:</i>		30			
<i>Flowing:</i>		No			
 <b><u>Water Details</u></b>					
<i>Water ID:</i>		933924554			
<i>Layer:</i>		1			
<i>Kind Code:</i>		1			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Kind:		FRESH			
Water Found Depth:		28.0			
Water Found Depth UOM:		ft			
<b>Links</b>					
Bore Hole ID:	10437624			Tag No:	
Depth M:	9.144			Contractor:	2518
Year Completed:	1962			Path:	640\6402594.pdf
Well Completed Dt:	1962/12/14			Latitude:	44.331429289167
Audit No:				Longitude:	-78.711966782303

<a href="#">60</a>	1 of 1	ESE/246.4	261.1 / 8.00	lot 15 con 6 ON	WWIS
Well ID:	6404077			Flowing (Y/N):	
Construction Date:				Flow Rate:	
Use 1st:	Domestic			Data Entry Status:	
Use 2nd:	0			Data Src:	1
Final Well Status:	Water Supply			Date Received:	14-Jul-1970 00:00:00
Water Type:				Selected Flag:	TRUE
Casing Material:				Abandonment Rec:	
Audit No:				Contractor:	2518
Tag:				Form Version:	1
Constructn Method:				Owner:	
Elevation (m):				County:	VICTORIA
Elevatn Reliabilty:				Lot:	015
Depth to Bedrock:				Concession:	06
Well Depth:				Concession Name:	CON
Overburden/Bedrock:				Easting NAD83:	
Pump Rate:				Northing NAD83:	
Static Water Level:				Zone:	
Clear/Cloudy:				UTM Reliability:	
Municipality:	OPS TOWNSHIP				
Site Info:					

PDF URL (Map): [https://d2khazk8e83rdv.cloudfront.net/moe\\_mapping/downloads/2Water/Wells\\_pdfs/640\6404077.pdf](https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/640\6404077.pdf)

**Additional Detail(s) (Map)**

Well Completed Date: 1970/02/05  
 Year Completed: 1970  
 Depth (m): 13.4112  
 Latitude: 44.3309982444775  
 Longitude: -78.7120211770473  
 Path: 640\6404077.pdf

**Bore Hole Information**

Bore Hole ID:	10439103	Elevation:	
DP2BR:		Elevrc:	
Spatial Status:		Zone:	17
Code OB:		East83:	682415.00
Code OB Desc:		North83:	4911183.00
Open Hole:		Org CS:	
Cluster Kind:		UTMRC:	4
Date Completed:	05-Feb-1970 00:00:00	UTMRC Desc:	margin of error : 30 m - 100 m
Remarks:		Location Method:	p4
Loc Method Desc:	Original Pre1985 UTM Rel Code 4: margin of error : 30 m - 100 m		
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Improvement Location Method:</b>					
<b>Source Revision Comment:</b>					
<b>Supplier Comment:</b>					
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932498846			
<b>Layer:</b>		2			
<b>Color:</b>		5			
<b>General Color:</b>		YELLOW			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		12			
<b>Mat2 Desc:</b>		STONES			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		2.0			
<b>Formation End Depth:</b>		14.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932498845			
<b>Layer:</b>		1			
<b>Color:</b>					
<b>General Color:</b>					
<b>Mat1:</b>		02			
<b>Most Common Material:</b>		TOPSOIL			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		0.0			
<b>Formation End Depth:</b>		2.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932498847			
<b>Layer:</b>		3			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			
<b>Mat1:</b>		05			
<b>Most Common Material:</b>		CLAY			
<b>Mat2:</b>		12			
<b>Mat2 Desc:</b>		STONES			
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		14.0			
<b>Formation End Depth:</b>		24.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Overburden and Bedrock</u></b>					
<b><u>Materials Interval</u></b>					
<b>Formation ID:</b>		932498848			
<b>Layer:</b>		4			
<b>Color:</b>		2			
<b>General Color:</b>		GREY			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Mat1:</b>		15			
<b>Most Common Material:</b>		LIMESTONE			
<b>Mat2:</b>					
<b>Mat2 Desc:</b>					
<b>Mat3:</b>					
<b>Mat3 Desc:</b>					
<b>Formation Top Depth:</b>		24.0			
<b>Formation End Depth:</b>		44.0			
<b>Formation End Depth UOM:</b>		ft			
<b><u>Method of Construction &amp; Well Use</u></b>					
<b>Method Construction ID:</b>		966404077			
<b>Method Construction Code:</b>		1			
<b>Method Construction:</b>		Cable Tool			
<b>Other Method Construction:</b>					
<b><u>Pipe Information</u></b>					
<b>Pipe ID:</b>		10987673			
<b>Casing No:</b>		1			
<b>Comment:</b>					
<b>Alt Name:</b>					
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930717340			
<b>Layer:</b>		2			
<b>Material:</b>		4			
<b>Open Hole or Material:</b>		OPEN HOLE			
<b>Depth From:</b>					
<b>Depth To:</b>		44.0			
<b>Casing Diameter:</b>					
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Construction Record - Casing</u></b>					
<b>Casing ID:</b>		930717339			
<b>Layer:</b>		1			
<b>Material:</b>		1			
<b>Open Hole or Material:</b>		STEEL			
<b>Depth From:</b>					
<b>Depth To:</b>		24.0			
<b>Casing Diameter:</b>		6.0			
<b>Casing Diameter UOM:</b>		inch			
<b>Casing Depth UOM:</b>		ft			
<b><u>Results of Well Yield Testing</u></b>					
<b>Pumping Test Method Desc:</b>		BAILER			
<b>Pump Test ID:</b>		996404077			
<b>Pump Set At:</b>					
<b>Static Level:</b>		10.0			
<b>Final Level After Pumping:</b>		38.0			
<b>Recommended Pump Depth:</b>		40.0			
<b>Pumping Rate:</b>		4.0			
<b>Flowing Rate:</b>					
<b>Recommended Pump Rate:</b>		4.0			
<b>Levels UOM:</b>		ft			
<b>Rate UOM:</b>		GPM			

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction/ Distance (m)</b>	<b>Elev/Diff (m)</b>	<b>Site</b>	<b>DB</b>
<b>Water State After Test Code:</b>	1				
<b>Water State After Test:</b>	CLEAR				
<b>Pumping Test Method:</b>	2				
<b>Pumping Duration HR:</b>	2				
<b>Pumping Duration MIN:</b>	0				
<b>Flowing:</b>	No				
 <b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>	934603575				
<b>Test Type:</b>	Recovery				
<b>Test Duration:</b>	30				
<b>Test Level:</b>	18.0				
<b>Test Level UOM:</b>	ft				
 <b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>	934326618				
<b>Test Type:</b>	Recovery				
<b>Test Duration:</b>	15				
<b>Test Level:</b>	28.0				
<b>Test Level UOM:</b>	ft				
 <b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>	935113543				
<b>Test Type:</b>	Recovery				
<b>Test Duration:</b>	60				
<b>Test Level:</b>	10.0				
<b>Test Level UOM:</b>	ft				
 <b><u>Draw Down &amp; Recovery</u></b>					
<b>Pump Test Detail ID:</b>	934852018				
<b>Test Type:</b>	Recovery				
<b>Test Duration:</b>	45				
<b>Test Level:</b>	10.0				
<b>Test Level UOM:</b>	ft				
 <b><u>Water Details</u></b>					
<b>Water ID:</b>	933925978				
<b>Layer:</b>	1				
<b>Kind Code:</b>	1				
<b>Kind:</b>	FRESH				
<b>Water Found Depth:</b>	42.0				
<b>Water Found Depth UOM:</b>	ft				
 <b><u>Links</u></b>					
<b>Bore Hole ID:</b>	10439103			<b>Tag No:</b>	
<b>Depth M:</b>	13.4112			<b>Contractor:</b>	2518
<b>Year Completed:</b>	1970			<b>Path:</b>	640\6404077.pdf
<b>Well Completed Dt:</b>	1970/02/05			<b>Latitude:</b>	44.3309982444775
<b>Audit No:</b>				<b>Longitude:</b>	-78.7120211770473

# Unplottable Summary

Total: 0 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
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# Unplottable Report

No unplottable records were found that may be relevant for the search criteria.

# 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 Northern Development, Mines, Natural Resources and Forestry (ONDMNRF) maintains this database of 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 Oct 2022**

## **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-Mar 2022**

## **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**

## **Aboveground Storage Tanks:**

Provincial [AST](#)

Historical listing of aboveground storage tanks made available by the Department of Natural Resources and Forestry. Includes tanks used to hold water or petroleum. This dataset has been retired as of September 25, 2014 and will no longer be updated.

**Government Publication Date: May 31, 2014**

## **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-Feb 28, 2022**

## **Borehole:**

Provincial [BORE](#)

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

**Government Publication Date: 1875-Jul 2018**

**Certificates of Approval:**

Provincial CA

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

**Government Publication Date: 1985-Oct 30, 2011\***

**Dry Cleaning Facilities:**

Federal CDRY

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

**Government Publication Date: Jan 2004-Dec 2021**

**Commercial Fuel Oil Tanks:**

Provincial CFOT

Locations of commercial underground fuel oil tanks. This is not a comprehensive or complete inventory of commercial fuel tanks in the province; this listing is a copy of records of registered commercial underground fuel oil tanks obtained under Access to Public Information.

Note that the following types of tanks do not require registration: waste oil tanks in apartments, office buildings, residences, etc.; aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

**Government Publication Date: Feb 28, 2022**

**Chemical Manufacturers and Distributors:**

Private CHEM

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

**Government Publication Date: 1999-Jan 31, 2020**

**Chemical Register:**

Private CHM

This database includes a listing of locations of facilities within the Province or Territory that either manufacture and/or distributes chemicals.

**Government Publication Date: 1999-Feb 28, 2023**

**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 -Feb 2023**

**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-Apr 2023**

**Certificates of Property Use:**

Provincial CPU

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

**Government Publication Date: 1994 - Apr 30, 2023**

**Drill Hole Database:**

Provincial

DRL

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

**Government Publication Date: 1886 - Oct 2022****Delisted Fuel Tanks:**

Provincial

DTNK

List of fuel storage tank sites that were once found in - and have since been removed from - the list of fuel storage tanks made available by the regulatory agency under Access to Public Information.

**Government Publication Date: Feb 28, 2022****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- Apr 30, 2023****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 - Apr 30, 2023****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- Apr 30, 2023****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-Mar 31, 2023****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: Apr 30, 2022**

**Environmental Penalty Annual Report:**

Provincial **EPAR**

This database contains data from Ontario's annual environmental penalty report published by the Ministry of the Environment and Climate Change. These reports provide information on environmental penalties for land / 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, 2022**

**List of Expired Fuels Safety Facilities:**

Provincial **EXP**

List of facilities and tanks for which there was once a fuel registration. This is not a comprehensive or complete inventory of expired tanks/tank facilities in the province; this listing is a copy of previously registered tanks and facilities obtained under Access to Public Information. Includes private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc; includes tanks which have been removed from the ground.

Notes: registration was not required for private fuel underground/aboveground storage tanks prior to January 1990, nor for furnace oil tanks prior to May 1, 2002; registration is not required for waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

**Government Publication Date: Feb 28, 2022**

**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. Includes fire training sites and sites at which Per- and Polyfluoroalkyl Substances (PFAS) are a concern.

**Government Publication Date: Jun 2000-Mar 2023**

**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 2019**

**Federal Identification Registry for Storage Tank Systems (FIRSTS):**

Federal **FRST**

A list of federally regulated Storage tanks from the Federal Identification Registry for Storage Tank Systems (FIRSTS). FIRSTS is Environment and Climate Change Canada's database of storage tank systems subject to the Storage Tank for Petroleum Products and Allied Petroleum Products Regulations. The main objective of the Regulations is to prevent soil and groundwater contamination from storage tank systems located on federal and aboriginal lands. Storage tank systems that do not have a valid identification number displayed in a readily visible location on or near the storage tank system may be refused product delivery.

**Government Publication Date: May 31, 2018**

**Fuel Storage Tank:**

Provincial **FST**

List of registered private and retail fuel storage tanks. This is not a comprehensive or complete inventory of private and retail fuel storage tanks in the province; this listing is a copy of registered private and retail fuel storage tanks, obtained under Access to Public Information.

Notes: registration was not required for private fuel underground/aboveground storage tanks prior to January 1990, nor for furnace oil tanks prior to May 1, 2002; registration is not required for waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

**Government Publication Date: Feb 28, 2022**

**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-Oct 31, 2022**

**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 2019**

**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\***

**Fuel Oil Spills and Leaks:**

Provincial

[INC](#)

Listing of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen reported to the Spills Action Centre (SAC). This is not a comprehensive or complete inventory of fuel-related leaks, spills, and incidents in the province; this listing is a copy of incidents reported to the SAC, obtained under Access to Public Information. Includes incidents from fuel-related hazards such as spills, fires, and explosions. Records are not verified for accuracy or completeness.

**Government Publication Date: Feb 28, 2022**

**Landfill Inventory Management Ontario:**

Provincial

[LIMO](#)

The Landfill Inventory Management Ontario (LIMO) database is updated every year, as the Ministry of the Environment, Conservation and Parks compiles new and updated information. Includes small and large landfills currently operating as well as those which are closed and historic. Operators of larger landfills provide landfill information for the previous operating year to the ministry for LIMO including: 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 include information such as site owner, site location and certificate of approval # and status.

**Government Publication Date: Mar 21, 2022**

**Canadian Mine Locations:**

Private

[MINE](#)

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

**Government Publication Date: 1998-2009\***

**Mineral Occurrences:**

Provincial [MNR](#)

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

**Government Publication Date: 1846-Feb 2023**

**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, 2021**

**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 Canada Energy Regulator (CER) - previously 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, 2021**

**National Energy Board Wells:**

Federal [NEBP](#)

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

**Government Publication Date: 1920-Feb 2003\***

**National Environmental Emergencies System (NEES):**

Federal

NEES

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

**Government Publication Date: 1974-2003\***

**National PCB Inventory:**

Federal

NPCB

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

**Government Publication Date: 1988-2008\***

**National Pollutant Release Inventory:**

Federal

NPRI

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

**Government Publication Date: 1993-May 2017**

**Oil and Gas Wells:**

Private

OGWE

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

**Government Publication Date: 1988-Feb 30, 2023**

**Ontario Oil and Gas Wells:**

Provincial

OOGW

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

**Government Publication Date: 1800-Aug 2021**

**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 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 - Apr 30, 2023**

**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: Oct 2011- Apr 30, 2023**

**Pipeline Incidents:**

Provincial PINC

List of pipeline incidents (strikes, leaks, spills). This is not a comprehensive or complete inventory of pipeline incidents in the province; this listing in an historical copy of records previously obtained under Access to Public Information. Records are not verified for accuracy or completeness.

**Government Publication Date: Feb 28, 2021**

**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 PTTW's on the registry such as OWRA s. 34 - Permit to take water.

**Government Publication Date: 1994 - Apr 30, 2023**

**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: 1986-1990, 1992-2020**

**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-Mar 2023**

**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-Feb 28, 2023**

**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

List of spills and incidents made available the Ministry of the Environment, Conservation and Parks. 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. The Ministry of the Environment, Conservation and Parks cites the coronavirus pandemic as an explanation for delays in releasing data pursuant to requests.

**Government Publication Date: 1988-Oct 2021**

**Wastewater Discharger Registration Database:**

Provincial

[SRDS](#)

Facilities that report either municipal treated wastewater effluent or industrial wastewater discharges under the Effluent Monitoring and Effluent Limits (EMEL) and Municipal/Industrial Strategy for Abatement Regulations. The Municipal/Industrial Strategy for Abatement (MISA) division of the Ontario Ministry of Environment keeps record of 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.

**Government Publication Date: 1990-Dec 31, 2020**

**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 - Apr 2020**

**Variances for Abandonment of Underground Storage Tanks:**

Provincial

[VAR](#)

Listing of variances granted for storage tank abandonment. This is not a comprehensive or complete inventory of tank abandonment variances in the province; this listing is a copy of tank abandonment variance records previously obtained under Access to Public Information. In Ontario, registered 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.

**Government Publication Date: Feb 28, 2022**

**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- Apr 30, 2023**

**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 30th, 1990. For each "active" site as of October 31st 1990, information is provided on site location, site/CA number, waste type, site status and site classification. For each "closed" site as of October 31st 1990, information is provided on site location, site/CA number, closure date and site classification. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number.

**Government Publication Date: Up to Oct 1990\***

**Water Well Information System:**

Provincial

[WWIS](#)

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

**Government Publication Date: Jun 30 2022**

# 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.



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**Appendix E**  
**Opta Report**

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enviroscan



An SCM Company

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Markham, Ontario L3T 7Z3

T: 905-882-6300  
W: [www.optaintel.ca](http://www.optaintel.ca)

Report Completed By:

Midori

Site Address:

318 & 332 Lindsay St. S., Kawartha Lakes, ON

Project No:

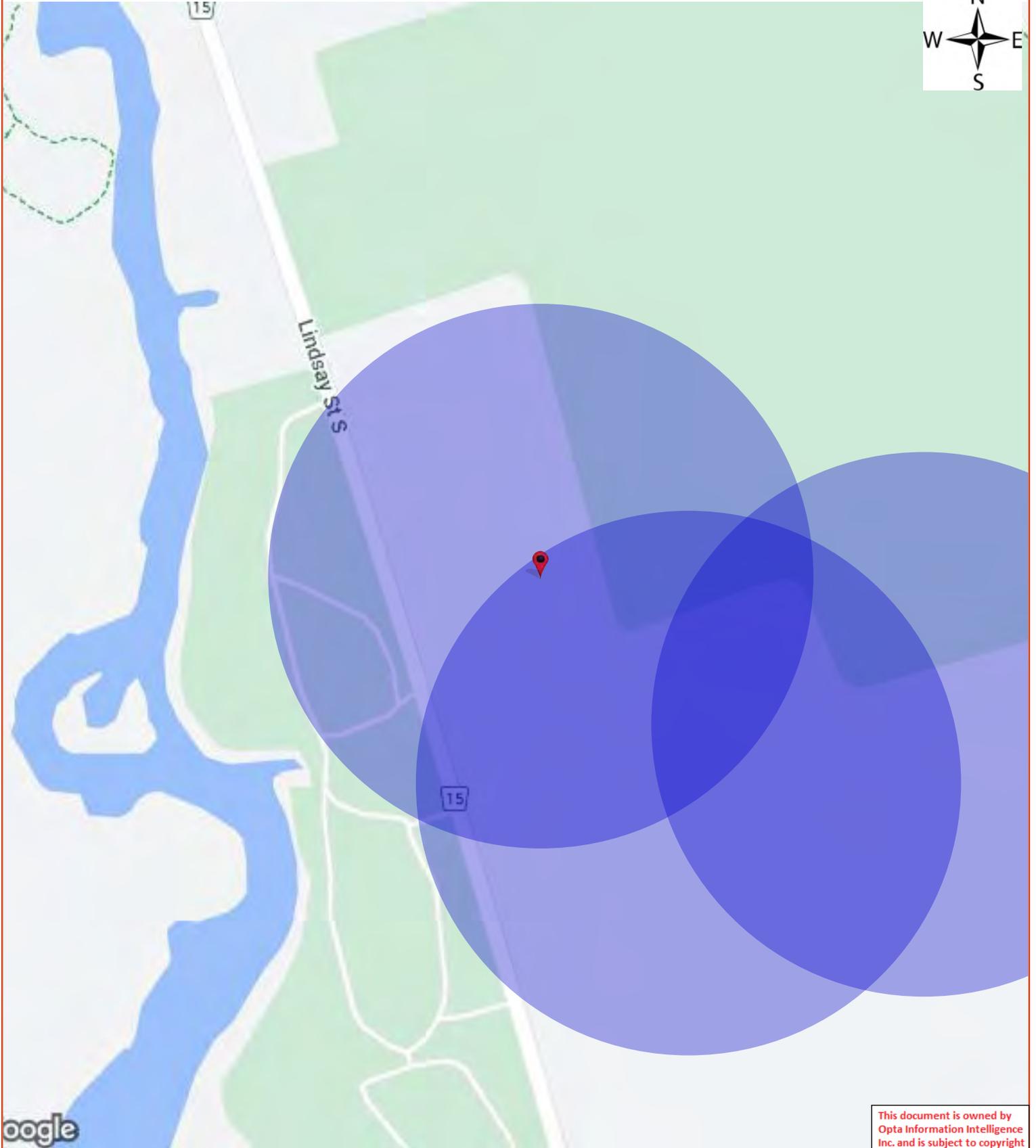
23060900290  
Opta Order ID:  
129165

Requested by:

Eleanor Goolab  
ERIS

Date Completed:

6/20/2023 2:16:20 PM



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# Opta Historical Environmental Services Enviroscan<sup>TM</sup> Terms and Conditions

## Report

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

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## Entire Agreement

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

## Governing Document

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

## Law

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



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Toll Free: 905.882.6300  
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[www.optaintel.ca](http://www.optaintel.ca)

No Records Found

Requested by:  
Eleanor Goolab

Date Completed: 06/20/2023 14:16:20



OPTA INFORMATION INTELLIGENCE

No Records Found





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## **Appendix F**

### **Aerial Imagery Review**

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Year	Source	Notes
1928	NAPL	<p>The Site is developed with two residential dwellings, located on the south portion of the Site. The remainder of the Site consists of vacant undeveloped and agricultural land. In addition, an on-site railway line transects the central portion of the Site in a north-south direction.</p> <p>The surrounding area to the north of the Site consists of vacant undeveloped/agricultural land and an associated residential dwelling. The surrounding area to the south of the Site consists of vacant undeveloped/agricultural land and an associated residential dwelling. The surrounding area to the east of the Site consists of vacant undeveloped/agricultural land. The surrounding area to the west of the Site consists of a cemetery and vacant undeveloped/agricultural land with an associated residential dwelling.</p>
1959	NAPL	<p>The Site was generally similar to the 1928 aerial photograph, with the addition of a residential dwellings, similar in size and configuration to 332 Lindsay Street South present on the west portion of the Site. Observations were limited due to poor image quality. The on-site railway line is no longer present, and has been removed on the properties to the north and south of the Site. The surrounding area was similar to the 1928 aerial photograph; however, a structure suspected to be commercial or industrial, is evident south of the Site on the southeast corner of Lindsay Street South and Highway 7. Dwelling, suspected to be residential, are evident west of the Site.</p>
1965	NAPL	<p>The Site was similar to the 1959 aerial photograph.</p> <p>The surrounding area was similar to the 1959 aerial photograph; however, a commercial building was evident.</p>



Year	Source	Notes
1976	NAPL	<p>The Site was similar to the 1965 aerial photograph, similar in size and configuration to the current configuration.</p> <p>The surrounding area was similar to the 1965 aerial photograph; however, commercial buildings were evident west of the Site at 344 and 354 Lindsay Street South. It should be noted that several residential dwellings were demolished and no longer evident.</p>
1981	NAPL	<p>The Site was similar to the 1976 aerial photograph.</p> <p>The surrounding area was similar to the 1976 aerial photograph.</p>
2008	Google	<p>The Site was similar to the 1981 aerial photograph; however, the residential dwellings located on the south portion of the Site were demolished and no longer evident.</p> <p>The surrounding area was similar to the 1981 aerial photograph; however, a golf course and associated club house were located north and east of the Site, and the car dealership is present south of the Site.</p>
2013	Google	<p>The Site was similar to the 2008 aerial photograph.</p> <p>The surrounding area was similar to the 2008 aerial photograph.</p>
2019	Google	<p>The Site was similar to the 2013 aerial photograph.</p> <p>The surrounding area was similar to the 2013 aerial photograph.</p>

Sources: NAPL – National Air Photo Library  
 Google – Google Earth Pro



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**Appendix G**  
**Curriculum Vitae**

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## Christine Wilson, B.A. (Hons)

## Senior Project Manager

Ms. Wilson holds a Bachelor of Arts Honours degree in Environmental Studies from Carleton University. With 15 years of environmental consulting experience, Ms. Wilson has provided both project management and technical support to numerous private Clients on various environmental projects across Canada. Her roles and responsibilities have been at all phases of a project, which include proposal generation, fieldwork, project supervision, report preparation and/or senior reviewing Environmental Site Assessments.

### SUMMARY OF PROFESSIONAL EXPERIENCE

- September 2021 - Present      Senior Project Manager. Cambium Inc.  
Kingston, Ontario, Canada  
*Responsible for senior project management on environmental projects, including proposal preparation, client liaison and project delivery.*
- March 2021 - September 2021      Project Manager. Paradigm Properties Inc.  
Ottawa, Ontario, Canada  
*Responsibilities included obtaining construction permits for tenant fit-ups and coordinating/supervising commercial construction projects.*
- 2017 - 2021      Senior Project Manager. Pinchin Ltd.  
Ottawa, Ontario, Canada  
*Responsibilities included senior project management on national environmental projects, which included budgeting, coordination of multi-disciplinary project staff, liaison with clients, data analysis and interpretation, report preparation, senior technical review and business development.*
- 2013 - 2017      Project Manager. Pinchin Ltd.  
Ottawa, Ontario, Canada  
*Responsibilities included proposal preparation, conducting Environmental Site Assessments, report preparation and business development.*
- 2011 - 2013      Environmental Technologist. Franz Environmental Inc.  
Ottawa, Ontario, Canada  
*Responsibilities included completing Environmental Site Assessments, groundwater sampling programs and at various properties located across Canada.*
- 2008 - 2013      Project Technologist. Pinchin Ltd.  
Ottawa, Ontario, Canada  
*Responsibilities included completing historical research (i.e., city directories and aerial photographs) at the Library and Archives of Canada and the National Air Photo Library, conducting field assessments and reporting on findings.*



## **EDUCATION & TRAINING**

### **Education**

2008 Bachelor of Arts Honours in Environmental Studies. Carleton University  
Ottawa, Ontario, Canada

### **Courses**

2018 Mini MBA. McGill Executive Institute  
Toronto, Ontario, Canada

2013 Leadership/Business Development. Awesome Journey  
Ottawa, Ontario, Canada

2013 Asbestos Awareness. Pinchin Ltd.  
Toronto, Ontario, Canada

## **SELECTED EXPERIENCE**

Ms. Wilson has completed hundreds of Environmental Site Assessments for due-diligence purposes on residential, commercial, institutional and industrial properties across Canada. Various assessments have also included completing environmental assessments in support of a Site Plan Application for properties located in Ottawa and Toronto.



**LAURA FITZGERALD, M.Sc.**

*Project Manager*

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## **SUMMARY OF PROFESSIONAL EXPERIENCE**

- 2022 - Current      Project Manager. Cambium Inc.  
Oshawa, Ontario, Canada  
*Coordinated and manage field programs for Phase One/I and Phase Two/II ESA. Develop scope of work, and complete background reviews, and technical report writing.*
- 2021 - 2022      Project Coordinator. Cambium Inc.  
Oshawa, Ontario, Canada  
*Coordinated and manage field programs for Phase One/I and Phase Two/II ESA. Develop scope of work, and complete background reviews, and technical report writing.*
- 2018 - 2021      Project Manager. S2S Environmental Inc.  
Pickering, Ontario, Canada  
*Managed and coordinated Phase Two/II ESAs, along with hydrogeological assessments. Completed background review, to develop scope of work and oversaw the sample collection and technical reporting.*
- 2017 - 2018      Project Scientist/Coordinator. S2S Environmental Inc.  
Pickering, Ontario, Canada  
*Coordinated and completed field work for Phase Two/II ESA, along with background reviews and technical report writing.*
- 2017 - 2017      Document Controller. Tetra Tech  
Pickering, Ontario, Canada  
*Provided quality control checks for all deliverables*
- 2012 - 2016      Research Assistant. Trent University  
Peterborough, Ontario, Canada  
*Coordinated multiple sampling campaigns for B.Sc.Hons. and M.Sc. research projects and assisted with other ongoing projects in the lab group. Prepared samples of soil, water or vegetation for analysis.*

## **EDUCATION & TRAINING**

- 2016      M.Sc. Environmental and Life Science – Biogeochemistry  
Trent University, Peterborough, Ontario, Canada
- 2014      B.Sc. Biology  
Trent University, Peterborough, Ontario, Canada
- 2012      B.A.Hons. Geography - Physical  
Carleton University, Ottawa, Ontario, Canada



## **PUBLICATIONS**

Geochemistry and toxicity of a large slag pile and its drainage complex in Sudbury, Ontario. *Science of The Total Environment*, 605 (2017), 461-470

The impact of drought and air pollution on metal profiles in peat cores. *Science of The Total Environment*, 541 (2016), 1031-1040

## **SELECTED EXPERIENCE**

### ***PHASE I ENVIRONMENTAL SITE ASSESSMENTS – ONTARIO***

Managed multiple Phase I ESAs in support of property transactions throughout Ontario with established Canadian Standards Association (CSA) Standard Z768-01 requirements. Completed historical document reviews to identify actual and potential environmental concerns associated with current and historical activities at the Site and surrounding properties.

### ***PHASE ONE AND TWO ENVIRONMENTAL SITE ASSESSMENTS – DURHAM REGION, ONTARIO***

Managed multiple Phase One and Two ESAs in support of Site Plan Applications for developments in Durham Region Ontario. Completed historical document reviews to develop lists a potentially contaminating activities and developed sampling and analysis plan with the QP, concurrent with O.Reg 153/04 requirements. Many completed concurrently with Hydrogeological Assessment and a Geotechnical Investigation.

### ***PHASE TWO ENVIRONMENTAL SITE ASSESSMENT AND RECORD OF SITE CONDITION – BRAMPTON, ONTARIO***

Managed the Phase Two ESA to complete a record of site condition in support of a residential development in Brampton Ontario. Developed the sampling and analysis plan with the QP, concurrent with O.Reg 153/04 requirements, and answered MECP questions for resubmission and acceptance. Concurrently with the Phase Two ESA, a Hydrogeological Assessment and a Geotechnical Investigation were completed in support of the development plans.



### ***PHC SOIL EXCAVATION – TORONTO, ONTARIO***

Delineated and managed the removal of 5,000 Mt of PHC impacted soil from a small property in Toronto. Excavation was completed in support of obtaining a record of site condition for the site, and was advanced to a depth of 6 mbgs. The property was formerly used for automotive repairs, and was a retail fuel outlet in the 1920s to 1980s. Removal of impacted soil decreased concentrations of PHC impacting groundwater to meet standards at the Site. Operated as the main client and subcontractor contact for the project and met all remediation objectives set out.

### ***DNAPL GROUNDWATER REMEDIATION AND PRB INSTALLATION – BRANTFORD, ONTARIO***

Managed and worked closely with the remedial subcontractor to develop a stepped approach to delineating and remediating VOC contamination on the client site. Impacted area was located in the loading bay of a busy grocery store, so coordination and communication to mitigate issues related to delivery schedules were also pertinent. The groundwater impacts were delineated horizontally and vertically, and as part of the program, high resolution contaminant mapping was completed to ensure the successful installation of a permeable reactive barrier at the property line. Successful delineation and installation of the barrier met all remedial objectives. Additionally, as part of the insurance claim all work plans and results were reviewed by a third-party reviewer to ensure satisfaction from all parties involved.

### ***ASSESSMENT OF PAST USES AND SOIL CHARACTERIZATION – ONTARIO***

Managed multiple Assessment of Past Uses and sampling for Soil Characterization Reports in support of excess soil removal throughout Ontario. Completed historical document reviews to develop lists a potentially contaminating activities and developed sampling and analysis plan with the QP, concurrent with O.Reg 406/19 requirements.



**DAVID LABELLE, B.A., EPt**

*Project Coordinator*

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## **SUMMARY OF PROFESSIONAL EXPERIENCE**

- 2023 - Present      Project Coordinator. Cambium Inc.  
Ottawa, Ontario, Canada  
*Responsibilities included completing Environmental Site Assessments, coordinate Phase I ESA and Phase II ESA assessments (i.e., client coordination, locates, subcontractors, employees, etc.) and groundwater sampling programs.*
- 2021 - 2023      Project Coordinator. Pinchin Ltd.  
Ottawa, Ontario, Canada  
*Responsibilities included completing Environmental Site Assessments, coordinate Phase I ESA and Phase II ESA assessments (i.e., client coordination, locates, subcontractors, employees, etc.) and groundwater sampling programs.*
- 2017 - 2021      Project Technologist. Pinchin Ltd.  
Ottawa, Ontario, Canada  
*Responsibilities included completing Environmental Site Assessments, drilling programs, groundwater sampling programs, as well as the collection of historical and regulatory records for various properties located across Canada.*

## **PROFESSIONAL ASSOCIATIONS**

- Eco Canada, Environmental Professional in Training

## **EDUCATION & TRAINING**

- 2023              WHIMIS 2015
- 2016              Bachelor of Arts – Environmental Studies. Carleton University  
Ottawa, Ontario, Canada

## **LANGUAGES**

- English (written, verbal, reading)
- French (written, verbal, reading)



## **SELECTED EXPERIENCE**

### ***ENVIRONMENTAL SITE ASSESSMENTS***

- Mr. Labelle participated in the largest industrial real estate transaction in Canadian history. Pinchin's Client was in the process of acquiring 194-property portfolio and as such, environmental assessments (i.e., Phase I ESAs, Phase I ESA Updates, or Environmental Peer Reviews) were required for all properties. Mr. Labelle took on site assessments and reporting for 20 properties and completed them within three weeks. Following the initial Phase I ESA assessments, Mr. Labelle participated in over 15 Phase II ESA assessments (i.e., drilling, groundwater sampling and reporting);
- Mr. Labelle completed an entire portfolio of 35 Phase I ESA and Phase I ESA Update assessments for a Client in one week;
- Mr. Labelle completed over 10 Site Plan Approval ESAs over the past 5 years;
- Mr. Labelle completed fieldwork (i.e., drilling and groundwater sampling) on 3 Record of Site Condition Phase Two ESAs over the past 3 years; and
- Mr. Labelle has completed over 600 Phase I ESAs and over 50 Phase II ESAs over the past 5 years.

### ***ANNUAL LANDFILL MONITORING***

- Mr. Labelle participated in the annual surface and groundwater monitoring program over the past 5 years for the townships of Madawaska Valley, Township of Pakenham and City of Ottawa

### ***VOLATILE ORGANIC COMPOUND TREATMENT FACILITIES***

- Mr. Labelle was responsible for the management and sampling of volatile organic compounds air stripper treatment centres at two commercial/industrial locations. His role included scheduling maintenance/cleaning, ensuring system operation and groundwater sampling.

### ***IMPACTED SOIL REMEDIATION***

- Mr. Labelle completed several oil spill incident remediations. His role included the oversight of impacted soil removal, soil sample collection and analytical data interpretation.

## **APPENDIX B: Source Water Protection Assessment**

**DATE** October 31, 2016**PROJECT No.** 1648668**TO** Mr. Saverio Montemarano  
Bromont Group of Companies**CC** Marta Lopez-Egea**FROM** Melanie Kennedy, Kevin MacKenzie**EMAIL** Melanie.Kennedy@golder.com  
Kevin\_MacKenzie@golder.com  
Marta\_Lopez-Egea@golder.com**SOURCE WATER PROTECTION ASSESSMENT- BROMONT PROPERTY PARCELS 5, 6 AND 7****1.0 INTRODUCTION**

Bromont Group of Companies (Bromont) has retained Golder Associates Ltd. (Golder) to complete a source water protection assessment for the proposed commercial property located on the north east corner of the intersection of Lindsay Street North and Highway 7 corresponding to Parcels 5, 6 and 7 (referred to as the Site) in the City of Kawartha Lakes, Ontario. Since the proposed development is located in the Kawartha-Haliburton source protection area and within an Intake Protection Zone (IPZ-2/IPZ-3) this report addresses the potential drinking water threats of concern as identified in the Trent Source Protection Plan (Trent Conservation Coalition, 2014).

The Trent Source Protection Plan (TSPP) (Approved October 23, 2014) outlines the policies designed to meet the General regulation objectives specified under the *Water Clean Act (2006)*, which are:

- 1) *To protect existing and future drinking water sources in the source protection area; and*
- 2) *To ensure that for each area where an activity is or would be a significant drinking water threat:*
  - a. *The activity never becomes a significant water threat, or*
  - b. *If the activity is occurring when the source protection plan takes effect, the activity ceases to be a significant water threat.*

**1.1 Objectives**

Based on the aforementioned legal framework, the objectives of this report are to:

- Identify any significant water drinking threats associated with the proposed development. The vulnerability of the area (source water protection zones) and the proposed activities will be assessed to identify any potential areas and activities of concern;
- Outline the applicable policies (as indicated in the Trent Source Protection Plan (October 2014)) to ensure the proposed activities would never become a significant water threat; and



- Provide additional recommendations regarding allocation of proposed activities to minimize and/or eliminate the potential significant drinking water threats.

## **2.0 IDENTIFICATION OF SIGNIFICANT DRINKING WATER THREATS**

### **2.1 Source Water Protection Zone**

The Ministry of the Environment and Climate Change (MOECC) interactive Source Water Protection (SWP) Vulnerability Mapping was reviewed. The Site is not located in a Well Head Protection Area (WHPA) or a Significant Groundwater Recharge Area. A portion of the Site was found to fall within areas classified as Intake Protection Zones (IPZ) and therefore there is a potential to affect sources of drinking water.

The identified areas, classification and associated vulnerability scores (ranging between 1 and 10) are shown in Figure 1 and described as follows:

- IPZ2 correspond to the west portion of the corridor along Sucker Creek towards the outlet to Scugog River. The vulnerability score for this area is 9; and
- IPZ3 identified along the rest of the Sucker Creek corridor and an additional water feature draining towards the stream, yielding a vulnerability score of 6.

The Policy Applicability Map 4-4 (Trent Conservation Coalition, 2014), highlights the areas where specific policies apply (provided in Attachment A). For the Site, it was found that the portion classified as IPZ2 corresponds to the area highlighted by the Policy Applicability Map. Therefore, this area of concern within the Site boundaries is referred to as the “vulnerable area”, which is shown on Figure 2.

Sucker Creek is designated as an Environmental Protection area on Schedule A3 (Land Use) of the City of Kawartha Lakes Official Plan (2012). Development or site alteration within this designation is restricted to uses such as agricultural, conservation, forestry, nursery and gardens, recreation or wildlife management areas. In addition, no placement or removal of fill is permitted in this land use designation unless approved by the City, Kawartha Conservation Authority (KRCA) or Ministry of Natural Resources and Forestry (MNR).

Moreover, Sucker Creek and its riparian area are located within the Kawartha Conservation Authority (KRCA) regulated area, which is also shown on Figure 1. Any proposed development of the site and study area must be in compliance with O. Reg. 182/06 Kawartha Region Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (Ontario 1990).

### **2.2 Identification of Significant Drinking Water Threat Activities (Clean Water Act, 2006)**

Significant water threats include chemical and pathogen threats. The Clean Water Act (2006) identifies 21 activities as potential drinking water threats which have been enumerated in Attachment B. Out of those, the activities with the potential to pose a significant water threat identified on the proposed development of the Site, are:

- The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage (*which includes stormwater management*);
- The application of road salt;

- The handling and storage of road salt;
- The storage of snow; and
- Activities that reduce the infiltration of an aquifer.

In addition, the TSPP (Trent Conservation Coalition , 2014) identifies landscaping activities that promote waterfowl congregation as a local drinking water threat, given the potential of pathogen contamination, which would also be applicable for the proposed development.

Based on our current understanding of the proposed development, Golder assumes that the only activities with the potential to pose a significant drinking threat are those included in this section.

### **2.3 Significant Drinking Water Threats (Trent Source Protection Plan, 2014)**

The TSPP (2014) outlines the policies, legal effect, implementer, and related monitoring policies to address significant drinking water threats and the policy applicability map. Based on the Trent Assessment Report Map Reference 4-4 (Trent Conservation Coalition , 2014), the area where policies apply correspond to the “vulnerable area” as identified in Figure 2. Based on the proposed development, the significant drinking water threats identified are:

#### **2.3.1 Sewage Systems – Stormwater Management Facilities**

The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage are activities prescribed as drinking water threats under *the Clean Water Act, 2006*. Note that the term sewage is inclusive of septic and stormwater. Therefore, the proposed stormwater management pond would present a threat circumstance if located on the vulnerable area. The threat circumstance corresponds to 277 – 504 for chemical threats and 1949 for pathogen threats. Refer to MOECC Table of Drinking Water Threats (2015). Applicable circumstances are described in Attachment C (MOE, 2008).

For the proposed development the applicable policy is S-3 within the vulnerable area and monitoring policy G-2(2). The policies are outlined, as per the TSPP, in Attachment C. As described in policy S-3(3), the report required by policy G-2(2) is recommended to include a description of the conditions on the prescribed instrument that will ensure that the activity does not become a significant drinking water threat. A prescribed instrument is any document of legal effect other than a regulation issued under an Act and includes a permit, license, approval, authorization, direction or order issued under an act (Source Protection Planning Bulletin – Overview of Prescribed Instruments, December 2010), such as an Environmental Compliance Approval (ECA) and supporting documents (e.g., risk management plans).

Stormwater management works (i.e. ditches, Stormwater Management (SWM) ponds, Low Impact Development (LID) features etc.) require an Environmental Compliance Approval (ECA) for the site which is obtained from the MOECC under Section 53 of the Ontario Water Resources Act (OWRA, 1990). An ECA is considered to be a prescribed instrument under the provincial legislation.

If the SWM pond is developed within the vulnerable area, according to policy S-3(1) on the TSSP (2014), the prescribed instrument (i.e. the ECA and the risk management plan) must contain conditions to ensure that the works do not become a significant drinking water threat. While the SWM pond will require an Environmental Compliance Approval (ECA), the conditions will be dependent on the location of the pond. If located within the vulnerable area, as per monitoring policy G-2(2), the Ministry will have to prepare an annual summary of actions undertaken to ensure the works do not become a significant water threat for the applicable Source Protection

Authority. Therefore, the ECA will contain additional conditions to ensure the protection of the corresponding water sources. Some of the conditions could include the installation of a sluice gate to control the discharge, stop logs, oil and grease separator or an appropriate lining and increased extended detention volume may be required, to allow additional containment storage in case of emergency.

### **2.3.2 Application and storage of road salt**

Application and storage of road salt are activities prescribed as drinking water threats under the Clean Water Act, 2006. The sodium and chloride are included in the MOECC tables of drinking water threats, given the potential to contaminate the surface water and groundwater. The threat circumstances are 88 – 95 for road salt application and 1433 to 1444 for road salt storage. Refer to MOECC Table of Drinking Water Threats (2015). Applicable circumstances are described in Attachment C (MOE, 2008).

Given the proposed development, applicable policies are R-1, R-3, R-4 and R-6 and monitoring policies are G-8(4), G-10(2) and G-7(1) within the vulnerable area. The policies are outlined, as per the TSPP, in Attachment C.

As per policy R-1 a risk management plan for the application of road salt activity within the vulnerable area will have to be agreed on or established under section 58 on the Clear Water Act (2006) prior to engaging in that activity. The plan will be prepared in agreement with policy G-8. The Risk Management Plan will include provisions for ensuring that: (1) a salt management plan is in place, (2) updates to the plan are made within one year of the approval of an updated assessment report, and (3) an annual report is completed for the Risk Management Official, highlighting activities undertaken as part of the salt management plan.

Policy R-3 includes the strategic legal tools to continue ongoing investigation and implementation of innovative practices and mitigative technologies regarding road salt application and management of infiltration and runoff. Moreover the policy specifies active consideration of a pilot project which could benefit drinking water sources within the region and is part of the strategic legal frame implemented by the MTO.

Policy R-4 describes the specific action and land use planning tools to enforce the consideration of vulnerable areas during the Planning and Environmental Assessment for the construction of impervious surfaces. This is part of the MTO (TSSP, 2014 policy R-4(1)) and the Approval Authority under the Planning Act (TSSP, 2014 policy R-4(3)) strategic legal framework.

Storage of road salt is prohibited on vulnerable areas (score equal or larger than 9) as per policy R-6. This activity is prohibited as per section 57 of the Clear Water Act (2006).

### **2.3.3 Snow Storage**

Storage of snow is prescribed as a drinking water threat under the Clean Water Act, 2006. This excludes snow stored along sides of the road as a result of plowing activities. The drinking water threat is associated with chemical contamination as a result of runoff. The threat circumstances are 1445 to 1532, are described in Attachment C (MOE, 2008).

Given the proposed development the applicable policy is O-2 and monitoring policy is G-7(1). The policies are outlined, as per the TSPP, in Attachment C.

Storage of snow is prohibited on vulnerable areas (score equal or larger than 9) as per policy O-2. This activity is prohibited as per section 57 of the Clear Water Act (2006).

### **2.3.4 Landscaping that promotes waterfowl congregation**

The local threat applies only to the Lakefield and Peterborough intake protection zones 1 and 2 according to the TSSP (Trent Conservation Coalition , 2014)

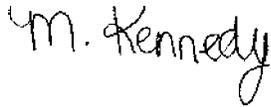
### **2.3.5 Activities that reduce the recharge of an aquifer**

As a result of the proposed development of the site and inclusion of impervious areas, the infiltration may be reduced in comparison to existing conditions. Based on the zoning laws for commercial and prestige employment outlined in the Town of Lindsay Comprehensive Zoning By-Law (2015), Golder assumed that the maximum allowable impervious coverage (50%) will be used on-site. Therefore, it has been assumed that 50% of the Site will be covered by buildings, roads and parking lots. The modifications on infiltration and runoff are summarized in the Water Balance Assessment developed within the Hydrogeological Report (Golder, 2016). In order to maintain the pre-development infiltration volume under post-development conditions Golder recommends the inclusion of Low Impact Development (LID) features.

## **3.0 RECOMMENDATIONS**

This section includes a set of recommendations as a result of the review of the applicable legal framework and the proposed activities.

- The SWM pond is an activity identified as a potential drinking water threat if located in a “vulnerable area”. The applicable Source Water Protection policies would result in additional conditions (i.e., oversized volume, sluice gate, stop-logs, etc.) to be included on the ECA and a more rigid monitoring program to ensure compliance with policies. It is therefore recommended that the pond be located outside of the vulnerable area, to the extent feasible. Further discussion with the Risk Management Official (RMO) at Kawartha Conservation Authority will be conducted regarding the location of the SWM pond.
- Snow and road salt storage is prohibited within the vulnerable area.
- A Risk Management Plan will have to be developed and agreed on prior to engaging in road salt application. Best practices such as minimization of the road salt usage and application of innovative techniques are recommended.
- The Trent Source Protection Plan (TSPP, 2014) identifies additional drinking water threats related to landscaping areas that promote waterfowl congregation. The waterfowl drinking water threats identified in the plan pertain to the Lakefield and Peterborough intake protection zones 1 and 2 and are not directly applicable to the site. However, Golder recommends to include measures to mitigate congregation of waterfowl within the vulnerable area, such as planting shoreline vegetation, and minimized mown and landscaped areas on the vulnerable zone.
- Low Impact Development (LID) features will likely be required to increase infiltration and decrease runoff under post development conditions.



Melanie Kennedy, B.Eng, P.Eng.  
Senior Water Resources Engineer

MLE,MK/KMM/mp



Kevin MacKenzie, M.Sc., P.Eng.  
Associate, Senior Water Resources Engineer

Attachments: Figure 1 - Regulated Areas and Protected Zones  
Figure 2 - Policy Applicability Map  
Attachment A – Policy Applicability Map  
Attachment B – Prescribed Drinking Water Threats  
Attachment C – Applicable Policies and Circumstances Threats Tables

\\golder.gds\gal\whitby\active\2016\3 proj\1648668 bromont\_geo and hydro\_lindsay\surface water\reports\source water protection\_tm\1648668 final tm 2016oct31 swp.docx

## REFERENCES

Drinking Water Source Protection (2010) *Source Protection Planning Bulletin – Overview of Prescribed Instruments*

City of Kawartha Lakes. Development Services – *Planning Division. Official Plan – 2012*. Effective on February 6, 2012 (updated June 2012).

Ministry of the Environment (2008), *Tables of Drinking Water Threats. Clean Water Act, 2006, November 20, 2008*

Ministry of Environment and Climate Change (2010) <http://www.applications.ene.gov.on.ca/swp/en/index.php>  
*Map: Source Water Protection.*

Ontario, Government of (Ontario). 1990. *Conservation Authorities Act*. S.O. 1990, c. C.27.

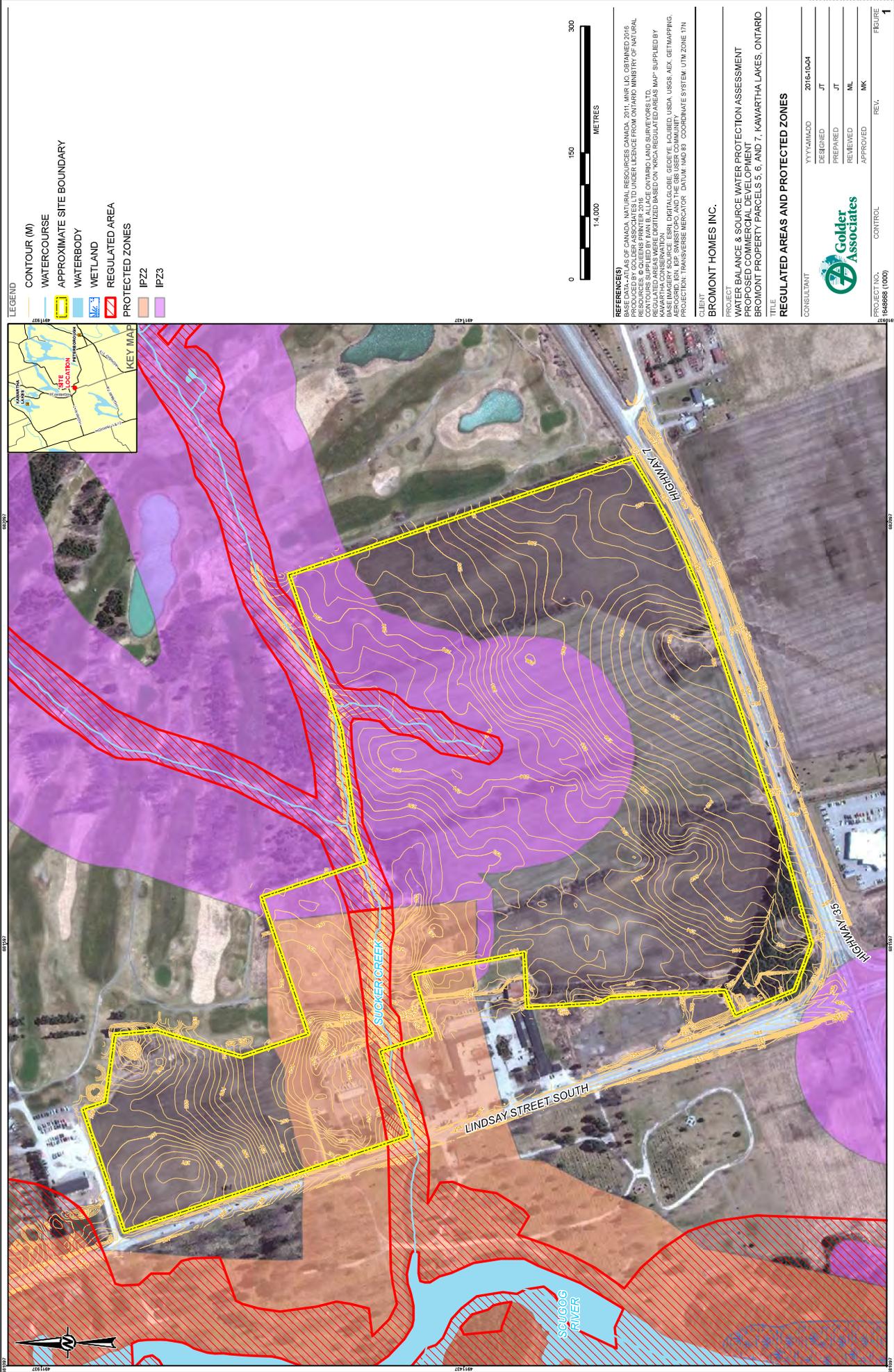
Ontario, Government of (Ontario). 1990. *Ontario Water Resource Act*. R.S.O. 1990, c. O.40.

Ontario, Government of (Ontario). 2006. *Clean Water Act*. S.O. 2006, c. 22

Town of Lindsay. 2015. *Comprehensive Zoning By-law#2000-75 Consolidated Version – February 2015*.

Trent Conservation Coalition . (2014). *Trent Source Protection Plan*.

# FIGURES



- LEGEND**
- CONTOUR (M)
  - WATERCOURSE
  - APPROXIMATE SITE BOUNDARY
  - WATERBODY
  - WETLAND
  - REGULATED AREA
  - PROTECTED ZONES
  - IP22
  - IP23



**REFERENCES**

MAPS OF ONTARIO, WATER RESOURCES DIVISION, 1974, 1976, 1978, 1980, 1982, 1984, 1986, 1988, 1990, 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018, 2020, 2022, 2024

PROCESSED BY GOLDIER ASSOCIATES LTD. UNDER LICENSE FROM ONTARIO MINISTRY OF NATURAL RESOURCES & FORESTRY

REGULATED AREAS MERGED/UTILIZED BASED ON "KORCA REGULATED AREAS MAP" SUPPLIED BY KAWARTHA CONSERVATION DISTRICT

APPROXIMATE SITE BOUNDARY DERIVED FROM "KORCA REGULATED AREAS MAP" SUPPLIED BY KAWARTHA CONSERVATION DISTRICT

PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17N

**CLIENT**  
BROMONT HOMES INC.

**PROJECT**  
WATER BALANCE & SOURCE WATER PROTECTION ASSESSMENT  
PROPOSED COMMERCIAL DEVELOPMENT  
BROMONT PROPERTY PARCELS 5, 6, AND 7, KAWARTHA LAKES, ONTARIO

**TITLE**  
REGULATED AREAS AND PROTECTED ZONES

**CONSULTANT**  
Golder Associates

2016/04/04  
DESIGNED: JT  
PREPARED: JT  
REVIEWED: ML  
APPROVED: MK

PROJECT NO.: 1648668 (1000)  
CONTROL

FIGURE 1

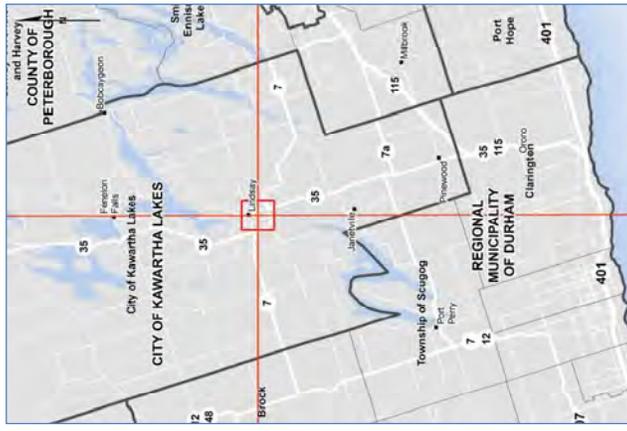


# ATTACHMENT A

## Policy Applicability Map



# Lindsay Municipal Surface Water System Kawartha-Haliburton Source Protection Area Policy Applicability Map

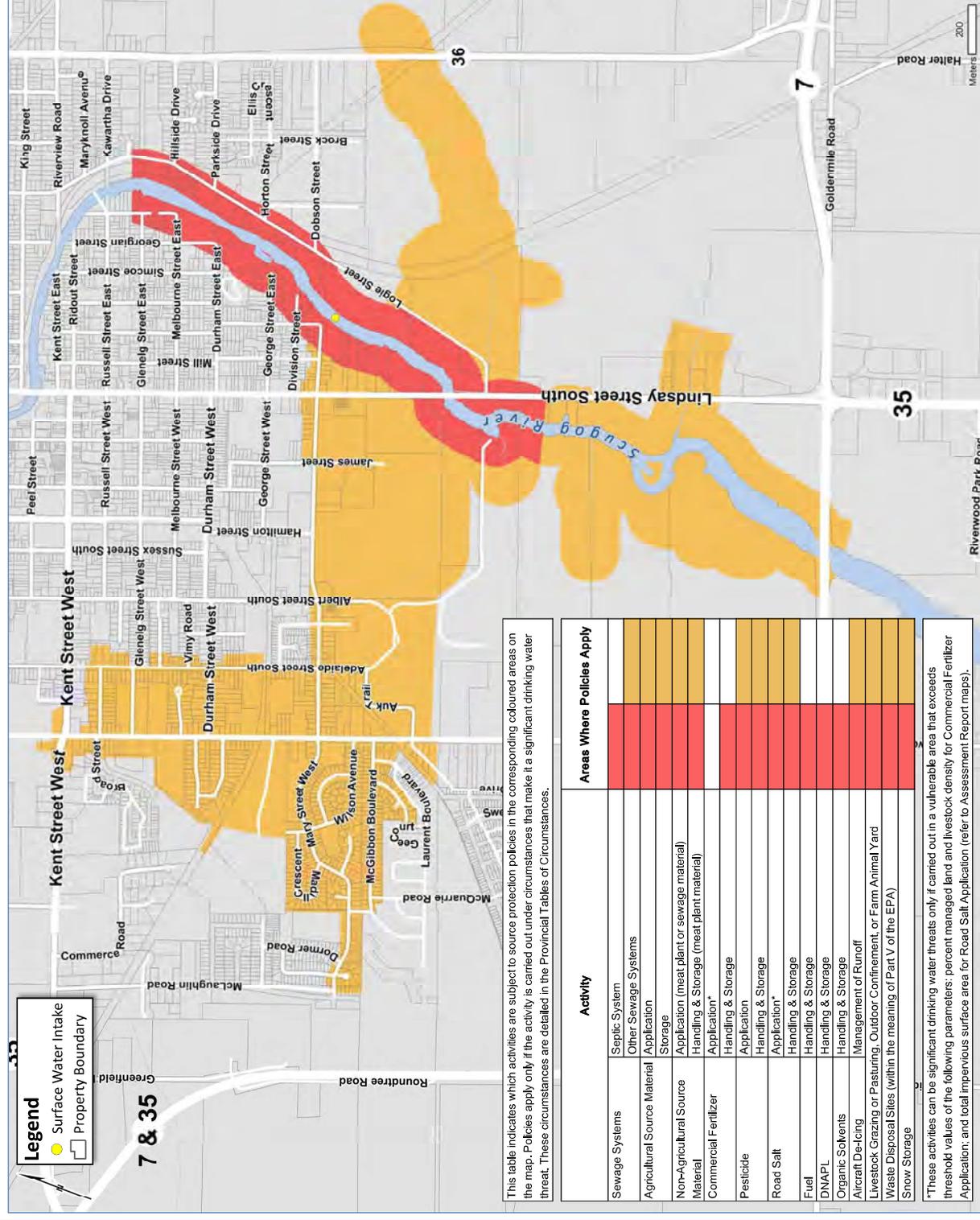


PRODUCED BY Lower Trent Conservation on behalf of the Trent Conservation Coalition Source Protection Committee, 2014.

Waterbodies and watercourses located within the extent of an intake protection zone or watershed protection area are included in this zone.



**Trent Conservation Coalition**  
Source Protection Region  
www.trentsourceprotection.on.ca



This table indicates which activities are subject to source protection policies in the corresponding coloured areas on the map. Policies apply only if the activity is carried out under circumstances that make it a significant drinking water threat. These circumstances are detailed in the Provincial Tables of Circumstances.

Activity	Areas Where Policies Apply
Septic System	Yellow, Orange, Red
Other Sewage Systems	Yellow, Orange, Red
Application	Yellow, Orange, Red
Storage	Yellow, Orange, Red
Application (meat plant or sewage material)	Yellow, Orange, Red
Handling & Storage (meat plant material)	Yellow, Orange, Red
Application*	Yellow, Orange, Red
Handling & Storage	Yellow, Orange, Red
Application	Yellow, Orange, Red
Handling & Storage	Yellow, Orange, Red
Application*	Yellow, Orange, Red
Handling & Storage	Yellow, Orange, Red
Fuel	Yellow, Orange, Red
DNAFL	Yellow, Orange, Red
Organic Solvents	Yellow, Orange, Red
Aircraft De-icing	Yellow, Orange, Red
Livestock Grazing or Pasturing, Outdoor Confinement, or Farm Animal Yard	Yellow, Orange, Red
Waste Disposal Sites (within the meaning of Part V of the EPA)	Yellow, Orange, Red
Snow Storage	Yellow, Orange, Red

\*These activities can be significant drinking water threats only if carried out in a vulnerable area that exceeds threshold values of the following parameters: percent managed land and livestock density for Commercial Fertilizer Application; and total impervious surface area for Road Salt Application. (refer to Assessment Report maps).

# **ATTACHMENT B**

## **Prescribed Drinking Water Threats**



## ATTACHMENT B

### Prescribed Drinking Water Threats (Clear Water Act, 2006)

The *Clear Water Act, 2006* enumerate the following 21 activities which could threaten municipal drinking water sources in certain areas and under certain circumstances:

- 1) The establishment, operation or maintenance of a waste disposal site;
- 2) The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage. (This includes septic systems);
- 3) The application of agricultural source material to land;
- 4) The storage of agricultural source material;
- 5) The management of agricultural source material;
- 6) The application of non-agricultural source material to land;
- 7) The handling and storage of non-agricultural source material;
- 8) The application of commercial fertilizer to land;
- 9) The handling and storage of commercial fertilizer;
- 10) The application of pesticide to land;
- 11) The handling and storage of pesticide;
- 12) The application of road salt;
- 13) The handling and storage of road salt;
- 14) The storage of snow;
- 15) The handling and storage of fuel;
- 16) The handling and storage of a dense non-aqueous phase liquid (DNAPL);
- 17) The handling and storage of an organic solvent;
- 18) The management of runoff that contains chemical used in the de-icing of aircraft;
- 19) An activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body;
- 20) An activity that reduces the recharge of an aquifer; and
- 21) The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.

# **ATTACHMENT C**

## **Applicable Policies and Circumstances Threats Tables**



## ATTACHMENT C

### Applicable Policies (Trent Source Protection Plan, 2014)

**Table 1: List of Abbreviations**

<b>Code</b>	<b>Meaning of Code</b>	<b>Notes</b>
MC	Must Comply	Indicated the legal effect of the policy
S	Strategic	
E/F	Existing/Future	Indicate of the policy applies to existing or future activities, or both.
OMAFRA	Ontario Ministry of Agriculture, Food and Rural Affairs	Implementer
MOE	Ministry of Environment	
RMO	Risk Management Official	
MTO	Ministry of Transportation	



## ATTACHMENT C

### Applicable Policies (Trent Source Protection Plan, 2014)

**Table 2: General Policies**

Policy No.	Tool	Legal Effect	Implementer	E/F	Policy Text	Monitoring Policy
G-2(2)	Monitoring	MC	OMAFRA MOE	E/F	<p>The ministry shall prepare, by February 1 each year, an annual summary of the actions it has taken to achieve the outcomes of the source protection plan policies for the preceding calendar year and make that report available to the applicable Source Protection Authority.</p> <p>Recommended contents of the report include, but are not limited to:</p> <ul style="list-style-type: none"> <li>a) A summary of the reviews completed during the calendar year on the Prescribes Instruments for existing significant drinking water threats, including a summary of the provisions included to ensure that the activity(ies) cease to be significant drinking water threats;</li> <li>b) A summary of the reviews completed during the calendar year on the Prescribed instruments for future activities, including a summary of the provisions included to ensure that the activity(ies) will not be significant drinking water threats;</li> <li>c) A summary of inspections carried out and any orders issued as a result of an inspection during the preceding calendar year; and</li> <li>d) Other content as specified in clauses S-3(3), a-2(2), AND ot-1(7)</li> </ul>	N/A
G-7(1)	Monitoring	MC	RMO	E/F	<p>The Risk Management Official will undertake the reporting requirement specified in section 65 of the General Regulation made under the <i>Clean Water Act, 2006</i> by February 1 each year for the preceding calendar year.</p>	N/A
G-8(4)	Monitoring	MC	RMO	E/F	<p>Monitoring of Risk Management Plans</p> <p>The Risk Management Official will undertake the reporting requirements specified in section 65 of the General Regulation under the <i>Clean Water Act, 2006</i> by February 1 each year for the preceding calendar year.</p>	N/A
G-10(2)	Monitoring	MC	Approval authority under the Planning Act	E/F	<p>Report by February each year to the applicable source protection authority on how the requirement of the policy were achieved for the preceding calendar year. Where the approval authority is not the lower or single tier municipalities, the report will be copied to all applicable municipalities.</p>	N/A



**ATTACHMENT C**  
**Applicable Policies (Trent Source Protection Plan, 2014)**

**Table 3: Policies for Sewage System**

Policy No.	Tool	Legal Effect	Implementer	E/F	Policy Text	Monitoring Policy
S-3(1)	Prescribed Instrument	MC	MOE	F	<p>Future occurrences of the activity shall only be permitted when:</p> <ul style="list-style-type: none"> <li>a) The proposed activity is intended to replace an existing activity or activities;</li> <li>b) The proposed activity would be more protective of drinking water; and</li> <li>c) The instrument for the proposed activity contains conditions that ensure that it does not become a significant drinking water threat.</li> </ul>	G-2(2) S-3(3)
S-3(2)	Land Use Planning	MC	Approval Authority under the <i>Planning Act</i>	F	<p>Future occurrences of the activity are prohibited. This does not apply for an activity that meets the conditions of Policy S-3(1).</p>	G-10(2)
S-3(3)	Monitoring	MC	MOE	F	<p>Where a proposed future activity meets the conditions of Policy S-3(1) the following content is recommended to be included in the report required by Policy G-2(2):</p> <ul style="list-style-type: none"> <li>a) A description of how the replacement activity will be more protective of drinking water than the existing activity or activities;</li> <li>b) A description of the conditions of the Prescribed Instrument that will ensure that the activity does not become a significant drinking water threat; and</li> <li>c) A description of any orders issued as a result of an inspection.</li> </ul>	N/A



**ATTACHMENT C**  
**Applicable Policies (Trent Source Protection Plan, 2014)**

**Table 4: Policies for Road Salt Application and Storage**

Policy No.	Tool	Legal Effect	Implementer	E/F	Policy Text	Monitoring Policy
R-1(1)	Risk Management Plan	MC	RMO	E/F	The activity is designated for the purpose of section 58 of the <i>Clean Water Act, 2006</i> . The risk management plan will be prepared in accordance with the general provisions given in policy G-8.	G-8(4)
R-1(2)	Risk Management Plan	MC	RMO	E/F	<p>Ensure that the risk management plan required by (1) includes provisions for the following:</p> <ul style="list-style-type: none"> <li>a) Ensure that a salt management plan is in place that contains provisions to ensure that the activity is not a significant drinking water threat;</li> <li>b) Where multiple road authorities operate within a vulnerable area, cross-boundary considerations will be addressed on an ongoing basis by all road authorities responsible for the application of road salt;</li> <li>c) Where salt is applied by a contractor:               <ul style="list-style-type: none"> <li>i) Ensure that contractors are made aware of the requirements of the Salt Management Plan; and</li> <li>ii) Require the contractor to advise the municipality with responsibility for the drinking water system promptly if an alternate road salt product is used for road maintenance.</li> </ul> </li> <li>d) Updating of the salt management plan within one year of the approval of an updated assessment report; and</li> <li>e) Annual reporting on activities undertaken as part of the salt management plan to the Risk Management Official.</li> </ul>	G-8(4)
R-3(1)	Research	S	MTO	E/F	Continue ongoing investigation and implementation of innovative practices and mitigative technologies regarding road salt application and the management of infiltration and runoff.	R-3(3)



**ATTACHMENT C**  
**Applicable Policies (Trent Source Protection Plan, 2014)**

Policy No.	Tool	Legal Effect	Implementer	E/F	Policy Text	Monitoring Policy
R-3(2)	Research	S	MTO	E/F	Actively consider the creation of a pilot project utilizing new practices and mitigative technologies for road salt application or the management of runoff that could benefit drinking water sources within the Trent source protection areas.	R-3(3)
R-3(3)	Monitoring	MC	MTO	E/F	<p>The ministry shall prepare, by February 1 each year, an annual summary of the actions it has taken to achieve the outcomes of the source protection plan policies for the preceding calendar year and make that report available to the applicable Source Protection Authority.</p> <p>Recommended contents of the report include, but are not limited to:</p> <ul style="list-style-type: none"> <li>a) The nature of relevant research initiatives as they arise; and</li> <li>b) A summary of relevant research activities every five years.</li> </ul>	N/A
R-4(1)	Specify Action	S	MTO	F	Consider the location of vulnerable areas during the planning and Environmental Assessment processes for the construction of roads, other impervious land surfaces used for vehicular traffic and parking, and all impervious pedestrian paths.	R-4(2)
R-4(2)	Monitoring	MC	MTO	F	<p>The ministry shall prepare, by February 1 each year, an annual summary of the actions it has taken to achieve the outcomes of the source protection plan policies for the preceding calendar year and make that report available to the applicable Source Protection Authority and the municipality.</p> <p>Recommended contents of the report include, but are not limited to:</p> <ul style="list-style-type: none"> <li>a) With respect to policy R-4(2), every five years the annual report should include a summary of how (1) was achieved for any roads within their jurisdiction.</li> </ul>	N/A



**ATTACHMENT C**  
**Applicable Policies (Trent Source Protection Plan, 2014)**

Policy No.	Tool	Legal Effect	Implementer	E/F	Policy Text	Monitoring Policy
R-4(3)	Land Use Planning	MC	Approval Authority under the <i>Planning Act</i>	F	Consider areas where the activity is a significant drinking water threat as set out in impervious surface area mapping in the Trent Assessment Report during the planning processes for the construction of roads, other impervious land surfaces used for vehicular traffic and parking, and all impervious pedestrian paths.	G-10(2)
R-6	Prohibition	MC	RMO	F	The activity is prohibited and designated for the purpose of section 57 of the <i>Clean Water Act, 2006</i> .	G-7(1)

**Table 5: Policies for Snow Storage**

Policy No.	Tool	Legal Effect	Implementer	E/F	Policy Text	Monitoring Policy
O-2	Prohibition	MC	RMO	F	The activity is prohibited and designated for the purpose of section 57 of the <i>Clean Water Act, 2006</i> .	G-7(1)

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# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The application of road salt.</b>	88	<ol style="list-style-type: none"> <li>The road salt is applied in an area where the percentage of total impervious surface area, as set out on a total impervious surface area map, is not more than 1 percent.</li> <li>The application may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1  8 - 10
	89	<ol style="list-style-type: none"> <li>The road salt is applied in an area where the percentage of total impervious surface area, as set out on a total impervious surface area map, is not more than 1 percent.</li> <li>The application may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1  8 - 10
	90	<ol style="list-style-type: none"> <li>The road salt is applied in an area where the percentage of total impervious surface area, as set out on a total impervious surface area map, is more than 1, but not more than 8 percent.</li> <li>The application may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  6 - 8
	91	<ol style="list-style-type: none"> <li>The road salt is applied in an area where the percentage of total impervious surface area, as set out on a total impervious surface area map, is more than 1, but not more than 8 percent.</li> <li>The application may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  6 - 8

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:	
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6	
<b>The application of road salt.</b>	92	<ol style="list-style-type: none"> <li>The road salt is applied in an area where the percentage of total impervious surface area, as set out on a total impervious surface area map, is more than 8, but less than 80 percent.</li> <li>The application may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D HVA SGRA	10	8 - 9	4.9 - 7.2	
	93	<ol style="list-style-type: none"> <li>The road salt is applied in an area where the percentage of total impervious surface area, as set out on a total impervious surface area map, is more than 8, but less than 80 percent.</li> <li>The application may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D HVA SGRA	10	8 - 9	4.9 - 7.2	
	94	<ol style="list-style-type: none"> <li>The road salt is applied in an area where the percentage of total impervious surface area, as set out on a total impervious surface area map, is 80 percent or more.</li> <li>The application may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4	
	95	<ol style="list-style-type: none"> <li>The road salt is applied in an area where the percentage of total impervious surface area, as set out on a total impervious surface area map, is 80 percent or more.</li> <li>The application may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4	
					10	8	6
							6
							6
							6
							6
							6
							6

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<p>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</p>	277	<p>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</p> <p>2. The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</p> <p>3. The discharge may result in the presence of Aluminum or one or more of its compounds containing Aluminum in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA</p>			<p>7 - 10 8 - 10</p>
	278	<p>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</p> <p>2. The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</p> <p>3. The discharge may result in the presence of Arsenic or one or more of its compounds containing Arsenic in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA</p>		<p>9 - 10</p>	<p>6 - 8.1 8 - 10</p>

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	279	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Cadmium or one or more of its compounds containing Cadmium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E  WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D  HVA SGRA		10	6.3 - 9
	280	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E  WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D  HVA SGRA			7 - 10  8 - 10
	281	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Chromium VI in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E  WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D  HVA SGRA		10	6.3 - 9  8 - 10

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	282	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA			7 - 10  10
	283	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Glyphosate in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA			7.2 - 10  10
	284	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9  8 - 10
	285	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Mecoprop in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9  8 - 10
	286	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Mercury or one or more of its compounds containing Mercury in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1  8 - 10

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	287	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Nickel or one or more of its compounds containing Nickel in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	7 - 9  10
	288	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	7 - 9  8 - 10
	289	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of one or more Polycyclic Aromatic Hydrocarbons (PAHs) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9  8 - 10
	290	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA			7.2 - 10  10
	291	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA			7 - 10  10

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	292	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA			7 - 10  10
	293	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10		7 - 9  10
	294	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA			7 - 10
	295	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Phosphorus (total) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA			7 - 10  10
	296	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Aluminum or one or more of its compounds containing Aluminum in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1  8 - 10

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.	297	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Arsenic or one or more of its compounds containing Arsenic in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	5.4 - 7.2
	298	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Cadmium or one or more of its compounds containing Cadmium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1
	299	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1
	300	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Chromium VI in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1
	301	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	302	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Glyphosate in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9 8 - 10
	303	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10 10	5.6 - 8.1 8
	304	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Mecoprop in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10 10	5.6 - 8.1 8
	305	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Mercury or one or more of its compounds containing Mercury in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10 10	5.4 - 7.2 8
	306	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Nickel or one or more of its compounds containing Nickel in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1 8 - 10

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	307	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1
	308	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of one or more Polycyclic Aromatic Hydrocarbons (PAHs) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1
	309	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9
	310	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9
	311	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	312	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1  8 - 10
	313	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Phosphorus (total) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1
	314	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1  8 - 10
	315	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Aluminum or one or more of its compounds containing Aluminum in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 10	5.4 - 7.2  6 - 8
	316	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Arsenic or one or more of its compounds containing Arsenic in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		7.2 - 9	4.8 - 7  6 - 8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	317	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Cadmium or one or more of its compounds containing Cadmium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	318	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  6 - 8
	319	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Chromium VI in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	320	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  8
	321	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Glyphosate in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1  8 - 10

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	322	<ol style="list-style-type: none"> <li>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>3. The discharge may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	323	<ol style="list-style-type: none"> <li>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>3. The discharge may result in the presence of Mecoprop in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	324	<ol style="list-style-type: none"> <li>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>3. The discharge may result in the presence of Mercury or one or more of its compounds containing Mercury in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	7.2 - 9  10	4.8 - 7  6 - 8
	325	<ol style="list-style-type: none"> <li>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>3. The discharge may result in the presence of Nickel or one or more of its compounds containing Nickel in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  8
	326	<ol style="list-style-type: none"> <li>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>3. The discharge may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  6 - 8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	327	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of one or more Polycyclic Aromatic Hydrocarbons (PAHs) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	328	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10  10	5.6 - 8.1  8
	329	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1  8
	330	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1  8
	331	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	332	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Phosphorus (total) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	5.4 - 7.2
	333	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 10	5.4 - 7.2
	334	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Aluminum or one or more of its compounds containing Aluminum in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9	4.9 - 7.2
	335	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Arsenic or one or more of its compounds containing Arsenic in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4
	336	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Cadmium or one or more of its compounds containing Cadmium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	337	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  8 - 10	4.9 - 7.2  6  6 6
	338	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Chromium VI in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10  10	7 - 8.1  8	4.5 - 6.4  6 6
	339	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	340	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Glyphosate in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	5.4 - 7.2  6 - 8
	341	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1  8 - 10	4.5 - 6.4  6 6

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	342	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Mecoprop in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10 10	7 - 8.1 8	4.5 - 6.4 6
	343	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Mercury or one or more of its compounds containing Mercury in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4
	344	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Nickel or one or more of its compounds containing Nickel in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4
	345	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7.2 - 9	4.8 - 7
	346	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of one or more Polycyclic Aromatic Hydrocarbons (PAHs) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	347	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	5.4 - 7.2  6 - 8
	348	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9	4.9 - 7.2  6 - 8
	349	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9	4.9 - 7.2  6 - 8
	350	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4  6 - 8
	351	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Phosphorus (total) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9	4.9 - 7.2

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	352	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are rural, agricultural, or low density residential.</li> <li>The discharge may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	353	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Aluminum or one or more of its compounds containing Aluminum in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.4 - 9  8 - 10
	354	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Arsenic or one or more of its compounds containing Arsenic in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1  8
	355	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Cadmium or one or more of its compounds containing Cadmium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1  8 - 10
	356	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.4 - 9  8 - 10

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	357	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Chromium VI in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1
	358	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.4 - 9
	359	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Glyphosate in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	7 - 9
	360	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1
	361	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Mecoprop in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	362	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Mercury or one or more of its compounds containing Mercury in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1 8 - 10
	363	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Nickel or one or more of its compounds containing Nickel in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9 8 - 10
	364	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9 8 - 10
	365	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of one or more Polycyclic Aromatic Hydrocarbons (PAHs) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1 8 - 10
	366	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	7 - 9 8 - 10

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.	367	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	7 - 9  10
	368	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	7 - 9  10
	369	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9  10
	370	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Phosphorus (total) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.4 - 9
	371	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.4 - 9  8 - 10

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	372	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Aluminum or one or more of its compounds containing Aluminum in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	9 - 10  10	6 - 8.1  8
	373	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Arsenic or one or more of its compounds containing Arsenic in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	5.4 - 7.2  6 - 8
	374	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Cadmium or one or more of its compounds containing Cadmium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  8
	375	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10  10	6 - 8.1  8
	376	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Chromium VI in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  6 - 8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:				
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6				
The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.	377	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1 8 - 10				
	378	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Glyphosate in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1 8 - 10				
	379	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	5.4 - 7.2 8				
	380	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Mecoprop in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	5.4 - 7.2 6 - 8				
							<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	6
	381	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Mercury or one or more of its compounds containing Mercury in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	10	8				
							<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	8 - 9	5.4 - 7.2

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.	382	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Nickel or one or more of its compounds containing Nickel in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1
	383	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1
	384	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of one or more Polycyclic Aromatic Hydrocarbons (PAHs) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	5.4 - 7.2
	385	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1
	386	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	387	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1  8 - 10
	388	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1  8 - 10
	389	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Phosphorus (total) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1
	390	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1  8 - 10
	391	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Aluminum or one or more of its compounds containing Aluminum in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  6 - 8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	392	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Arsenic or one or more of its compounds containing Arsenic in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4
	393	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Cadmium or one or more of its compounds containing Cadmium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4
	394	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Chromium or one or more of its compounds containing Chromium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA		8 - 10	5.4 - 7.2
	395	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4
	396	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA		8 - 10	5.4 - 7.2

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	397	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Glyphosate in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 10  10	5.4 - 7.2  8
	398	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9  10	4.8 - 6.4  6 - 8
	399	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Mecoprop in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9  8 - 10	4.8 - 6.4  6
	400	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Mercury or one or more of its compounds containing Mercury in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9  10	4.8 - 6.4  6 - 8
	401	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Nickel or one or more of its compounds containing Nickel in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	402	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	5.4 - 7.2  6 - 8
	403	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of one or more Polycyclic Aromatic Hydrocarbons (PAHs) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9  10	4.8 - 6.4  6 - 8
	404	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  6 - 8
	405	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  8
	406	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<p><b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b></p>	407	<p>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</p> <p>2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</p> <p>3. The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E</p> <p>WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D</p> <p>HVA</p> <p>SGRA</p>	10	8 - 9	4.9 - 7.2
	408	<p>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</p> <p>2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</p> <p>3. The discharge may result in the presence of Phosphorus (total) in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E</p> <p>WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D</p> <p>HVA</p> <p>SGRA</p>		8 - 10	5.4 - 7.2
	409	<p>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</p> <p>2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land use in the area is high density residential land use.</p> <p>3. The discharge may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E</p> <p>WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D</p> <p>HVA</p> <p>SGRA</p>		8 - 10	5.4 - 7.2
	410	<p>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</p> <p>2. The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</p> <p>3. The discharge may result in the presence of Aluminum or one or more of its compounds containing Aluminum in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E</p> <p>WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D</p> <p>HVA</p> <p>SGRA</p>	10	7 - 9	4.8 - 6.4
	411	<p>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</p> <p>2. The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</p> <p>3. The discharge may result in the presence of Arsenic or one or more of its compounds containing Arsenic in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E</p> <p>WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D</p> <p>HVA</p> <p>SGRA</p>	9 - 10	6.3 - 8.1	4.2 - 6

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	412	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Cadmium or one or more of its compounds containing Cadmium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10 10	6.4 - 8.1 8	4.5 - 6.3 6
	413	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9 8 - 10	4.8 - 6.4 6
	414	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Chromium VI in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10 10	6.4 - 8.1 8	4.5 - 6.3 6
	415	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9 8 - 10	4.8 - 6.4 6
	416	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Glyphosate in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7.2 - 9 10	4.8 - 7 6 - 8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	417	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	9 - 10 10	6.4 - 8.1 8	4.5 - 6.3 6
	418	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Mecoprop in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	9 - 10 10	6.4 - 8.1 8	4.5 - 6.3 6
	419	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Mercury or one or more of its compounds containing Mercury in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	9 - 10 10	6.3 - 8.1 8	4.2 - 6 6
	420	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Nickel or one or more of its compounds containing Nickel in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	9 - 10 10	7 - 8.1 8 - 10	4.5 - 6.4 6
	421	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10 10	7 - 9 8	4.8 - 6.4 6

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	422	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of one or more Polycyclic Aromatic Hydrocarbons (PAHs) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	6.4 - 8.1	4.5 - 6.3
	423	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7.2 - 9	4.8 - 7
	424	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4
	425	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4
	426	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	427	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Phosphorus (total) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4
	428	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.</li> <li>The discharge may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4
	429	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Aluminum or one or more of its compounds containing Aluminum in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1
	430	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Arsenic or one or more of its compounds containing Arsenic in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	5.4 - 7.2
	431	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Cadmium or one or more of its compounds containing Cadmium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	432	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1 8 - 10
	433	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Chromium VI in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10 10	5.6 - 8.1 8
	434	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1 8 - 10
	435	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Glyphosate in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9 8 - 10
	436	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10 10	5.6 - 8.1 8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	437	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Mecoprop in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1
	438	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Mercury or one or more of its compounds containing Mercury in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	5.4 - 7.2
	439	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Nickel or one or more of its compounds containing Nickel in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1
	440	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1
	441	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of one or more Polycyclic Aromatic Hydrocarbons (PAHs) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	442	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9  8 - 10
	443	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9  8 - 10
	444	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	6.3 - 9  8 - 10
	445	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1  8 - 10
	446	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Phosphorus (total) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	447	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is not more than 1 hectare and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1 8 - 10
	448	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Aluminum or one or more of its compounds containing Aluminum in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10 10	5.4 - 7.2 6 - 8
	449	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Arsenic or one or more of its compounds containing Arsenic in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7.2 - 9	4.8 - 7 6 - 8
	450	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Cadmium or one or more of its compounds containing Cadmium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9	4.9 - 7.2 6 - 8
	451	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10 10	5.4 - 7.2 6 - 8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	452	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Chromium VI in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	453	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  8
	454	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Glyphosate in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1  8 - 10
	455	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9	4.9 - 7.2  6 - 8
	456	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Mecoprop in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9	4.9 - 7.2  6 - 8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	457	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Mercury or one or more of its compounds containing Mercury in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7.2 - 9  10	4.8 - 7  6 - 8
	458	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Nickel or one or more of its compounds containing Nickel in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  8
	459	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  6 - 8
	460	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of one or more Polycyclic Aromatic Hydrocarbons (PAHs) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	461	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10  10	5.6 - 8.1  8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	462	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1
	463	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	5.6 - 8.1
	464	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	5.4 - 7.2
	465	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	5.4 - 7.2
	466	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Phosphorus (total) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	5.4 - 7.2
	466	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 1 but not more than 10 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	5.4 - 7.2

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<p><b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b></p>	467	<p>1. The system is a storm water management facility designed to discharge storm water to land or surface water.                      2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.                      3. The discharge may result in the presence of Aluminum or one or more of its compounds containing Aluminum in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E                      WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D                      HVA                      SGRA</p>	<p>10</p>	<p>8 - 9                      8 - 10</p>	<p>4.9 - 7.2                      6                      6                      6</p>
	468	<p>1. The system is a storm water management facility designed to discharge storm water to land or surface water.                      2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.                      3. The discharge may result in the presence of Arsenic or one or more of its compounds containing Arsenic in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E                      WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D                      HVA                      SGRA</p>	<p>9 - 10                      10</p>	<p>7 - 8.1                      8</p>	<p>4.5 - 6.4                      6                      6</p>
	469	<p>1. The system is a storm water management facility designed to discharge storm water to land or surface water.                      2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.                      3. The discharge may result in the presence of Cadmium or one or more of its compounds containing Cadmium in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E                      WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D                      HVA                      SGRA</p>	<p>9 - 10</p>	<p>7 - 8.1                      8 - 10</p>	<p>4.5 - 6.4                      6                      6</p>
	470	<p>1. The system is a storm water management facility designed to discharge storm water to land or surface water.                      2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.                      3. The discharge may result in the presence of Chloride in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E                      WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D                      HVA                      SGRA</p>	<p>10</p>	<p>8 - 9                      8 - 10</p>	<p>4.9 - 7.2                      6                      6</p>
	471	<p>1. The system is a storm water management facility designed to discharge storm water to land or surface water.                      2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.                      3. The discharge may result in the presence of Chromium VI in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E                      WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D                      HVA                      SGRA</p>	<p>9 - 10                      10</p>	<p>7 - 8.1                      8</p>	<p>4.5 - 6.4                      6                      6</p>

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	472	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	473	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Glyphosate in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	5.4 - 7.2  6 - 8
	474	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1  8 - 10	4.5 - 6.4  6
	475	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Mecoprop in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10  10	7 - 8.1  8	4.5 - 6.4  6
	476	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Mercury or one or more of its compounds containing Mercury in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1  8 - 10	4.5 - 6.4  6
				HVA SGRA		

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	477	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Nickel or one or more of its compounds containing Nickel in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9  10	4.8 - 6.4  6 - 8
	478	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7.2 - 9  8 - 10	4.8 - 7  6
	479	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of one or more Polycyclic Aromatic Hydrocarbons (PAHs) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1  8 - 10	4.5 - 6.4  6
	480	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	5.4 - 7.2  6 - 8
	481	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	482	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	483	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9  10	4.8 - 6.4  6 - 8
	484	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9	4.9 - 7.2
	485	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	486	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Aluminum or one or more of its compounds containing Aluminum in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10  10	7 - 8.1  8	4.5 - 6.4  6

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	487	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Arsenic or one or more of its compounds containing Arsenic in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	8 - 10 10	6 - 7.2 8	4.2 - 5.6 6
	488	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Cadmium or one or more of its compounds containing Cadmium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10 10	6.3 - 8.1 8	4.2 - 6 6
	489	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10 10	7 - 8.1 8	4.5 - 6.4 6
	490	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Chromium VI in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10 10	6.3 - 8.1 8	4.2 - 6 6
	491	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10 10	7 - 8.1 8 - 10	4.5 - 6.4 6

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	492	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Glyphosate in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4
	493	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	6.3 - 8.1	4.2 - 6
	494	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Mecoprop in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	6.3 - 8.1	4.2 - 6
	495	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Mercury or one or more of its compounds containing Mercury in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	8 - 10	6 - 7.2	4.2 - 5.6
	496	<ol style="list-style-type: none"> <li>The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>The discharge may result in the presence of Nickel or one or more of its compounds containing Nickel in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	6.4 - 8.1	4.5 - 6.3

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<p><b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b></p>	497	<ol style="list-style-type: none"> <li>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>2. The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>3. The discharge may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10 10	7 - 8.1 8	4.5 - 6.4 6
	498	<ol style="list-style-type: none"> <li>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>2. The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>3. The discharge may result in the presence of one or more Polycyclic Aromatic Hydrocarbons (PAHs) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10 10	6.3 - 8.1 8	4.2 - 6 6
	499	<ol style="list-style-type: none"> <li>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>2. The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>3. The discharge may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10 10	7 - 9 8	4.8 - 6.4 6
	500	<ol style="list-style-type: none"> <li>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>2. The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>3. The discharge may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4
	501	<ol style="list-style-type: none"> <li>1. The system is a storm water management facility designed to discharge storm water to land or surface water.</li> <li>2. The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.</li> <li>3. The discharge may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.</b>	502	1. The system is a storm water management facility designed to discharge storm water to land or surface water. 2. The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial. 3. The discharge may result in the presence of Petroleum Hydrocarbons F3 (>nC16-nC34) in groundwater or surface water.	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	6.4 - 8.1	4.5 - 6.3
	503	1. The system is a storm water management facility designed to discharge storm water to land or surface water. 2. The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial. 3. The discharge may result in the presence of Phosphorus (total) in groundwater or surface water.	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4
	504	1. The system is a storm water management facility designed to discharge storm water to land or surface water. 2. The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial. 3. The discharge may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The handling and storage of road salt.</b>	1433	<p>1. The storage of road salt in a manner that may result in its exposure to precipitation or runoff from precipitation or snow melt.</p> <p>2. The quantity stored is less than 500 tonnes.</p> <p>3. Runoff from the area in which the salt is stored may result in the presence of Chloride in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E</p> <p>WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D</p> <p>HVA</p> <p>SGRA</p>		<p>8 - 10</p> <p>10</p>	<p>5.4 - 7.2</p> <p>6 - 8</p> <p>6</p> <p>6</p>
	1434	<p>1. The storage of road salt in a manner that may result in its exposure to precipitation or runoff from precipitation or snow melt.</p> <p>2. The quantity stored is less than 500 tonnes.</p> <p>3. Runoff from the area in which the salt is stored may result in the presence of Sodium in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E</p> <p>WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D</p> <p>HVA</p> <p>SGRA</p>		<p>8 - 10</p> <p>10</p>	<p>5.4 - 7.2</p> <p>6 - 8</p> <p>6</p> <p>6</p>
	1435	<p>1. The storage of road salt in a salt dome or similar facility designed to protect the road salt from exposure to precipitation or runoff from precipitation or snow melt.</p> <p>2. The quantity stored is less than 500 tonnes.</p> <p>3. Runoff from the area in which the salt is stored may result in the presence of Chloride in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E</p> <p>WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D</p> <p>HVA</p> <p>SGRA</p>			<p>7 - 10</p> <p>8 - 10</p>
	1436	<p>1. The storage of road salt in a salt dome or similar facility designed to protect the road salt from exposure to precipitation or runoff from precipitation or snow melt.</p> <p>2. The quantity stored is less than 500 tonnes.</p> <p>3. Runoff from the area in which the salt is stored may result in the presence of Sodium in groundwater or surface water.</p>	<p>IPZ-1, IPZ-2, IPZ-3, WHPA-E</p> <p>WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D</p> <p>HVA</p> <p>SGRA</p>			<p>7 - 10</p> <p>8 - 10</p>

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:	
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6	
<b>The handling and storage of road salt.</b>	1437	<ol style="list-style-type: none"> <li>The storage of road salt in a manner that may result in its exposure to precipitation or runoff from precipitation or snow melt.</li> <li>The quantity stored is at least 500, but not more than 5,000 tonnes.</li> <li>Runoff from the area in which the salt is stored may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9	4.9 - 7.2	
	1438	<ol style="list-style-type: none"> <li>The storage of road salt in a manner that may result in its exposure to precipitation or runoff from precipitation or snow melt.</li> <li>The quantity stored is at least 500, but not more than 5,000 tonnes.</li> <li>Runoff from the area in which the salt is stored may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9	4.9 - 7.2	
	1439	<ol style="list-style-type: none"> <li>The storage of road salt in a salt dome or similar facility designed to protect the road salt from exposure to precipitation or runoff from precipitation or snow melt.</li> <li>The quantity stored is at least 500, but not more than 5,000 tonnes.</li> <li>Runoff from the area in which the salt is stored may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1	
	1440	<ol style="list-style-type: none"> <li>The storage of road salt in a salt dome or similar facility designed to protect the road salt from exposure to precipitation or runoff from precipitation or snow melt.</li> <li>The quantity stored is at least 500, but not more than 5,000 tonnes.</li> <li>Runoff from the area in which the salt is stored may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		9 - 10	6 - 8.1	
	1441	<ol style="list-style-type: none"> <li>The storage of road salt in a manner that may result in its exposure to precipitation or runoff from precipitation or snow melt.</li> <li>The quantity stored is more than 5,000 tonnes.</li> <li>Runoff from the area in which the salt is stored may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4	
					10	8	6
							6
							6
							6
							6
							6

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The handling and storage of road salt.</b>	1442	<ol style="list-style-type: none"> <li>The storage of road salt in a manner that may result in its exposure to precipitation or runoff from precipitation or snow melt.</li> <li>The quantity stored is more than 5,000 tonnes.</li> <li>Runoff from the area in which the salt is stored may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10 10	7 - 8.1 8	4.5 - 6.4 6
	1443	<ol style="list-style-type: none"> <li>The storage of road salt in a salt dome or similar facility designed to protect the road salt from exposure to precipitation or runoff from precipitation or snow melt.</li> <li>The quantity stored is more than 5,000 tonnes.</li> <li>Runoff from the area in which the salt is stored may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10 8 - 10	5.4 - 7.2 6
	1444	<ol style="list-style-type: none"> <li>The storage of road salt in a salt dome or similar facility designed to protect the road salt from exposure to precipitation or runoff from precipitation or snow melt.</li> <li>The quantity stored is more than 5,000 tonnes.</li> <li>Runoff from the area in which the salt is stored may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10 8 - 10	5.4 - 7.2 6
<b>The storage of snow.</b>	1445	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10 10	5.4 - 7.2 6 - 8
	1446	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10 10	5.4 - 7.2 6 - 8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The storage of snow.</b>	1447	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Cyanide (CN-) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	5.4 - 7.2  6 - 8
	1448	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	1449	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	5.4 - 7.2  6 - 8
	1450	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	8 - 10	8 - 10  10	5.4 - 7.2  6 - 8
	1451	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	8 - 10	8 - 10  10	5.4 - 7.2  8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The storage of snow.</b>	1452	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA		9 - 10  10	5.6 - 8.1  8
	1453	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  8
	1454	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  6 - 8
	1455	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  6 - 8
	1456	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA		8 - 10  8 - 10	8 - 10  6  6  6

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The storage of snow.</b>	1457	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	8 - 10
	1458	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Cyanide (CN-) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	7.2 - 10
	1459	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8	7 - 10
	1460	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA			7.2 - 10
	1461	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	8 - 10

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The storage of snow.</b>	1462	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	8 - 10 6 - 8
	1463	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	8.1 - 10 6 - 8
	1464	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		10	8 - 10 6 - 8
	1465	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	8 - 10 6
	1466	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	8 - 10 6

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The storage of snow.</b>	1467	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  8 - 10	4.9 - 7.2  6
	1468	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	5 - 7.2  6 - 8
	1469	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Cyanide (CN-) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7.2 - 9	4.8 - 7  6 - 8
	1470	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9  8 - 10	4.8 - 6.4  6
	1471	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7.2 - 9  8 - 10	4.8 - 7  6

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:	
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6	
<b>The storage of snow.</b>	1472	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  10	5.4 - 7.2  6 - 8	
	1473	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  6 - 8	
	1474	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  6 - 8	
	1475	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10  10	5.4 - 7.2  6 - 8	
	1476	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9  8 - 10	4.9 - 7.2  6	

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The storage of snow.</b>	1477	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	8 - 9  10	5 - 7.2  6 - 8
	1478	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	8	7 - 10  6
	1479	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA		8 - 10	7.2 - 10  6
	1480	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Cyanide (CN-) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	10  8	7 - 9  6
	1481	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	10  8	7 - 9  6

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The storage of snow.</b>	1482	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8	7 - 9 6
	1483	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8	7.2 - 10 6
	1484	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	8 - 10 6
	1485	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	8 - 10 6
	1486	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	8 - 10 6

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The storage of snow.</b>	1487	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8	7 - 10  6
	1488	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 0.5, but not more than 1 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA		8 - 10	7.2 - 10  6
	1489	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4  6
	1490	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7.2 - 9	4.8 - 7  6
	1491	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Cyanide (CN-) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4  6

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The storage of snow.</b>	1492	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10 10	7 - 8.1 8	4.5 - 6.4 6
	1493	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10 10	7 - 9 8	4.8 - 6.4 6
	1494	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7.2 - 9 8 - 10	4.8 - 7 6
	1495	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9 10	4.9 - 7.2 6 - 8
	1496	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8 - 9 10	4.9 - 7.2 6 - 8

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The storage of snow.</b>	1497	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	8 - 9  10	4.9 - 7.2  6 - 8
	1498	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	7 - 9  8 - 10	4.8 - 6.4  6
	1499	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	7.2 - 9  8 - 10	4.8 - 7  6
	1500	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	10  8	6.4 - 9  6
	1501	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	10  8	7 - 9  6

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The storage of snow.</b>	1502	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Cyanide (CN-) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	10	6.3 - 9
	1503	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	10	6.3 - 9
	1504	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	10	6.3 - 9
	1505	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	10	7 - 9
	1506	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8	7 - 10

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The storage of snow.</b>	1507	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8	7 - 10  6
	1508	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8	7 - 10  6
	1509	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	10	6.4 - 9  6
	1510	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 1, but not more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8	7 - 9  6
	1511	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10  10	7 - 8.1  8	4.5 - 6.4  6
			HVA SGRA			6 6
			HVA SGRA			6 6

# TABLE 1 – DRINKING WATER THREATS – CHEMICALS

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The storage of snow.</b>	1512	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4
	1513	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Cyanide (CN-) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4
	1514	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	6.4 - 8.1	4.5 - 6.3
	1515	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4
	1516	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The storage of snow.</b>	1517	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4
	1518	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4
	1519	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	7 - 9	4.8 - 6.4
	1520	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4
	1521	<ol style="list-style-type: none"> <li>The snow is stored at or above grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	9 - 10	7 - 8.1	4.5 - 6.4

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6
<b>The storage of snow.</b>	1522	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Chloride in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	8	6
	1523	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Copper or one or more of its compounds containing Copper in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	8	6
	1524	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Cyanide (CN-) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	8	6
	1525	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Lead or one or more of its compounds containing Lead in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	8	6
	1526	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Nitrogen in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	8	6

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:	
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 6	
<b>The storage of snow.</b>	1527	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F1 (nC6-nC10) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	10	6.3 - 9	
	1528	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F4 (&gt;nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	8	6.4 - 9	
	1529	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F2 (&gt;nC10-nC16) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	8	7 - 9	
	1530	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Petroleum Hydrocarbons F3 (&gt;nC16-nC34) in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	8	6.4 - 9	
	1531	<ol style="list-style-type: none"> <li>The snow is stored below grade.</li> <li>The area upon which snow is stored is more than 5 hectares.</li> <li>Runoff from the area in which the snow is stored may result in the presence of Sodium in groundwater or surface water.</li> </ol>	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/IC1, WHPA-D HVA SGRA	10	9 - 10	6 - 8.1	

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DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
<b>The storage of snow.</b>	1532	1. The snow is stored below grade. 2. The area upon which snow is stored is more than 5 hectares. 3. Runoff from the area in which the snow is stored may result in the presence of Zinc or one or more of its compounds containing Zinc in groundwater or surface water.	IPZ-1, IPZ-2, IPZ-3, WHPA-E WHPA-A, WHPA-B, WHPA-C/C1, WHPA-D HVA SGRA	10	8	6.3 - 9  6  6 6

**TABLE 2 – DRINKING WATER THREATS – PATHOGENS**

DRINKING WATER THREATS:	Reference Number	Under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.	1949	1. The system is a storm water management facility designed to discharge storm water to land or surface water. 2. The discharge may result in the presence of one or more pathogens in groundwater or surface water.	IPZ-1, IPZ-2, IPZ-3 & WHPA-E WHPA-A & WHPA-B		9 - 10  10.0	6 - 8.1  8.0

## **APPENDIX C: Tree Impact Assessment**

Our ref: 11229186

09 December 2022

**Bromont Homes**  
c/o Michael Bisset | Partner, MCIP, RPP  
Bousfields Inc  
3 Church Street, Suite 200,  
Toronto ON, M5E 1M2

**RE: TREES IMPACTED BY GATEWAY DEVELOPMENT  
HIGHWAY 7 AND LINDSAY STREET SOUTH.  
CITY OF KAWARTHA LAKES**

This letter is in response to Kawartha Region Conservation Authority and their request for information about vegetation to be removed to facilitate the proposed development at Highway 7 and Lindsay Street South. Specifically, tree age class and tree species composition in vegetation communities identified as tree rows in the central portion of the property. GHD has provided this information below as well as the inclusion of several shrub species.

From Left to Right (West to East) Community 1 Tree Rows (See attached figure with labelled Tree Rows).

- Tree row 1: Dominated by European Buckthorn (*Rhamnus cathartica*) (DBH 2-10cm). Also included scot's pine (*Pinus sylvestrus*), Manitoba maple (*Acer negundo*), Norway maple (*Acer platanoides*). All mature trees had DBH ranges between 20-30cm).
- Tree row 2: A young community dominated by European buckthorn, dead white ash (*Fraxinus americana*), apple (*Malus sp*) and hawthorn (*Crataegus sp*). Apple trees were in greater abundance than hawthorn. Some scattered white elm and Norway maple. Entire tree row averaged DBH's between less than 1 up to 30cm.
- Tree row 3: No one tree species dominant. Species included apple, hawthorn, American elm (*Ulmus americana*), Norway maple, Manitoba maple, red oak (*Quercus rubra*), dead white ash and Norway spruce. Dense understory of European buckthorn. All trees had DBH's of between >1 to 30cm. Larger specimens included red oak, which was a scarce species in this tree row and had a DBH of around 50cm.
- Tree row 4: As with Tree row 3, no one tree species dominant. Species included apple, hawthorn, American elm, Norway maple, Manitoba maple, red oak, dead white ash and Norway spruce. Dense understory of European buckthorn. All trees had DBH's of between >1 to 30cm.

Located directly south of Tree row 2 (Community 2- CUW1) was a cultural woodland with an attached tree row. Its characteristics are as follows:

White poplar (*Populus alba*) with avg DBH of 20-30cm dominated. Manitoba maple and one black walnut (*Juglans nigra*) also identified both with DBHs of 20-30cm. Shrub species included Tartarian honeysuckle (*Lonicera tartarica*) and wayfaring tree (*Viburnum lantana*). Several dead white ash were also observed. The attached south tree row contained white poplar, dead white ash, Manitoba maple, as well as the same shrub species identified in the cultural woodland.

Community 4 – largely dominated by 10-25cm DBH green ash (*Fraxinum pensylvanica*) and basswood (*Tilia americana*). Many dead white ash also permeated the canopy. Other species included American elm, eastern white cedar (*Thuja occidentalis*), bur oak (*Quercus macrocarpa*). All individuals were within the 10-25 DBH range indicating a young to mid-aged community.

Community 6 and 7 which are impacted by Street A contained few trees, but of the trees observed, crack willow was dominant. DBH was variable, from 5-50 DBH. Larger trees were confined to Community 7 and the immediate stream banks.

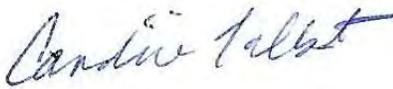
**Table 1. Impacts on tree cover from proposed development**

Treed area location	Impact on trees	mitigation
Tree Row #1	Development up to property line but fenceline trees to be retained	Identify trees to be removed. Install hoarding fencing around dripline of retained trees along property line and tree stand prior to grading. Remove trees outside of peak breeding bird season
Tree Row #2	Both tree stands to be removed due to grading and development envelope	Remove trees outside of peak breeding bird season
Tree Row #3	Removed due to grading and development envelope	Remove trees outside of peak breeding bird season
Tree Row #4	Removed due to grading and development envelope	Remove trees outside of peak breeding bird season
Community 2	Removed due to grading and development envelope	Remove trees outside of peak breeding bird season
Community 4	Small sections in the road right of way to be removed due to grading and development envelope Remainder to be retained within open space block	Identify trees to be removed. Install hoarding fencing around dripline and tree stands being retained prior to grading. Remove trees in development envelope outside of peak breeding bird season

<p>Community 6/7</p>	<p>Small sections in the road right of way to be removed due to grading and development envelope</p> <p>Remainder to be retained within open space block</p>	<p>Identify trees to be removed. Install hoarding fencing around dripline and tree stands being retained prior to grading.</p> <p>Remove trees in development envelope outside of peak breeding bird season</p>
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If there are any questions, please contact us.

Regards



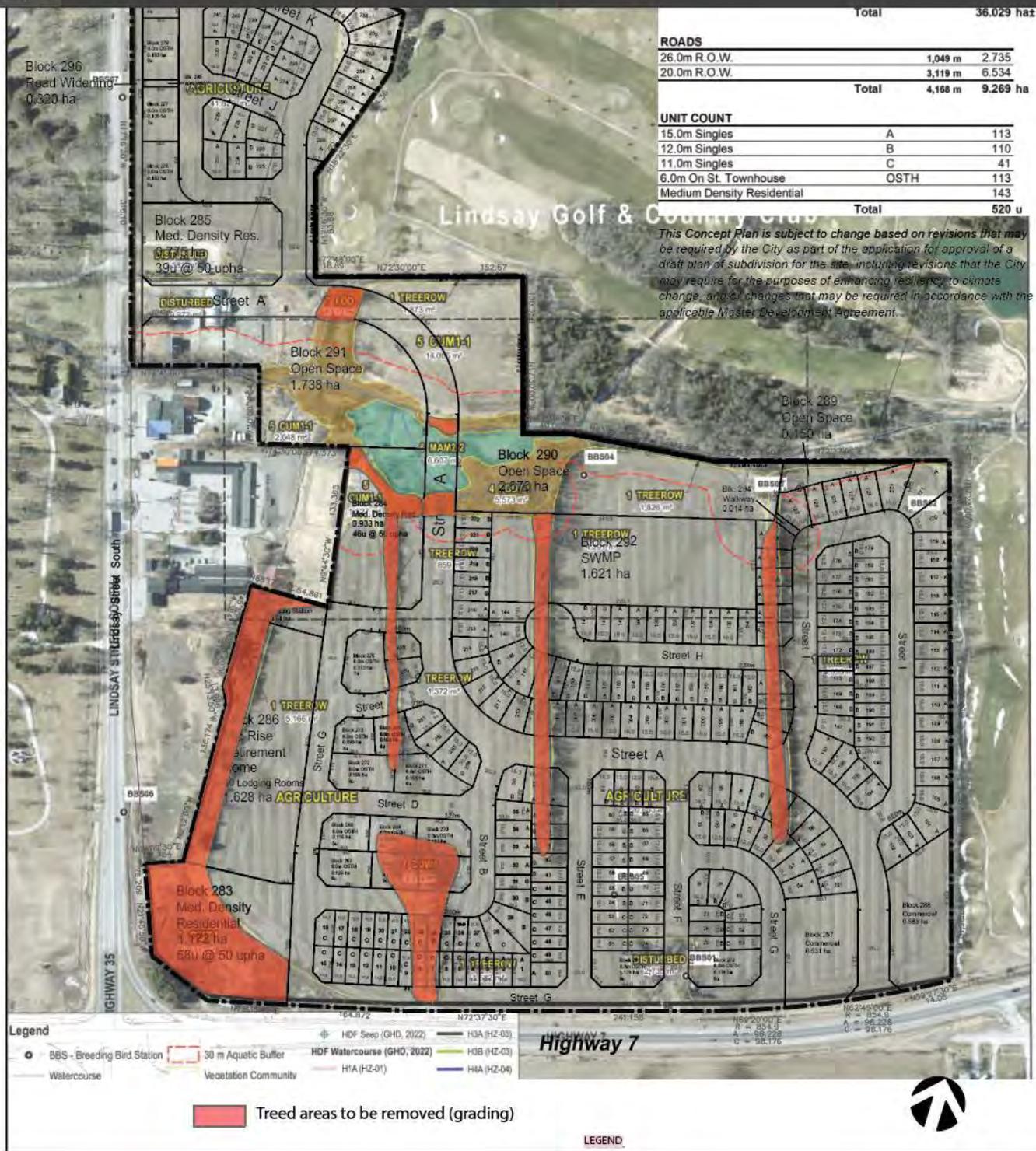
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Figure 1 from EIS report with labelling of treed areas.



ROADS		Total	36.029 ha
26.0m R.O.W.	1,049 m	2,735	
20.0m R.O.W.	3,119 m	6,534	
<b>Total</b>	<b>4,168 m</b>	<b>9,269 ha</b>	

UNIT COUNT		Total	520 u
15.0m Singles	A	113	
12.0m Singles	B	110	
11.0m Singles	C	41	
6.0m On St. Townhouse	OSTH	113	
Medium Density Residential		143	
<b>Total</b>		<b>520 u</b>	

*This Concept Plan is subject to change based on revisions that may be required by the City as part of the application for approval of a draft plan of subdivision for the site, including revisions that the City may require for the purposes of enhancing resiliency to climate change, and/or changes that may be required in accordance with the applicable Master Development Agreement.*

**Legend**

- BBS - Breeding Bird Station
- ◻ 30 m Aquatic Buffer
- ⊕ HDF Deep (GHD, 2022)
- H3A (HZ-03)
- Watercourse
- ◻ Vegetation Community
- HDF Watercourse (GHD, 2022)
- H3B (HZ-03)
- H1A (HZ-01)
- H1A (HZ-04)

**Treed areas to be removed (grading)**

**Highway 7**

**LEGEND**

## **APPENDIX D: Geotechnical Investigation**



November 30, 2016

PRELIMINARY GEOTECHNICAL INVESTIGATION

**Proposed Prestige Employment  
and Commercial Development,  
Bromont Property Parcels 5, 6  
and 7  
Kawartha Lakes, Ontario**

**Submitted to:**  
Mr. Saverio Montemarano  
Bromont Group of Companies  
457 Jevlan Drive, Suite 8  
Woodbridge, Ontario  
L4L 7Z9

REPORT

A world of  
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- Terms Used on Records of Boreholes and Test Pits
- Record of Boreholes (16-1 to 16-21)
- Figure 1 – Key Plan
- Figure 2 – Borehole Location Plan
- Figure 3 – Plasticity Chart (CI) SILTY CLAY
- Figure 4 – Grain Size Distribution (CI) SILTY CLAY
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- Figure 6 – Grain Size Distribution (SM) SILTY SAND (TILL)

**APPENDICES**

**APPENDIX A**

Important Information and Limitations of This Report



## **1.0 INTRODUCTION**

This report presents the results of a preliminary geotechnical and hydrogeological investigation carried out for the proposed prestige employment and commercial development at the Bromont Property Parcels 5, 6, and 7 in the City of Kawartha Lakes, Ontario, as shown on the Key Plan, Figure 1. The purpose of the investigation was to investigate the general subsurface soil and groundwater conditions at the site by means of a limited number of boreholes and laboratory testing. Based on our interpretation of the borehole data, this report provides preliminary geotechnical and hydrogeological information in support of the proposed prestige employment and commercial development.

The factual data, interpretations and preliminary recommendations contained in this report pertain to a specific project as described in the report and are not applicable to any other project or site location. If the project is modified in concept, location or elevation, or if the project is not initiated within eighteen months of the date of the report, Golder should be given an opportunity to confirm that the preliminary recommendations are still valid. In addition, this report should be read in conjunction with the attached "Important Information and Limitations of This Report", included in Appendix A. The reader's attention is specifically drawn to this information, as it is essential for the proper use and interpretation of this report.

## **2.0 SITE DESCRIPTION**

The site is located at the north east corner of the intersection of Lindsay Street North and Highway 7 in the City of Kawartha Lakes, Ontario as shown on the Key Plan, Figure 1. The site consists of an irregularly shaped parcel of land which is comprised of farm lands to the south, vacant lands to the north, and four residential and warehouse buildings to the central west. A creek crosses the site from east to west near the centre of the property. The terrain of the site is rolling hills generally sloping towards the central creek.

## **3.0 INVESTIGATION PROCEDURE**

The field work for this preliminary investigation was carried out between June 15 and June 17, 2016, during which time 21 boreholes (No's. 16-1 to 16-21) were advanced at the locations shown on the Borehole Location Plan, Figure 2. Boreholes 16-1 to 16-18 were advanced within the proposed development. Boreholes 16-19 to 16-21 were advanced along the shoulder of Lindsay Street north of the property boundaries. The boreholes were drilled using a track-mounted drill rig supplied and operated by a specialist drilling contractor, subcontracted to Golder. Standard Penetration Testing (SPT) and sampling were carried out at regular intervals of depth in the boreholes using conventional 35 mm internal diameter split spoon sampling equipment advanced using an automatic hammer in accordance with ASTM D1586. Field vane shear tests were conducted in cohesive soils for determination of undrained shear strengths (ASTM D2573) using Standard 'N' size vanes. The results of the in-situ field tests (i.e., SPT 'N'-values and undrained shear strengths from the field vanes) as presented on the Record of Borehole sheets and in Section 4.0 are uncorrected. The groundwater conditions were noted in the open boreholes during drilling and ten 50 mm diameter monitoring wells were installed in selected boreholes to allow for further monitoring of groundwater levels and groundwater sampling. The remaining boreholes were backfilled in accordance with the current environmental regulations upon completion of drilling. All of the soil samples obtained during this investigation were brought to our Whitby laboratory for further examination, natural water content testing and selective soil classification testing.

The field work for this investigation was monitored by a member of our engineering staff who also determined the approximate borehole locations in the field, cleared the borehole locations of underground services, logged the



boreholes and cared for the recovered samples. The borehole locations were located in the field relative to existing site features and as such, the locations shown on Figure 2 should be considered approximate. At the time of this report, surveyed ground surface elevations at the borehole locations were not provided to Golder. Approximate ground surface elevations at the borehole locations for Boreholes 16-1 to 16-18 were inferred from the topographic data on Project No. 15144 Figure 6 entitled "SWM Pond Plan" dated October 2016 produced by Valdor Engineering Inc.

## **4.0 SUBSURFACE CONDITIONS**

The following provides discussion of the soil and groundwater conditions encountered in the boreholes, as well as the results of the field and laboratory testing, the details of which are shown on the Record of Borehole sheets and on figures following the text of this report. Method of Soil Classification and Abbreviations and Terms Used on Records of Boreholes and Test Pits sheets are provided to assist in the interpretation of the borehole sheets. It should be noted that the boundaries between the strata on the borehole logs have been inferred from drilling observations and non-continuous samples. They generally represent a transition from one soil type to another and should not be inferred to represent an exact plane of geological change. Further, conditions will vary between and beyond the boreholes.

The following is a summarized account of the subsurface conditions encountered in the boreholes, followed by more detailed descriptions of the major soil strata and groundwater conditions encountered at the site.

Underlying surficial topsoil, pavement structure and silty clay fill, the subsurface conditions encountered in the boreholes generally consisted of stiff to very stiff silty clay underlain by compact to very dense sand, silt and gravel or compact to very dense silty sand glacial till. The boreholes were typically terminated due to auger refusal on inferred bedrock. The groundwater level ranges from approximately 0.9 m to 3.5 m below ground surface.

### **4.1 Pavement Structure**

Non-cohesive sand and gravel granular base materials were encountered at the ground surface of Boreholes 16-19 to 16-21. Granular base thickness ranged from 150 mm to 760 mm. Two SPT 'N'-values measured with the granular base were 30 blows and 42 blows per 0.3 m penetration, indicating a dense state of compactness. The in-situ water contents of the granular base samples ranged from about 2 percent to 13 percent.

### **4.2 Topsoil Fill**

Topsoil fill was encountered at the surface of Boreholes 16-1 to 16-18. The topsoil fill thickness ranged from 300 mm to 460 mm.

### **4.3 Fill Materials**

Fill materials were encountered underlying the pavement structure or topsoil in all boreholes except Borehole 16-21 and extended to depths ranging from about 0.5 m to 1.4 m below existing ground surface. The fill materials generally consist of brown cohesive silty clay with trace sand. Organic inclusions and organic staining were encountered with the fills. The SPT 'N'-values measured with the fill materials range from 4 blows to 14 blows per 0.3 m penetration, suggest a firm to stiff consistency. The in-situ water contents of the fill samples range from about 9 percent to 32 percent.



## **4.4 Silty Clay**

A deposit of brown to grey, cohesive silty clay with trace to some sand, was encountered typically beneath the fill in all boreholes except Borehole 16-3. The silty clay deposit was encountered at depths ranging from 0.5 m to 2.1 m below ground surface and extended to depths ranging from 1.4 m to 5.9 m below ground surface. In Borehole 16-4, this deposit is classified as clayey silt.

The SPT 'N'-values measured within the silty clay deposit typically range from 3 blows to 22 blows per 0.3 m of penetration. One SPT 'N' values of 32 blows per 0.3 m of penetration was measured in Borehole 16-14, likely due to resistance from the underlying layer which the spoon tip encountered. In-situ field vane testing within the silty clay deposit measured undrained shear strengths that range from about 91kPa to greater than 100 kPa with a calculated sensitivity of approximately 2.0. The overall results suggest the deposit typically has a stiff to very stiff consistency.

A plasticity chart showing the results of Atterberg limits testing performed on five selected samples of the silty clay deposit is shown on Figure 3. The results indicated a plastic limits ranging from about 17 percent to 20 percent, liquid limits ranging from about 32 percent to 45 percent and plasticity indices ranging from about 15 percent to 26 percent, resulting in classification as a clay of intermediate plasticity. The in-situ water content of the silty clay samples ranges from approximately 8 percent to 34 percent. The results of a grain size distribution test performed on one sample of the silty clay are shown in Figure 4.

The lower portion of the silty clay deposit in Borehole 16-12 below 3.8 m depth had split spoons that did not penetrate the full sample length resulting in 'N' values greater than 100 blows per 0.3 m of penetration, potentially due to the presence of cobbles and boulders within the deposit and indicates that this portion of the deposit may be glacial till. Further, Borehole 16-12 was terminated within this deposit. Borehole 16-10 encountered auger grinding within the silty clay deposit, which may be due to the presence of cobbles and boulders.

## **4.5 Silt, Sand and Gravel**

A deposit of non-cohesive silt, sand and gravel was encountered typically beneath the silty clay deposit in Boreholes 16-1, 16-2, 16-7 to 16-11, 16-14, 16-15, 16-18 and 16-20. The deposits are comprised of grey, wet, silt, silty sand, gravelly sand and silty gravel. The silt, sand and gravel deposit was encountered at depths ranging from 1.4 m to 5.9 m, and extended to depths ranging from 2.3 m to 7.6 m below ground surface. Boreholes 16-1, 16-2, 16-7 to 16-11, 16-14, 16-15 and 16-20 were terminated within the sand, silt, and gravel. The SPT 'N'-values measured within the silt, sand and gravel range from 7 blows to 43 blows per 0.3 m of penetration to greater than 100 blows where the split spoon did not penetrate the full sample length, indicating a loose to dense, typically compact to very dense, state of compactness.

The in-situ water contents of the silt, sand and gravel samples range from about 3 percent to 14 percent. The results of three grain size distribution test performed on samples of silty gravel are shown in Figure 5.

## **4.6 Silty Sand Till to Sandy Silt Till**

A deposit of moist, grey silty sand to sandy silt, trace to some gravel till was encountered typically below the silty clay deposit in Boreholes 16-3 to 16-6, 16-13, 16-16 to 16-19 and 16-21. The silty sand to sandy silt till was encountered at depths ranging from 0.7 m to 4.3 m below ground surface and extended to depths ranging from 4.3 m to 6.6 m below ground surface. Boreholes 16-3 to 16-6, 16-13, 16-16, 16-17, 16-18, 16-19 and 16-21 were



terminated within the silty sand to sandy silt till deposit. Evidence of cobbles and boulders from auger grinding and split spoons not penetrating the full sample length was observed in some boreholes. Cobbles and boulders are considered to be inherent in glacially derived material and should be expected. The SPT 'N'-values measured within the silty sand to sandy silt till range from 11 blows to 85 blows per 0.3 m of penetration to greater than 100 blows where the split spoon did not penetrate the full sample length, indicating a compact to very dense state of compactness.

The in-situ water contents of the silty sand to sandy silt till samples ranged from about 4 percent to 13 percent, with one measured at 19 percent. The results of two grain size distribution test performed on samples of the silty sand till are shown in Figure 6.

#### 4.7 Refusal

The presence of bedrock may be inferred from auger refusal or split spoon refusal (i.e. spoon bouncing) at the termination of all boreholes except Boreholes 16-2, 16-3, 16-6, 16-7 and 16-18. Refusal was encountered at depths ranging from 4.3 m to 7.6 m below ground surface.

#### 4.8 Groundwater

Groundwater observations and measurements are shown in detail on the Record of Borehole sheets following the text of this report. Groundwater was measured in boreholes at the conclusion of drilling at depths of ranging from about 1.5 m to 6.7 m below ground surface on June 15 to 17, 2016. Groundwater level measurements in the ten monitoring wells were obtained on July 4, 2016 and August 4, 2016. Hydraulic conductivity testing was carried out in selected monitoring wells on August 4, 2016. A summary of the groundwater levels is provided in the table below:

Borehole	Geologic Unit	Date of Measurement	Groundwater Depth <sup>(1)</sup> (m)	Groundwater Elevation (m)	Hydraulic Conductivity (m/s)
16-1	gravelly sandy SILT/ gravelly SAND	Jul. 4, 2016	2.33	251.97	NM
16-4	gravelly sandy SILT (TILL)	Jul. 4, 2016 Aug. 4, 2016	2.26 2.69	254.84 254.41	NM 4x10 <sup>-6</sup>
16-6	gravelly sandy SILT (TILL)	Jul. 4, 2016	2.40	253.5	NM
16-8	SILTY CLAY/ SILTY GRAVEL and SAND	Jul. 4, 2016 Aug. 4, 2016	1.88 2.33	251.62 251.70	NM 2x10 <sup>-6</sup>
16-9	gravelly sandy SILT	Jul. 4, 2016 Aug. 4, 2016	0.90 1.39	251.40 250.91	NM 1x10 <sup>-5</sup>
16-14	SILTY GRAVEL	Jul. 4, 2016 Aug. 4, 2016	NM 2.59	- 251.41	NM NM <sup>(2)</sup>
16-15	SILTY GRAVEL and SAND	Jul. 4, 2016	1.64	250.96	NM
16-16	gravelly sandy SILT (TILL)	Jul. 4, 2016	1.16	252.04	NM



## PRELIMINARY GEOTECHNICAL INVESTIGATION PRESTIGE EMPLOYMENT AND COMMERCIAL DEVELOPMENT

Borehole	Geologic Unit	Date of Measurement	Groundwater Depth <sup>(1)</sup> (m)	Groundwater Elevation (m)	Hydraulic Conductivity (m/s)
16-19	gravelly SILTY SAND (TILL)	Jul. 4, 2016	3.49	-	NM
16-21	gravelly sandy SILT (TILL) to SILTY SAND (TILL)	Jul. 4, 2016	0.20	-	NM

**Notes:** NM: Not measured

<sup>(1)</sup> below ground surface

<sup>(2)</sup> Hydraulic conductivity could not be tested due to slow recovery of the well

It should be noted that the observations and readings above and shown on the Record of Borehole sheets reflect the groundwater conditions encountered in the boreholes during the time of the field investigation and some seasonal fluctuations should be anticipated.

### 5.0 DISCUSSION AND PRELIMINARY RECOMMENDATIONS

This section of the report provides preliminary geotechnical information based on our interpretation of the limited borehole information and on our understanding of the project requirements. The information in this portion of the report is provided for preliminary purposes and is not sufficient for final design or construction purposes. Once the actual development plans and pertinent design details are available, the results of this preliminary investigation should be reviewed by the geotechnical engineer and an additional site specific investigation carried out, compatible with the final development plans for the site.

Where comments are made on construction, they are provided only in order to highlight aspects of construction which could affect the design of the project. Contractors bidding on or undertaking any work at the site should examine the factual results of the investigation, satisfy themselves as to the adequacy of the information for construction and make their own interpretation of the factual data as it affects their proposed construction techniques, schedule, equipment capabilities, costs, sequencing and the like.

Our professional services for this assignment address only the geotechnical (physical) aspects of the subsurface conditions at this site. The geo-environmental (chemical) aspects, including the consequences of possible surface and/or subsurface contamination resulting from previous activities or uses of the site and/or resulting from the introduction onto the site of materials from off-site sources, are outside of the terms of reference for this report.

It is understood that consideration is being given to developing the site as a prestige employment and commercial development with associated roadways and parking areas. We also understand that buried services on Lindsay Street will be upgraded to provide servicing to the proposed development. Based on the results of this preliminary investigation, the subsurface native soils encountered at the site are generally considered to be suitable for supporting the proposed development. The following preliminary geotechnical recommendations are provided for the planning and preliminary design of the excavations, building foundations, and floor slab at the site.



## **5.1 Topsoil Stripping and Reuse**

The following geotechnical comments are provided regarding topsoil stripping and reuse at the site:

- Topsoil and soil containing rootlets or organics should be stripped from the site prior to placement of engineered fill.
- Outside of road allowances and building envelopes, the topsoil may be reused as general lot fill to raise grades above the engineered fill. The primary factor controlling methane generation is the organic carbon content of the topsoil. The loss on ignition (LOI) test provides an indication of the organic carbon content of the sample. If topsoil is to be reused as general lot fill to raise grades, then LOI testing should be carried out and further recommendations provided by the Golder in regard to the reuse of topsoil.
- Stripping of the underlying sandy silt to silty sand organic stained layer would not be required from a geotechnical perspective. However, from a construction viewpoint, it may not be practical (or possible) for the contractor to distinguish between this zone and the overlying topsoil.
- Where the topsoil is used as general lot fill, its thickness should be limited to about 1.5 m. The topsoil fill should be placed in maximum 300 mm loose lifts and uniformly compacted to 95 percent of standard Proctor maximum dry density. To have any success in placing topsoil as lot grading fill, it must be placed at or very close to its optimum water content to achieve workability and adequate compaction, in order to minimize post-construction settlements and/or lateral movements.

## **5.2 Site Preparation and Grading**

Topsoil and fill layers with variable depths were encountered at ground surface throughout the site. The topsoil and existing fill materials are not considered suitable to provide subgrade support for the proposed building foundations, floor slabs, or other settlement-sensitive structures, or engineered fill materials that may be subsequently used to support these structures. In order to minimize the potential for differential settlements, all existing topsoil layers existing fill materials and any existing structures/foundations within the proposed building footprints and paved areas, should be completely sub-excavated and replaced with engineered fill materials, as required (subject to inspection in the field during construction by Golder, as discussed below). Fill materials which are at or near their optimum moisture contents and do not contain topsoil or organics or any other deleterious materials may potentially be reused, on site as engineered fill, subject to approval by Golder.

## **5.3 Engineered Fill**

As noted above, prior to placing engineered fill at the site, the topsoil must first be stripped and the existing fills removed. The area(s) should then be proof-rolled in conjunction with an inspection by Golder, to confirm that the exposed soils are native, undisturbed and competent, and have been adequately cleaned of ponded water and all fills, disturbed, loosened, softened, organic and other deleterious material. Remedial work (i.e. further sub-excavation and replacement) should be carried out as directed by Golder.

Although no significant cuts are anticipated to accommodate the final grades at the site, reuse of the in-situ materials as engineered fill may be considered. Materials for reuse as engineered fill must be approved by Golder prior to placement. In this regard, fill materials which are at or near their optimum water contents and do not contain topsoil or organics or any other deleterious materials can be reused on site as engineered fill. Excavated native soils from the site, if any, free of significant amounts of organics and other deleterious materials, may be



reused as engineered fill. Based on the measured natural water contents, the majority of the native silty/clayey soils are generally above their estimated laboratory optimum water contents for compaction. It should also be noted that due to the fine-grained nature of the predominant silty/clayey subsoils, their workability is sensitive to moisture conditions and some difficulty would be expected in achieving adequate compaction during wet weather.

Imported materials to be used for engineered fill must be approved by Golder at the source(s), prior to hauling to the site. In this regard, imported granular materials which meet the requirements for OPSS.PROV 1010 (Aggregates) Select Subgrade Material (SSM) would be suitable for use as engineered fill. In any event, the approved materials for engineered fill should be placed in maximum 300 mm loose lifts and uniformly compacted to at least 98 percent of standard Proctor maximum dry density (SPMDD) throughout. The placement of engineered fill should be monitored by Golder on a full-time basis.

The final surface of the engineered fill should be protected as necessary from construction traffic and should be sloped to provide positive drainage for surface water during and following the construction period. During periods of freezing weather, additional soil cover should be placed above final subgrade to provide for frost protection. Placement operations during cold weather should avoid inclusions of frozen lumps of material, snow and ice.

## **5.4 Soil Bulking**

Soil bulking is the increase in total volume of soil over the volume of the same material in the undisturbed state. Bulking of native soils occurs when they are excavated from undisturbed ground. It should be noted that due to the variability of the subsoils on the site, the actual soil bulking factor can only be best determined when the final site grading plan is available and a series of additional laboratory and in-situ field tests are completed on the proposed "cut" soils, if any. However, for initial design purposes and considering the predominant native soils at this site, bulking of about 15 percent to 20 percent (increase in total volume) would be expected after excavation and prior to re-compaction. After re-compaction, bulking of about 5 percent to 10 percent would be expected.

## **5.5 Site Servicing**

### **5.5.1 Excavations**

It is understood that underground service pipes will be installed both within the site boundary, as well as beneath the existing Lindsay Street South to the north west of the site. The following recommendations for site servicing apply to both within the site boundary and on Lindsay Street South. It is anticipated that the underground service pipe installations may require excavations up to 4 m below the existing ground surface. Based on the results of this investigation, the founding soils for the services will generally consist of stiff to very stiff silty clay with silty sand till to sandy silt till in the vicinity of Boreholes 16-3 to 16-5 and 16-16. The native subsoils are considered to be suitable for supporting the pipes, provided the integrity of the base can be maintained during construction.

If services trenches are proposed to be excavated into the bedrock, as inferred from auger refusal in some boreholes, a further investigation should be conducted to confirm the presence and type of bedrock as well as the permeability and difficulty of excavation.

It is anticipated that the trench excavations will consist of conventional temporary open cuts with side slopes not steeper than 1 horizontal to 1 vertical (1H:1V). However, depending upon the construction procedures adopted by the contractor, groundwater seepage conditions and weather conditions at the time of construction, some local flattening of the slopes may be required, especially in any looser/softer zones (i.e. in the native silty clay to clayey silt deposits) or where localized seepage is encountered. Care should be taken to direct surface runoff away from



the open excavations and all excavations should be carried out in accordance with the Occupational Health and Safety Act and Regulations for Construction Projects. According to the Act, the shallow sandy/silty deposits and silty/clayey deposits would be Type 3 soils. Care must be taken during excavation to ensure that adequate support is provided for any existing structures and underground services located adjacent to the excavations (i.e. near site boundaries). Golder should confirm these recommendations once final design elevations are available.

In addition, excavated material should be placed well back from the edge of the excavation in these areas and stockpiling of the material prohibited adjacent to the excavation, to minimize surcharge loading near the excavation crest. Trenches should be backfilled as soon as possible. If service trenches are proposed greater than 4 m below existing ground surface, Golder should be contacted prior to excavation of deep trenches in order to provide recommendations to mitigate or minimize basal instability.

Where side slopes of excavations are required to be steepened to limit the extent of the excavation, then some form of trench support system may be required. It must be emphasized that a trench liner box provides protection for construction personnel but does not provide any lateral support for the adjacent excavation walls, underground services or existing structures. It is imperative that any underground services or existing structures adjacent to the excavations be accurately located prior to construction and adequate support provided where required. In addition, steepened excavations should be left open for as short a duration as possible and completely backfilled at the end of each working day.

If required to support adjacent services or structures, shoring could consist of braced soldier pile and lagging, braced sheet piles or potentially a slide rail system designed by a Professional Engineer including assessment of the potential for basal heave if excavations extend into the silty clay deposits. If shoring is implemented at the site, the requirements of OPSS.PROV 539 should be followed. Design of temporary works will be entirely the responsibility of the contractor.

## **5.5.2 Hydrogeological Assessment**

The groundwater levels in the monitoring wells were measured to be about 0.2 m to 3.5 m below the existing ground surface. As such the pipes will generally be below the local groundwater table. It is anticipated that groundwater control will be required during excavation of the service trenches.

The design of the groundwater control system(s) will be entirely the responsibility of the contractor. However, consideration could be given at the time of tender for the excavation work to carrying out a few test excavations across the site in the presence of the bidders so that the actual excavating conditions and rate of groundwater inflow can be assessed.

Groundwater inflow into the site servicing trenches should be expected. However, it should be possible to handle the groundwater inflow by pumping from well filtered sumps established below the base of the excavations, provided suitably sized pumps are used and they are installed in advance of reaching the subgrade level. Positive dewatering (i.e. well points) may be required in some or all locations of the services depending on the final details of the excavations.

The actual rate of groundwater inflow to the trenches will depend on many factors including the contractor's schedule and rate of excavation, the size of the open excavation, and the time of year at which the excavations are made. There also may be instances where significant volumes of precipitation and/or groundwater collects in an open excavation and must be pumped out. For construction dewatering that exceeds a rate of 50 m<sup>3</sup>/day



(50,000 L/day), but less than 400 m<sup>3</sup>/day (400,000 L/day), a Ministry of Environment and Climate Change (MOECC) Environmental Activity and Sector Registration (EASR) is required, and must be supported by a water taking plan and a discharge plan. For pumping that exceeds 400 m<sup>3</sup>/day (400,000 L/day), a MOECC permit-to-take water (PTTW) would be required.

The results of hydrogeological analyses, using an analytical groundwater flow model, indicate that the steady-state rate of groundwater inflow, combined with the volumes of precipitation/snow melt that may collect in one open excavation for the installation of site services (4 m wide by 100 m long by 4 m deep), will be on the order of 110 to 560 m<sup>3</sup>/day, assuming that the initial groundwater level is 0.9 m below the existing ground surface. It should be noted that this estimate is conservative, and depending on the method of construction, groundwater inflows to the excavation could be lower.

Once the final depth and extent of the excavations for the proposed stormwater management pond, pumping station and culverts are known, the estimated groundwater inflows should be reassessed. It is possible that the combined construction dewatering for all sources on the site would exceed 400 m<sup>3</sup>/day (400,000 L/day) under normal operation and a PTTW would be required. Once this information is available, estimated groundwater inflows can be calculated and reported in a separate hydrological report which would form part of a PTTW application to the MOECC.

### **5.5.3 Pipe Bedding and Cover**

The bedding for watermains and sewers should be compatible with the type and class of pipe, the surrounding subsoil and anticipated loading conditions and should be designed in accordance with City of Kawartha Lakes standards. Where granular bedding is deemed to be acceptable, it should consist of at least 150 mm of OPSS.PROV 1010 (Aggregates) Granular 'A' or 19 mm crusher run limestone material. A thicker bedding layer (i.e. 300 to 450 mm in total) will likely be required where the pipes bear in the native silty clay, depending upon the success of the contractor's groundwater control methods, if required. From the springline to 300 mm above the obvert of the pipe, sand cover may be used. All bedding and cover materials should be placed in maximum 150 mm loose lifts and should be uniformly compacted to at least 98 percent of standard Proctor maximum dry density.

Clear stone bedding material should not be used in any case for pipe bedding or to stabilize the base unless specifically directed in the field by the geotechnical engineer from Golder.

To minimize the potential for preferential flow of groundwater through bedding which is generally more permeable than the surrounding soils or bedrock, strategically installed trench pugs could be considered. If installed, the trench plugs should be spaced at an appropriate frequency and the locations should be confirmed in the field during construction by Golder. Clayey materials should be used for the plugs. The onsite silty clay may be a suitable source of borrow material for the plugs. Additional testing including Atterberg Limits and particle size distribution are required to confirm the suitability of the onsite clay. The clayey material should be placed in maximum 200 mm loose lift thickness and compacted to at least 98 percent of the material's SPMDD at about 2% wet of optimum moisture content, under the supervision of Golder.



#### **5.5.4 Trench Backfill**

The excavated materials from the site will generally consist of silty clay (cohesive) soils and sandy silt till to silty sand till (non-cohesive) soils. The majority of the excavated soils are generally at to above their estimated optimum water contents for compaction and will require some drying prior to placement. In this regard, depending upon schedule and weather conditions, it may not be practical to effectively dry the excavated wet, fine grained soils in the field for reuse as trench backfill. The excavated subsoils at suitable water contents may be reused as backfill provided they are free of significant amounts of topsoil, organics or other deleterious material and are placed and compacted as outlined below. All topsoil and organic materials should be wasted or used for landscaping purposes.

Trench backfill, from the top of the cover material to 1 m below subgrade elevation, should be placed in maximum 450 mm loose lifts and uniformly compacted to at least 95 percent of standard Proctor maximum dry density. In no case should materials be placed that cannot support conventional compaction equipment and uniformly achieve at least 95 percent of standard Proctor maximum dry density. From 1 m below subgrade to subgrade elevation, the materials should be placed in maximum 300 mm loose lifts and uniformly compacted to at least 98 percent of standard Proctor maximum dry density.

Alternatively, if placement water contents at the time of construction are too high, or if there is a shortage of suitable in-situ material, then an approved imported sandy material which meets the requirements for OPSS.PROV 1010 (Aggregates) Select Subgrade Material (SSM) could be used. It should be placed in loose lift thicknesses as indicated above and uniformly compacted to at least 95 percent of standard Proctor maximum dry density. Backfilling operations during cold weather should avoid inclusions of frozen lumps of material, snow and ice.

Normal post-construction settlement of the compacted trench backfill should be anticipated, with the majority of such settlement taking place within about 6 months following the completion of trench backfilling operations. This settlement will be reflected at the ground surface and may be compensated for, where necessary, by placing additional granular material prior to asphalt paving. Alternatively, if the asphalt binder course is placed shortly following the completion of trench backfilling operations in these areas, any settlement that may be reflected by subsidence of the surface of the binder asphalt should be compensated for by placing an additional thickness of binder asphalt or by padding. If scheduling permits, the surface course asphalt should not be placed over the binder course asphalt for at least 12 months.

It should be noted that in some cases, even though the compaction requirements have been met, the subgrade strength in the trench backfill areas may not be adequate to support heavy construction loading, especially during wet weather or where backfill materials wet of optimum have been placed. In any event, the subgrade should be proofrolled and inspected by Golder prior to placing the granular subbase and additional subbase material placed, as required and as determined in the field by the Golder, consistent with the prevailing weather conditions and anticipated use by construction traffic.



## 5.6 Pavement Design

### 5.6.1 Lindsay Street

It is our understanding that a portion of the existing Lindsay street will be excavated to allow for the installation of underground services along Lindsay Street. The location and the extent of the excavation is not finalized yet. As such, we have provided generic recommendations for the pavement reinstatement along the service excavation. The following strategy is recommended for the pavement restoration over the proposed underground services:

- After installation and backfilling of the watermain, place new Granular B subbase material such that top of the new OPSS.PROV 1010 (Aggregates) Granular B material matches the bottom of the existing OPSS.PROV 1010 (Aggregates) Granular A material at the adjacent locations. Compact the Granular B subbase material to 100 percent of the material's Standard Maximum Dry Density (SPMDD);
- Place new Granular A base material such that top of the new Granular A matches the bottom of the existing hot mix asphalt at the adjacent locations. Compact the Granular A to 100 percent of the material's SPMDD; and
- Mill the top lift of the existing hot mix asphalt (assumed 50 mm) over a width of 300 mm on all sides of the repair area to create a step. Apply tack coat to the exposed pavement surface and pave with new hot mix asphalt in a minimum of two lifts. HL 8 base course asphalt shall be used for all the lower lift asphalt layers. HL 3 surface course asphalt shall be used for the top lift (50 mm in thickness). A minimum compaction of 92% must be achieved for the binder course and surface course lifts.

### 5.6.2 Proposed Road and Cul-de-Sac

The construction of a new public road and cul-de-sac are proposed which will connect the existing Highway 7 to Lindsay Street and will also provide access to the Bromont prestige employment and commercial development. Based on the Traffic Impact Study conducted by Asurza Engineers (Asurza), the following data has been used for the pavement design.

Average Annual Daily Traffic (AADT) <sup>1</sup>	19,800
No. of Lanes in each direction	2
Percentage of Commercial Traffic <sup>2</sup>	5%
Traffic Growth rate	0%
Road Classification	Urban Collector

1. AADT was estimated by using the AM and PM peak hour traffic volumes and multiplying by 10.
2. Information regarding the percentage of commercial truck traffic anticipated was not provided in the Traffic Impact Study. As such, 5% commercial traffic has been assumed, as indicated by Asurza during the preliminary stage.

Based on the above assumptions, the estimated number of Equivalent Single Axle Loads (ESALs) is approximately 2.0 million for the proposed roads over a 15 year design life.

It is our understanding that the vertical alignments of the proposed roads are not finalized at this time. As such, we have assumed that the proposed roads will not have grade changes (i.e. no grade raise or lowering). Based on the information provided the following pavement design is recommended for the construction of the proposed roads:



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MATERIAL		THICKNESS OF PAVEMENT ELEMENTS (mm)
Asphaltic Material (OPSS 1150)	HL-3	50
	HL-8	70
Granular Material (OPSS 1010)	Granular A Base	150
	Granular B, Type I Subbase	500
<b>Total Thickness</b>		770 mm

The following strategy is recommended for the construction of the roadway:

- Excavate the existing subgrade soils to a depth of 770 mm below proposed grade. Organics or poor soils (soft, wet) may require sub-excavation as directed by Golder on-site;
- Grade the silty clay subgrade to the required cross-fall and proof roll the subgrade prior to placing any granular materials;
- Place new Granular B subbase material (in two lifts) and compact to 100 percent of the material's SPMD to a compacted thickness of 400 mm;
- Place new Granular A base material and compact to 100 percent of the material's SPMD, to a compacted thickness of 150 mm;
- Place and compact 70 mm of HL 8 base course asphalt in one lift; and
- Place and compact 50 mm of HL 3 surface course asphalt in one lift.

**5.6.3 General Pavement Construction Recommendations**

In preparation for paved areas, any remaining topsoil and deleterious materials should be stripped to expose the native, undisturbed subgrade soils. Prior to placing any granular material, the exposed soil subgrade, including the surface of controlled fill areas, should be heavily proofrolled in conjunction with an inspection by Golder technical staff. Remedial work (i.e. further sub-excavation and replacement) should be carried out on any disturbed, softened or poorly performing areas, as directed by Golder.

The granular base and subbase materials should be uniformly compacted to 100 percent of their SPMD. Compaction of the granular materials and subgrade soils should be carried out at a moisture content that is within 2 percent of the optimum moisture content.

Ditches should be constructed in accordance with the OPSD 200 series for earth grading. As a minimum, provide the following within earth ditches:

DITCH GRADIENT	RECOMMENDED TREATMENT
<3%	Seed and cover
3 – 5%	Erosion Control Blankets
>5%	Rip Rap



#### **5.6.4 Asphalt and Performance graded Asphalt Cement (PGAC)**

Superpave mixes may be used in place of the Marshall mixes noted above. SP12.5 may be used in place of HL 3 and SP 19 may be used in place of HL 8. It is recommended that PG 58-28 asphalt cement be used for all mixes.

#### **5.6.5 Compaction**

The granular materials should be compacted to 100 percent of the material's SPMDD. The HMA should be compacted to a minimum of 92.0 percent of the material's Maximum Relative Density (MRD) as specified in OPSS 310.

#### **5.6.6 Inspection and Testing**

During construction, in-situ density tests and materials testing should be carried out to monitor conformance to the pertinent project specifications. Construction material testing (asphalt, granular materials, concrete, etc.) should be carried out in a CCIL certified laboratory.

### **5.7 Foundations**

#### **5.7.1 Excavations**

It is anticipated that shallow foundation excavations at the site will consist of temporary open cuts with side slopes not steeper than 1H:1V. However, depending on the construction procedures adopted by the contractor and weather conditions at the time of construction, some local flattening of the slopes may be required, especially within cohesionless fill materials. Based on the groundwater conditions encountered in the boreholes during drilling, groundwater seepage into the shallow foundation excavations is anticipated but may be handled, if required, by pumping from sumps located within the excavations but outside of the footing areas. Positive dewatering (i.e. well points) may be required if excavations extend below the frost depth and should be assessed once more detailed structure information is available.

Care should be taken to direct surface water away from the open excavations and all excavations should be carried out in accordance with the Occupational Health and Safety Act and Regulations for Construction Projects (OHSA). In addition, care must be taken during excavation to ensure that adequate support is provided for any existing structures and underground services located adjacent to the excavations. Due to presence of fill, the soils are classified as Type 3 under OHSA for all excavations at the site.

#### **5.7.2 Conventional Shallow Foundations**

The existing fills are not considered to be suitable to support the proposed footings and floor slab and should be completely removed and replaced with engineered fill. The commercial buildings may be founded on conventional shallow spread and/or continuous strip footings bearing in undisturbed native material free from organics or on properly placed and approved engineered fill, as noted above. Footings with a minimum width of 400 mm may be designed using a geotechnical reaction at Serviceability Limit States (SLS) of 125 kPa for 25 mm of settlement and a factored geotechnical resistance at Ultimate Limit States (ULS) of 175 kPa. The footings bearing on engineered fill should be a minimum of 1 m above the base of the interface of the engineered fills and native soils. The existing fill materials encountered in the boreholes are not considered suitable for supporting footings.



All exterior footings and footings in unheated areas should be provided with at least 1.6 m of soil cover after final grading in order to minimize the potential damage due to frost action. In addition, the bearing soil and fresh concrete should be protected from freezing during cold weather construction.

Where spread footings are constructed at different elevations, the difference in elevation between the individual footings should not be greater than one half the clear distance between the footings. In addition, the lower footings should be constructed first so that if it is necessary to construct the lower footings at a greater depth than anticipated, the elevation of the upper footings can be adjusted accordingly. Stepped strip footings should be constructed in accordance with the Ontario Building Code, Section 9.15.3.8.

The founding materials are susceptible to disturbance by construction activity especially during wet weather and care should be taken to preserve the integrity of the materials as bearing strata. Prior to pouring concrete for the footings, the foundation excavations should be inspected by Golder to confirm that the footings are founded within an undisturbed and competent bearing stratum that has been cleaned of ponded water and all disturbed, softened, loosened, organic and other deleterious material. If the concrete for the footings cannot be placed immediately after excavation and inspection, a working mat of lean concrete could be placed in the excavation to protect the integrity of the engineered fill / native soils. It is **essential** that footings founded on engineered fill be inspected by Golder prior to pouring concrete. This assumes also that the subgrade has been inspected prior to placing the engineered fill and that the engineered fill is properly placed, compacted and tested.

### **5.7.3 Floor Slabs**

The existing fill materials are not considered to be suitable for supporting the floor slabs and should be completely removed. Prior to constructing the floor slabs for the proposed commercial buildings at the site, the areas should be stripped topsoil and existing fills, and excavated to the design subgrade level. The exposed subgrade (native subsoils) should then be proofrolled with a heavy roller, in conjunction with an inspection by Golder. Remedial work (e.g. sub-excavation and replacement) should be carried out on disturbed, softened, organic or deleterious zones as directed by geotechnical personnel.

The areas should then be brought to within 200 mm of the underside of the floor slab, as required, using OPSS.PROV 1010 (Aggregates) Granular B, Type I material, or other approved excavated on-site material, placed in maximum 300 mm loose lifts and uniformly compacted to 100 percent of standard Proctor maximum dry density. The final lift directly beneath the floor slab should consist of a minimum of 200 mm of OPSS.PROV 1010 (Aggregates) Granular A material, uniformly compacted to at least 100 percent of standard Proctor maximum dry density. This should provide a modulus of subgrade reaction, for a 1 foot square plate,  $k_1$ , of approximately 25 MPa/m.

Special care should be taken to ensure compaction around columns and adjacent to foundations walls. The floor slab should be structurally separate from the foundation walls and columns. Sawcut control joints should be provided at regular intervals and along column lines to minimize shrinkage cracking and to allow for differential settlement of the floor slab.

Where the floor slab is at or above the exterior final grade, perimeter drainage at the footing level is not required. Should the proposed floor slab be lower than the external grade, perimeter and underslab drainage will likely be required. Once final design elevations are known an additional investigation may be required to determine if underslab drainage is required.



The exterior foundation walls should be backfilled with an approved site excavated material, placed in lifts and nominally compacted. Where the backfill against the exterior walls is to support settlement sensitive structures, such as concrete slabs, pavements or walkways, it should be uniformly compacted to at least 95 percent of standard Proctor maximum dry density.

#### **5.7.4 Seismic Considerations**

The 2006 Ontario Building Code (OBC 2006) came into effect on December 31, 2006 and contains updated seismic analysis and design methodology. The seismic site classification methodology outlined in the new code is based on the subsurface conditions within the upper 30 m below grade. Two methods of defining the site class are presented in the following sections for the proposed development: a conservative approach based on shallow boreholes (i.e., boreholes less than 30 m in depth) with using local geological/physiographical experience; and a method based on geophysical testing in accordance with the Section 4.1.8.4 of the OBC 2006.

It has been our experience that depending on the structural design requirements for structures that fall under the OBC 2006 jurisdiction, significant structural design and construction costs are frequently associated with the seismic design aspects. Significant cost savings may, therefore, be realized by adopting a more accurate site classification method which can only be determined based on actual physical testing extending to a depth of at least 30 m below the ground surface. As such, we recommend that the methodology for the seismic testing of the site soils be selected in conjunction with discussions with the structural engineer for the project.

#### ***Conservative Approach***

The conservative site classification is based on physical borehole information obtained at depths of less than 30 m and based on general knowledge of the local geology and physiography. Based on the results of our boreholes, the underlying native soil conditions at the site generally consist of firm to stiff silty clay underlain by compact to very dense glacial till or non-cohesive silts, sands, and gravels. Based on the borehole information and our local experience, a preliminary Site Class D may be used for the building design.

#### ***Geophysical Method***

To determine the actual site classification based on physical on-site measurements of shear wave velocity as required by OBC 2006, the Multichannel Analysis of Surface Waves (MASW) can be utilized. Should it be required by the structural engineer to optimize the Site Class for the development, MASW testing should be carried out at the site.

## **6.0 CREEK CROSSING**

### **6.1 Foundations**

It is understood that road within the development will cross the existing creek in the vicinity of Boreholes 16-9 and 16-15. However, as geotechnical conditions can be locally highly variable in the vicinity of watercourses, an additional geotechnical investigation is required at the exact location of the crossing, as part of the detailed design. It is recommended that coring of the bedrock in the vicinity of the crossing also be included as part of the detailed design investigation. It is understood that the current proposed design will consist of twin 5 m wide and 3 m high pre-cast concrete box culverts. The invert elevations and exact alignment of the culvert was not known at the time this report was prepared.

Based on the subsurface conditions encountered in Boreholes, 16-9 and 16-15, the topsoil fill is not considered suitable for support of the proposed culvert and should be completely subexcavated to found the new culvert



footings and required bedding on the native stiff to very stiff silty clay or compact to very dense sandy silt or silty gravel deposits. Depending on the actual invert elevation required for the culvert, deeper subexcavation may be required to reach the founding depth.

Box culverts typically do not require protection from frost penetration as they are tolerant to small magnitudes of movement related to freeze-thaw cycles. Open footing culverts, if proposed, should be provided with a minimum cover of 1.6 m to protect against frost.

We recommend the culverts be founded on the stiff to very stiff silty clay or compact to very dense sandy silt or silty gravel encountered in Boreholes 16-9 and 16-15 respectively. A preliminary geotechnical reaction value at Serviceability Limit States (SLS) of 75 kPa for 25 mm of settlement and a factored geotechnical resistance at Ultimate Limit States (ULS) of 125 kPa, may be used for design. An unfactored coefficient of friction,  $\tan \delta$ , between the base of the pre-cast concrete and the granular levelling layer is 0.45. Once the final culvert invert details are known, these resistances should be reviewed.

## **6.2 Bedding, Cover and Backfill**

The bedding, levelling pad and backfill requirements for pre-cast rigid frame culverts should be in accordance with OPSS 422 (Precast Reinforced Concrete Box Culverts and Box Sewers in Open Cut). The box culvert replacement should be provided with at least 300 mm of OPSS.PROV 1010 Granular 'A' material for bedding purposes, or alternatively a 100 mm thick concrete working slab. If a concrete working slab is utilized, a 75 mm thick layer of OPSS 1010 Granular 'A' or concrete fine aggregate meeting the gradation requirements set out in OPSS.PROV 1002 (Material Specification for Aggregates – Concrete) should be placed on top of the concrete working slab to provide a "levelling pad" for the box culvert replacement or extension.

As an alternative to using Granular 'A' for bedding or using a concrete working slab for subgrade protection, consideration could be given to the use of OPSS.PROV 1010 Granular 'B' Type II for bedding material placed in wet conditions. The Granular 'B' Type II should be compacted by the construction equipment, such as tamping with the backhoe bucket and/or grading/levelling by bulldozer, such that a minimum of 90 percent of SPMDD should be achievable. A 75 mm levelling pad above the bedding would still be required to seat the culvert and this levelling pad could consist of uncompacted Granular 'A' or OPSS.PROV 1002 concrete fine aggregate.

Backfill behind the culvert walls and above the culvert(s) should consist of granular fill meeting the specifications for OPSS.PROV 1010 (Aggregates) Granular 'A' or Granular 'B' Type I, II, III material. The granular backfill should be placed in maximum 200 mm thick lifts and compacted as per OPSS 422 (Precast Reinforced Concrete Box Culverts) in accordance with OPSS.PROV 501 (Compacting). The fill should also be placed concurrently on both sides of the culvert, ensuring that the backfill depth on one side does not exceed the other side by more than 400 mm to not less than 95 per cent Standard Proctor Maximum Dry Density of the material.

Inspection and field density testing should be carried out by qualified geotechnical personnel during all engineered fill placement operations to ensure that appropriate materials are used, and that adequate levels of compaction have been achieved.



### **6.3 Erosion Protection**

Provision should be made for scour and erosion protection (suitable non-woven geotextiles and / or rip-rap) at the culvert inlet / outlet location. In order to prevent surface water from flowing either beneath the culvert (potentially causing undermining and scouring) or around the culvert (creating seepage through the embankment fill, and potentially causing erosion and loss of fine soil particles), a clay seal or concrete cut-off headwall should be provided at the upstream and downstream end of the culvert. The requirements for and design of erosion protection measures for the inlet and outlet of the culvert should be assessed by the hydraulics design engineer. As a minimum, rip-rap treatment for the inlet / outlet of the culvert should be consistent with the standard Treatment Type A presented in OPSD.PROV 810.010 (Rip-Rap Treatment).

### **6.4 Culvert Construction Considerations**

Control of surface water and groundwater will be necessary during construction of the culvert to allow for subexcavation of unsuitable soils and placement of the foundation bedding / embedment soils in dry conditions.

Although the existing and design invert elevation of the culvert is not currently known, excavations for the culvert construction will likely extend below the approximate groundwater level at the site which is anticipated to be near or above the creek elevation. Groundwater control will be required to control seepage from the existing embankment fill. It is anticipated that the groundwater inflow can be controlled by pumping from properly installed sumps within the excavations provided excavations are not deeper than the groundwater level at the time of construction. If excavations extend into the gravelly sandy silt or silty gravel layers encountered between 2.9 m and 4.1 m below ground surface in Boreholes 16-9 and 16-15 respectively, additional positive dewatering or a cut-off system of groundwater control may be required. The groundwater level should be maintained at least 0.5 m below the proposed subexcavation depth until such time as the bedding / embedment soils are placed above the static groundwater level.

Depending on the volume of water flowing through the existing culvert at the time of construction, the surface water (i.e. creek) will also need to be diverted around the area of the culvert. The surface water could be temporarily passed through the construction area by means of a temporary pipe, or diverted by pumping from behind a temporary cofferdam/cut-off wall. Surface water should be directed away from the excavation area to prevent ponding of water that could result in disturbance and weakening of the foundation subgrade soils.

Temporary excavations for the culvert replacement will be made through the existing topsoil, silty clay fill, stiff to very stiff silty clay, and likely into the compact silty gravel and very dense gravelly sandy silt. Excavation works must be carried out in accordance with the guidelines outlined in the latest version of the Occupational Health and Safety Act and Regulations for Construction Projects. The existing fill and the native materials are classified primarily as Type 3 soil, according to the OHSA. Temporary open-cut excavations through these materials should be made with side slopes formed no steeper than 1H:1V, assuming proper groundwater and surface water control is in place.

Alternatively, any temporary excavation support systems should be designed by a Professional Engineer including assessment of the potential for basal heave. If a sheet-pile cut off is implemented at the site, the requirements of OPSS.PROV 539 should be followed. Design of temporary works will be entirely the responsibility of the contractor.



Inspection and field density testing should be carried out by qualified geotechnical personnel during all engineered fill placement operations to ensure that appropriate materials are used, and that adequate levels of compaction have been achieved.

## **7.0 STORMWATER MANAGEMENT POND**

It is understood that a 'wet' Stormwater Management (SWM) detention Pond will be located on the western side of the site. Based on the drawings prepared by Valdor Engineering Inc. (Project No. 15144 Figure 14) entitled "SWM Pond Plan" dated November 2016, the elevation for the proposed main pond invert will be Elevation 251.5 m. The Normal Water Level in the pond and the 100 Year Water Level elevations are noted to be Elev. 251.5 m and Elev. 253.22 m, respectively.

Based on the results of our subsurface investigation within the vicinity of the pond (Boreholes 16-8 and 16-9), the soils encountered generally consist of topsoil and cohesive deposits of silty clay overlying non-cohesive soils ranging in gradation from gravelly sandy silt to silty gravel. The groundwater levels measured between July 4, 2016 and August 4, 2016 in the monitoring wells installed in Boreholes 16-8 and 16-9 range from 0.9 m to 2.3 m below ground surface.

The following sections provides geotechnical recommendations for the design of the proposed SWM Pond:

- It is understood that the base of the proposed SWM Pond will be at Elevation 250.0 m. Based on the subsurface soil and groundwater conditions encountered in the boreholes, the soils at the base of the SWM pond are anticipated to consist predominately of stiff to very stiff silty clay. The local groundwater levels measured in the monitoring wells installed ranged from approximately 0.9 m to 2.3 m depth below ground surface or Elevation 250.9 m to 251.7 m. Groundwater control during pond excavation within the silty clay material can be handled, as required, by pumping from properly constructed and filtered sumps located within the excavations. However, more significant groundwater seepage may be expected from the underlying silts, sands, and gravels should the excavation extend into this stratum. Depending upon final elevation of the base of the pond and the proximity to the underlying permeable deposits, some form of positive groundwater control may be required to maintain the stability of the base and side slopes of the pond excavations, in addition to pumping from sumps. In any case, the groundwater level should be lowered to a minimum of 1 m below the invert of the pond in advance of the excavation reaching the invert levels. Once final pond details are known, Golder can provide recommendations as to whether an EASR or PTTW are required and an estimation of pumping volumes.
- The pond berms should have a minimum of 4 m top width to allow access by maintenance vehicles. The material used to construct the berms should consist of approved relatively low hydraulic conductivity soils, such as clayey silt, silty clay or cohesive till. In this regard, excavated clayey materials from the overall site may be suitable for reuse for berm construction subject to approval by the geotechnical engineer. Prior to placing materials for the berm, all topsoil and fill must first be removed/subexcavated to expose the native cohesive silty clay. The exposed subgrade area(s) should then be heavily proofrolled and placement and compaction of the berm materials should be monitored by a geotechnical engineer. The material approved for berm construction should be placed in maximum 300 mm loose lifts and uniformly compacted to at least 97 percent of the standard Proctor maximum dry density. Strict control over placement water content of the material will be necessary. Care should be taken to ensure homogeneity of the constructed berm (i.e. no erodible layers). The prepared foundation for the berm should be inspected by the geotechnical engineer



prior to placement of berm fill material. The perimeter berms should be topped up with a minimum thickness of 200 mm of OPSS.PROV 1010 (Aggregates) Granular B Type II (50 mm Crusher Run Limestone) material compacted to 98 percent of the Standard Proctor maximum dry density of the material to allow access for maintenance vehicles.

- Based on the drawings provided, pond side slopes are noted to be 5H:1V. The results of the computer based stability analysis for the proposed side slopes, soil strata and water levels indicate a Factor of Safety against global (i.e. deep-seated) slope instability is greater than 1.5 which is considered to be satisfactory. Should these details be modified during final pond design, we should be contacted to review the stability.
- The need for a low hydraulic conductivity liner, should be assessed during detailed design, although if the base of the pond is fully within the silty clay deposit, a liner is likely not required.
- The native clayey soils that are anticipated to be encountered at the pond base and slopes are susceptible to disturbance by heavy construction equipment, which could affect trafficability during construction, especially during wet weather or where seepage is encountered. A layer of coarse granular material may be required to support construction traffic.
- A permanent erosion protection blanket, such as synthetic fibre mat or the equivalent, should be considered to protect the pond side slopes from erosion and promote vegetation growth by maintaining moisture.

Once the final pond design is available, the above recommendations should be reviewed by the geotechnical engineer, following which additional recommendations can be provided, as required. The hydrogeological aspects of the SWM pond designs should be addressed by Golder as part of the detailed design. As the groundwater levels are expected to fluctuate, further groundwater measurements should be carried out and the above geotechnical recommendations should be reviewed prior to finalizing the pond design.

## **8.0 MONITORING WELL DECOMMISSIONING**

As previously indicated, monitoring wells were installed in select Boreholes to permit monitoring of the groundwater level and preliminary hydrogeological investigation. Ontario Regulation (O.Reg.) 903 as amended, of the Ontario Water Resources Act requires that monitoring wells are properly abandoned/decommissioned by qualified personnel. It is recommended that the decommissioning of the monitoring wells be carried out as part of the construction activities at the site so that water level measurements can be taken immediately prior to construction. If requested, Golder could provide assistances to Bromont in arranging for the decommissioning of the monitoring wells by a licensed water well drilling contractor.

## **9.0 ADDITIONAL INVESTIGATION WORK**

The geotechnical aspects of the final design drawings and specifications should be reviewed by this office once further development details are available and prior to tendering and construction, to confirm that the intent of this report has been met. During construction, full-time engineered fill monitoring, sufficient foundation inspections, subgrade inspections and in-situ materials testing should be carried out to confirm that the conditions exposed are consistent with those encountered in the boreholes and to monitor conformance to the pertinent project specifications.

An additional borehole investigation may be required once the location of the creek crossing and stormwater management pond(s) are finalized.



## PRELIMINARY GEOTECHNICAL INVESTIGATION PRESTIGE EMPLOYMENT AND COMMERCIAL DEVELOPMENT

Once the excavation depths and structure locations are known, an additional hydrogeological study should be carried out to determine the potential water seepage volume and to address the requirements for construction dewatering and PTTW.

It would be prudent to carry out a "public digging" (i.e., test pitting) during the tender stage, to allow prospective bidders to assess the subsurface conditions and determine the type and location of groundwater control required, consistent with their equipment capabilities and the actual groundwater conditions at that time. The locations of the test pits should be determined in consultation with Golder.

Additional geophysical testing should be carried out should the actual seismic site classification be desired as part of detailed design.

### 10.0 CLOSING

As previously indicated, the preliminary geotechnical recommendations provided in this report are not sufficient for detailed design purposes. Once the final development plans are available, the information in this report should be reviewed by the geotechnical engineer and an additional investigation carried out, compatible with the actual proposed development plans for the site. In this regard, Golder would be pleased to provide further geotechnical services as the site development plans proceed.

We trust that this report provides sufficient preliminary geotechnical engineering information to aid in the planning and preliminary design of the proposed development at the site. If you have any questions regarding the contents of this report or require additional information, please do not hesitate to contact this office.

Yours truly,

**GOLDER ASSOCIATES LTD.**

Eric Wolinsky, M.A.Sc., EIT  
Geotechnical Engineering Group



Sarah E. M. Poot, P.Eng.  
Associate, Senior Geotechnical Engineer

EW/SEMP/nh/sv/jnh

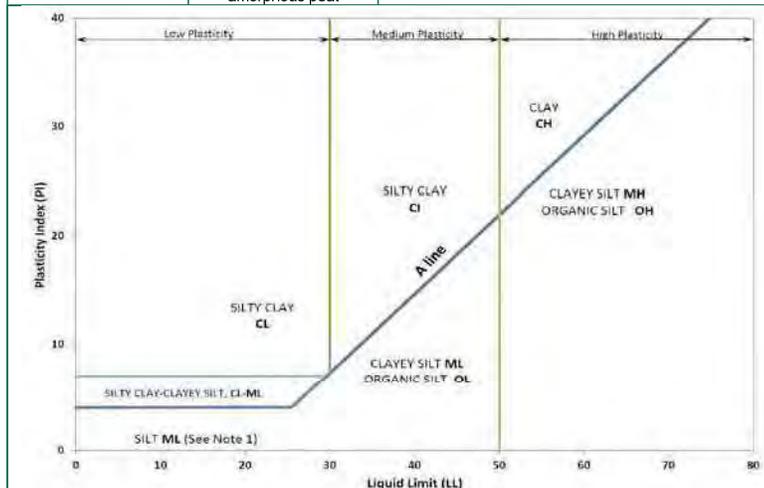
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# METHOD OF SOIL CLASSIFICATION

The Golder Associates Ltd. Soil Classification System is based on the Unified Soil Classification System (USCS)

Organic or Inorganic	Soil Group	Type of Soil	Gradation or Plasticity	$Cu = \frac{D_{60}}{D_{10}}$	$Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$	Organic Content	USCS Group Symbol	Group Name							
INORGANIC (Organic Content $\leq 30\%$ by mass)	COARSE-GRAINED SOILS ( $>50\%$ by mass is larger than 0.075 mm)	GRAVELS ( $>50\%$ by mass of coarse fraction is larger than 4.75 mm)	Poorly Graded	$<4$	$\leq 1$ or $\geq 3$	$\leq 30\%$	GP	GRAVEL							
			Well Graded	$\geq 4$	1 to 3		GW	GRAVEL							
			Below A Line		n/a		GM	SILTY GRAVEL							
			Above A Line		n/a		GC	CLAYEY GRAVEL							
		SANDS ( $\geq 50\%$ by mass of coarse fraction is smaller than 4.75 mm)	Poorly Graded	$<6$	$\leq 1$ or $\geq 3$		SP	SAND							
			Well Graded	$\geq 6$	1 to 3		SW	SAND							
			Below A Line		n/a		SM	SILTY SAND							
			Above A Line		n/a		SC	CLAYEY SAND							
			Organic or Inorganic	Soil Group	Type of Soil		Laboratory Tests	Field Indicators					Organic Content	USCS Group Symbol	Primary Name
								Dilatancy	Dry Strength	Shine Test	Thread Diameter	Toughness (of 3 mm thread)			
INORGANIC (Organic Content $\leq 30\%$ by mass)	FINE-GRAINED SOILS ( $\geq 50\%$ by mass is smaller than 0.075 mm)	SILTS (Non-Plastic or PL and LL plot below A-Line on Plasticity Chart below)	Liquid Limit $<50$	Rapid	None	None	$>6$ mm	N/A (can't roll 3 mm thread)	$<5\%$	ML	SILT				
				Slow	None to Low	Dull	3mm to 6 mm	None to low	$<5\%$	ML	CLAYEY SILT				
			Liquid Limit $\geq 50$	Slow to very slow	Low to medium	Dull to slight	3mm to 6 mm	Low	5% to 30%	OL	ORGANIC SILT				
				Slow to very slow	Low to medium	Slight	3mm to 6 mm	Low to medium	$<5\%$	MH	CLAYEY SILT				
		CLAYS (PI and LL plot above A-Line on Plasticity Chart below)	Liquid Limit $<30$	None	Low to medium	Slight to shiny	$\sim 3$ mm	Low to medium	0% to 30%	CL	SILTY CLAY				
				None	Medium to high	Slight to shiny	1 mm to 3 mm	Medium		CI	SILTY CLAY				
				None	High	Shiny	$<1$ mm	High		(see Note 2)	CH	CLAY			
			Liquid Limit $\geq 50$	None	Low to medium	Slight to shiny	$\sim 3$ mm	Low to medium	0% to 30%	CL	SILTY CLAY				
				None	Medium to high	Slight to shiny	1 mm to 3 mm	Medium		CI	SILTY CLAY				
HIGHLY ORGANIC SOILS (Organic Content $>30\%$ by mass)	Peat and mineral soil mixtures							30% to 75%	PT	SILTY PEAT, SANDY PEAT					
								75% to 100%		PEAT					



Note 1 – Fine grained materials with PI and LL that plot in this area are named (ML) SILT with slight plasticity. Fine-grained materials which are non-plastic (i.e. a PL cannot be measured) are named SILT.  
 Note 2 – For soils with  $<5\%$  organic content, include the descriptor “trace organics” for soils with between 5% and 30% organic content include the prefix “organic” before the Primary name.

**Dual Symbol** — A dual symbol is two symbols separated by a hyphen, for example, GP-GM, SW-SC and CL-ML.

For non-cohesive soils, the dual symbols must be used when the soil has between 5% and 12% fines (i.e. to identify transitional material between “clean” and “dirty” sand or gravel.

For cohesive soils, the dual symbol must be used when the liquid limit and plasticity index values plot in the CL-ML area of the plasticity chart (see Plasticity Chart at left).

**Borderline Symbol** — A borderline symbol is two symbols separated by a slash, for example, CL/CI, GM/SM, CL/ML.

A borderline symbol should be used to indicate that the soil has been identified as having properties that are on the transition between similar materials. In addition, a borderline symbol may be used to or indicates a range of similar soil types within a stratum.



## ABBREVIATIONS AND TERMS USED ON RECORDS OF BOREHOLES AND TEST PITS

### PARTICLE SIZES OF CONSTITUENTS

Soil Constituent	Particle Size Description	Millimetres	Inches (US Std. Sieve Size)
BOULDERS	Not Applicable	>300	>12
COBBLES	Not Applicable	75 to 300	3 to 12
GRAVEL	Coarse	19 to 75	0.75 to 3
	Fine	4.75 to 19	(4) to 0.75
SAND	Coarse	2.00 to 4.75	(10) to (4)
	Medium	0.425 to 2.00	(40) to (10)
	Fine	0.075 to 0.425	(200) to (40)
SILT/CLAY	Classified by plasticity	<0.075	< (200)

### MODIFIERS FOR SECONDARY AND MINOR CONSTITUENTS

Percentage by Mass	Modifier
>35	Use 'and' to combine major constituents (i.e., SAND and GRAVEL, SAND and CLAY)
> 12 to 35	Primary soil name prefixed with "gravelly, sandy, SILTY, CLAYEY" as applicable
> 5 to 12	some
≤ 5	trace

### PENETRATION RESISTANCE

#### Standard Penetration Resistance (SPT), N:

The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) required to drive a 50 mm (2 in.) split-spoon sampler for a distance of 300 mm (12 in.).

#### Cone Penetration Test (CPT)

An electronic cone penetrometer with a 60° conical tip and a project end area of 10 cm<sup>2</sup> pushed through ground at a penetration rate of 2 cm/s. Measurements of tip resistance (q<sub>t</sub>), porewater pressure (u) and sleeve frictions are recorded electronically at 25 mm penetration intervals.

#### Dynamic Cone Penetration Resistance (DCPT); N<sub>d</sub>:

The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) to drive uncased a 50 mm (2 in.) diameter, 60° cone attached to "A" size drill rods for a distance of 300 mm (12 in.).

- PH: Sampler advanced by hydraulic pressure  
 PM: Sampler advanced by manual pressure  
 WH: Sampler advanced by static weight of hammer  
 WR: Sampler advanced by weight of sampler and rod

### SAMPLES

AS	Auger sample
BS	Block sample
CS	Chunk sample
DO or DP	Seamless open ended, driven or pushed tube sampler – note size
DS	Denison type sample
FS	Foil sample
RC	Rock core
SC	Soil core
SS	Split spoon sampler – note size
ST	Slotted tube
TO	Thin-walled, open – note size
TP	Thin-walled, piston – note size
WS	Wash sample

### SOIL TESTS

w	water content
PL, w <sub>p</sub>	plastic limit
LL, w <sub>L</sub>	liquid limit
C	consolidation (oedometer) test
CHEM	chemical analysis (refer to text)
CID	consolidated isotropically drained triaxial test <sup>1</sup>
CIU	consolidated isotropically undrained triaxial test with porewater pressure measurement <sup>1</sup>
D <sub>r</sub>	relative density (specific gravity, G <sub>s</sub> )
DS	direct shear test
GS	specific gravity
M	sieve analysis for particle size
MH	combined sieve and hydrometer (H) analysis
MPC	Modified Proctor compaction test
SPC	Standard Proctor compaction test
OC	organic content test
SO <sub>4</sub>	concentration of water-soluble sulphates
UC	unconfined compression test
UU	unconsolidated undrained triaxial test
V (FV)	field vane (LV-laboratory vane test)
γ	unit weight

1. Tests which are anisotropically consolidated prior to shear are shown as CAD, CAU.

### NON-COHESIVE (COHESIONLESS) SOILS

#### Compactness<sup>2</sup>

Term	SPT 'N' (blows/0.3m) <sup>1</sup>
Very Loose	0 - 4
Loose	4 to 10
Compact	10 to 30
Dense	30 to 50
Very Dense	>50

1. SPT 'N' in accordance with ASTM D1586, uncorrected for overburden pressure effects.  
 2. Definition of compactness descriptions based on SPT 'N' ranges from Terzaghi and Peck (1967) and correspond to typical average N<sub>60</sub> values.

#### Field Moisture Condition

Term	Description
Dry	Soil flows freely through fingers.
Moist	Soils are darker than in the dry condition and may feel cool.
Wet	As moist, but with free water forming on hands when handled.

### COHESIVE SOILS

#### Consistency

Term	Undrained Shear Strength (kPa)	SPT 'N' <sup>1</sup> (blows/0.3m)
Very Soft	<12	0 to 2
Soft	12 to 25	2 to 4
Firm	25 to 50	4 to 8
Stiff	50 to 100	8 to 15
Very Stiff	100 to 200	15 to 30
Hard	>200	>30

1. SPT 'N' in accordance with ASTM D1586, uncorrected for overburden pressure effects; approximate only.

#### Water Content

Term	Description
w < PL	Material is estimated to be drier than the Plastic Limit.
w ~ PL	Material is estimated to be close to the Plastic Limit.
w > PL	Material is estimated to be wetter than the Plastic Limit.



## LIST OF SYMBOLS

Unless otherwise stated, the symbols employed in the report are as follows:

<b>I. GENERAL</b>		<b>(a) Index Properties (continued)</b>	
$\pi$	3.1416	w	water content
$\ln x$	natural logarithm of x	$w_l$ or LL	liquid limit
$\log_{10} x$	x or log x, logarithm of x to base 10	$w_p$ or PL	plastic limit
g	acceleration due to gravity	$I_p$ or PI	plasticity index = $(w_l - w_p)$
t	time	$w_s$	shrinkage limit
		$I_L$	liquidity index = $(w - w_p) / I_p$
		$I_C$	consistency index = $(w_l - w) / I_p$
		$e_{max}$	void ratio in loosest state
		$e_{min}$	void ratio in densest state
		$I_D$	density index = $(e_{max} - e) / (e_{max} - e_{min})$ (formerly relative density)
<b>II. STRESS AND STRAIN</b>		<b>(b) Hydraulic Properties</b>	
$\gamma$	shear strain	h	hydraulic head or potential
$\Delta$	change in, e.g. in stress: $\Delta \sigma$	q	rate of flow
$\varepsilon$	linear strain	v	velocity of flow
$\varepsilon_v$	volumetric strain	i	hydraulic gradient
$\eta$	coefficient of viscosity	k	hydraulic conductivity (coefficient of permeability)
$\nu$	Poisson's ratio	j	seepage force per unit volume
$\sigma$	total stress	<b>(c) Consolidation (one-dimensional)</b>	
$\sigma'$	effective stress ( $\sigma' = \sigma - u$ )	$C_c$	compression index (normally consolidated range)
$\sigma'_{vo}$	initial effective overburden stress	$C_r$	recompression index (over-consolidated range)
$\sigma_1, \sigma_2, \sigma_3$	principal stress (major, intermediate, minor)	$C_s$	swelling index
		$C_\alpha$	secondary compression index
		$m_v$	coefficient of volume change
$\sigma_{oct}$	mean stress or octahedral stress = $(\sigma_1 + \sigma_2 + \sigma_3)/3$	$c_v$	coefficient of consolidation (vertical direction)
$\tau$	shear stress	$c_h$	coefficient of consolidation (horizontal direction)
u	porewater pressure	$T_v$	time factor (vertical direction)
E	modulus of deformation	U	degree of consolidation
G	shear modulus of deformation	$\sigma'_p$	pre-consolidation stress
K	bulk modulus of compressibility	OCR	over-consolidation ratio = $\sigma'_p / \sigma'_{vo}$
<b>III. SOIL PROPERTIES</b>		<b>(d) Shear Strength</b>	
<b>(a) Index Properties</b>		$\tau_p, \tau_r$	peak and residual shear strength
$\rho(\gamma)$	bulk density (bulk unit weight)*	$\phi'$	effective angle of internal friction
$\rho_d(\gamma_d)$	dry density (dry unit weight)	$\delta$	angle of interface friction
$\rho_w(\gamma_w)$	density (unit weight) of water	$\mu$	coefficient of friction = $\tan \delta$
$\rho_s(\gamma_s)$	density (unit weight) of solid particles	$c'$	effective cohesion
$\gamma'$	unit weight of submerged soil ( $\gamma' = \gamma - \gamma_w$ )	$c_u, s_u$	undrained shear strength ( $\phi = 0$ analysis)
$D_R$	relative density (specific gravity) of solid particles ( $D_R = \rho_s / \rho_w$ ) (formerly $G_s$ )	p	mean total stress $(\sigma_1 + \sigma_3)/2$
e	void ratio	$p'$	mean effective stress $(\sigma'_1 + \sigma'_3)/2$
n	porosity	q	$(\sigma_1 - \sigma_3)/2$ or $(\sigma'_1 - \sigma'_3)/2$
S	degree of saturation	$q_u$	compressive strength $(\sigma_1 - \sigma_3)$
		$S_t$	sensitivity

\* Density symbol is  $\rho$ . Unit weight symbol is  $\gamma$  where  $\gamma = \rho g$  (i.e. mass density multiplied by acceleration due to gravity)

Notes: 1  
2

$\tau = c' + \sigma' \tan \phi'$   
shear strength = (compressive strength)/2



PROJECT: 1648668

# RECORD OF BOREHOLE: 16-2

SHEET 1 OF 1

LOCATION: N ; E

BORING DATE: June 15, 2016

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊙		Wp		W			WI
0		GROUND SURFACE		254.80													
		TOPSOIL FILL		0.00													
		FILL - (CL) SILTY CLAY, trace sand, roots, organic inclusions; brown; cohesive, w>PL, firm		254.50	1	SS	7										
		(Cl) SILTY CLAY, trace sand; brown, becoming grey below 3.96 m; cohesive, w>PL, stiff to firm		0.30													
1				254.04													
				0.76	2	SS	13										
2																	
					3	SS	12										
3																	
					4	SS	14										
4																	
					5	SS	7										
5																	
					6	SS	7										
6																	
					7	SS	34										
7		END OF BOREHOLE		248.25													
		NOTES:		6.55													
		1. Groundwater encountered during drilling at a depth of 4.9 m below ground surface June 15, 2016,															
		2. Water level measured in open borehole at a depth of 4.3 m below ground surface upon completion of drilling, June 15, 2016.															
8																	
9																	
10																	

DEPTH SCALE

1 : 50



LOGGED: JZL

CHECKED: EW

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PROJECT: 1648668  
 LOCATION: N ; E

# RECORD OF BOREHOLE: 16-3

SHEET 1 OF 1

BORING DATE: June 15, 2016

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊙		Wp		W			WI
0		GROUND SURFACE		256.90													
		TOPSOIL FILL		0.00													
		FILL - (CL) SILTY CLAY, some sand, trace gravel; dark brown; cohesive, w<PL, stiff		256.60	1	SS	14										
		(ML) sandy SILT to (SM) SILTY SAND, some gravel to gravelly; brown, becoming grey below 4.04 m, oxidation staining to 4.04 m (TILL); non-cohesive, dry to moist, compact to very dense		0.30													
1				256.21													
				0.69													
2					2	SS	11										
3					3	SS	22										
4					4	SS	33										
5					5	SS	85										
6					6	SS	84										
7		END OF BOREHOLE		250.35													
		NOTES: 1. Water level measured in open borehole at a depth of 5.8 m below ground surface upon completion of drilling, June 15, 2016.		6.55													

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PROJECT: 1648668

LOCATION: N ; E

# RECORD OF BOREHOLE: 16-4

BORING DATE: June 16, 2016

SHEET 1 OF 1

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. +	Q - ●	rem V. ⊕			U - ○
0		GROUND SURFACE		257.10													
		TOPSOIL FILL		0.00													
		FILL - (CL) SILTY CLAY, trace sand, trace gravel, organics; brown; cohesive, w>PL, soft		256.80	1	SS	8										
		(ML) gravelly sandy CLAYEY SILT; brown, oxidation staining; cohesive, w>PL, firm		256.41													
1				0.69	2	SS	6										
		(ML) gravelly sandy SILT; brown, becoming grey below 4.04 m (TILL); non-cohesive, moist to dry, wet below 5.94 m, compact to very dense		255.73													
2				1.37	3	SS	16										
					4	SS	29										
3					5	SS	38										
4																	
5					6	SS	10/ 0.08										
6				251.00													
		- Spoon bouncing at a depth of 6.1 m		6.10													
		END OF BOREHOLE SPOON REFUSAL															
		NOTES: 1. Water level measured in hollow stem augers at a depth of 5.9 m below ground surface upon completion of drilling, June 16, 2016. 2. Water level measured in open borehole at a depth of 5.3 m below ground surface upon completion of drilling, June 16, 2016. 3. Groundwater level measured in monitoring well at a depth of 2.26 m below ground surface, July 4, 2016. 4. Groundwater level measured in monitoring well at a depth of 2.69 m below ground surface, August 4, 2016.															

DEPTH SCALE

1 : 50



LOGGED: JZL

CHECKED: EW

GTA-BHS 001 S:\CLIENTS\BROMONT\_HOMES\LINDSAY\_LOGIE\_ST\_90102\_DATA\GINT\1648668\1648668.GPJ\_GAL-MIS.GDT\_11/30/16

PROJECT: 1648668  
 LOCATION: N ; E

# RECORD OF BOREHOLE: 16-5

SHEET 1 OF 1

BORING DATE: June 16, 2016

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. +	Q - ●	rem V. ⊕			U - ○
0		GROUND SURFACE		256.90													
		TOPSOIL FILL		0.00													
		FILL - (CL) SILTY CLAY, trace sand, trace gravel, organics; brown; cohesive, w<PL, firm		256.60 0.30	1	SS	6										
		(Cl) sandy SILTY CLAY, trace gravel to gravelly; brown; cohesive, w>PL, stiff		256.21 0.69	2	SS	13										
					3	SS	10										
					4	SS	43										
		(ML) Gravelly Sandy SILT; brown, becoming grey below 4.04 m, oxidation staining to 5.18 m (TILL); non-cohesive, moist to dry, wet at 2.13 m, dense to very dense		254.61 2.29	5	SS	99/ 0.25										
					6	SS	49										
		END OF BOREHOLE AUGER REFUSAL		251.57 5.33													
		NOTES: 1. Groundwater encountered during drilling at a depth of 5.2 m below ground surface June 16, 2016. 2. Water level measured in open borehole at a depth of 2.1 m below ground surface upon completion of drilling, June 16, 2016.															

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PROJECT: 1648668  
 LOCATION: N ; E

# RECORD OF BOREHOLE: 16-6

SHEET 1 OF 1

BORING DATE: June 16, 2016

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. +	rem V. ⊕	Q - ●			U - ○
0		GROUND SURFACE		255.90													
		TOPSOIL FILL		0.00													
		FILL - (CL) SILTY CLAY, trace sand, organics, rootlets; brown; cohesive, w<PL to w>PL, firm		255.60 0.30	1	SS	8										
1					2	SS	7										
		(Cl) SILTY CLAY; brown; cohesive, w<PL to w>PL, stiff to firm		254.53 1.37	3	SS	14										
2					4	SS	13										
3					5	SS	6										
4																	
		(ML) gravelly sandy SILT; grey (TILL); non-cohesive, wet, compact to very dense		251.63 4.27	6	SS	22										
5																	
6					7	SS	61										
		END OF BOREHOLE		248.35 6.55													
7		NOTES: 1. Groundwater encountered during drilling at a depth of 6.1 m below ground surface June 16, 2016. 2. Water level measured in hollow stem augers at a depth of 6.1 m below ground surface upon completion of drilling, June 16, 2016. 3. Groundwater level measured in monitoring well at a depth of 2.40 m below ground surface, July 4, 2016.															
8																	
9																	
10																	

DEPTH SCALE  
1 : 50



LOGGED: JZL  
CHECKED: EW

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PROJECT: 1648668  
 LOCATION: N ; E

# RECORD OF BOREHOLE: 16-7

SHEET 1 OF 1  
 DATUM:

BORING DATE: June 15, 2016

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊖		Q - ● U - ○		Wp			W
0		GROUND SURFACE		253.30													
		TOPSOIL FILL		0.00													
		FILL - (CL) SILTY CLAY, trace sand, organic inclusions; brown; cohesive, w>PL, firm		0.30	1	SS	6										
		(Cl) SILTY CLAY, some sand; brown, becoming grey below 3.43 m, oxidation staining to 3.43 m; cohesive, w>PL, very stiff to stiff		0.69	2	SS	12										
1																	
					3	SS	18										
2																	
					4	SS	19										
3																	
					5	SS	11										
4																	
					6	SS	10										
5																	
6		(GM) SILTY GRAVEL and SAND, some sand, trace fines, cobbles; dark grey; non-cohesive, wet, compact		5.49	7	SS	24										
7		END OF BOREHOLE		6.55													
		NOTES: 1. Groundwater encountered during drilling at a depth of 5.8 m below ground surface June 15, 2016. 2. Water level measured in open borehole at a depth of 5.8 m below ground surface upon completion of drilling, June 15, 2016.															
8																	
9																	
10																	

DEPTH SCALE  
 1 : 50



LOGGED: JZL  
 CHECKED: EW

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PROJECT: 1648668  
 LOCATION: N ; E

# RECORD OF BOREHOLE: 16-9

SHEET 1 OF 1  
 DATUM:

BORING DATE: June 16, 2016

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								20 40 60 80		nat V. + Q - ● rem V. ⊕ U - ○		10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup>		Wp   W   Wl			
0		GROUND SURFACE		252.30													
		TOPSOIL FILL		0.00													
		(Cl) SILTY CLAY; brown becoming grey below 2.13 m; cohesive, w~PL to w>PL, stiff		251.84	1	SS	11										
1				0.46	2	SS	8										
					3	SS	11										
2					4	SS	11										
					5	SS	12										
3																	
4		(ML) gravelly sandy SILT, cobbles and boulders; dark grey; non-cohesive, wet, very dense		248.19													
		- Auger grinding throughout		4.11	6	SS	65/23										
5																	
6		END OF BOREHOLE AUGER REFUSAL		246.13	7	SS	50/0.07										
		NOTES: 1. Groundwater encountered during drilling at a depth of 4.6 m below ground surface June 16, 2016. 2. Water level measured in hollow stem augers at a depth of 2.1 m below ground surface upon completion of drilling, June 16, 2016. 3. Groundwater level measured in monitoring well at a depth of 0.90 m below ground surface, July 4, 2016. 4. Groundwater level measured in monitoring well at a depth of 1.39 m below ground surface, August 4, 2016.		6.17													

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DEPTH SCALE  
 1 : 50



LOGGED: JZL  
 CHECKED: EW

PROJECT: 1648668

# RECORD OF BOREHOLE: 16-10

SHEET 1 OF 1

LOCATION: N ; E

BORING DATE: June 15, 2016

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. rem V.		Q - U		Wp			W
0		GROUND SURFACE		253.10													
		TOPSOIL FILL		0.00													
		FILL - (CL) SILTY CLAY, trace sand, trace organics inclusions; brown; cohesive, w<PL, firm		252.80 0.30	1	SS	5										
1		(Cl) SILTY CLAY; brown, becoming grey below 3.35 m; cohesive, w~PL to w>PL, very stiff to firm		252.41 0.69	2	SS	10								MH		
2					3	SS	17										
3					4	SS	10										
4					5	SS	8										
4	CME55 Rubber Track 108mm Solid Stem Auger	- Auger grinding from 3.96 m to 4.27 m															
5					6	SS	5										
6				247.31 5.79	7	SS	15										
6		(GM) SILTY GRAVEL and SAND, trace fines; dark grey; non-cohesive, wet, compact															
7																	
7				245.78													
8		END OF BOREHOLE AUGER REFUSAL		7.32													
8		NOTES: 1. Groundwater encountered during drilling at a depth of 6.1 m below ground surface June 15, 2016. 2. Water level measured in open borehole at a depth of 2.4 m below ground surface upon completion of drilling, June 15, 2016. 3. Borehole caved to a depth of 6.4 m below ground surface upon completion of drilling, June 15, 2016.															

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DEPTH SCALE

1 : 50



LOGGED: JZL

CHECKED: EW

PROJECT: 1648668  
 LOCATION: N ; E

# RECORD OF BOREHOLE: 16-11

SHEET 1 OF 1  
 DATUM:

BORING DATE: June 15, 2016

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊙		Wp				W	
0		GROUND SURFACE		254.00													
		TOPSOIL FILL		0.00													
		FILL - (ML) sandy SILT, trace gravel, topsoil inclusions; brown; cohesive, dry to moist, loose		253.70	1	SS	9										
		(Cl) SILTY CLAY; brown becoming grey below 3.35 m, oxidation staining to 3.35 m; cohesive, w~PL to w>PL, very stiff to firm		253.31													
1				0.69	2	SS	20										
2					3	SS	16										
3					4	SS	10										
4					5	SS	10										
5					6	SS	15										
6				248.67													
		(SP) gravelly SAND, trace fines; dark grey; non-cohesive, wet, loose		5.33	7	SS	7										
7				246.99													
		END OF BOREHOLE AUGER REFUSAL		7.01													
8		NOTES: 1. Groundwater encountered during drilling at a depth of 4.9 m below ground surface June 15, 2016.															

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DEPTH SCALE  
 1 : 50



LOGGED: JZL  
 CHECKED: EW

PROJECT: 1648668  
 LOCATION: N ; E

# RECORD OF BOREHOLE: 16-12

SHEET 1 OF 1

BORING DATE: June 16, 2016

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
							20	40	60	80	nat V. +	rem V. ⊕	Q - ●			U - ○
0		GROUND SURFACE		255.40												
		TOPSOIL FILL		0.00												
		FILL - (CL) SILTY CLAY, trace sand, organics inclusions; brown; cohesive, w<PL, stiff		255.10 0.30	1	SS	11									
1		(Cl) SILTY CLAY, trace sand, trace gravel; brown, becoming grey below 2.9 m; cohesive, w~PL to w>PL, stiff		254.71 0.69	2	SS	14									
2					3	SS	13									
3					4	SS	10									
4					5	SS	9									
4		(CL) gravelly sandy SILTY CLAY, cobbles and boulders; grey; cohesive, w<PL, hard		251.59 3.81												
5					6	SS	50/ 0.07									
6		END OF BOREHOLE AUGER REFUSAL		249.61 5.79												
7		NOTES: 1. Groundwater encountered during drilling at a depth of 4.6 m below ground surface June 16, 2016. 2. Water level measured in open borehole at a depth of 2.1 m below ground surface upon completion of drilling, June 16, 2016.														
8																
9																
10																

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PROJECT: 1648668  
 LOCATION: N ; E

# RECORD OF BOREHOLE: 16-14

SHEET 1 OF 1

BORING DATE: June 16, 2016

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. + rem V. ⊕	Q - U - ⊙	Wp			W
0		GROUND SURFACE		254.00													
		TOPSOIL FILL		0.00													
		FILL - (CL) SILTY CLAY, trace sand, organic inclusions; brown; cohesive, w<PL, stiff		253.70	1	SS	9										
		(Cl) SILTY CLAY, trace sand, trace gravel; brown becoming grey below 2.59 m, oxidation staining to 1.37 m; cohesive, w~PL to w>PL, stiff to hard		0.30													
				253.31													
1				0.69	2	SS	16										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

DEPTH SCALE  
 1 : 50



LOGGED: JZL  
 CHECKED: EW

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PROJECT: 1648668

# RECORD OF BOREHOLE: 16-16

SHEET 1 OF 1

LOCATION: N ; E

BORING DATE: June 17, 2016

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT		Wp   W   Wl			
0		GROUND SURFACE		253.20											
		TOPSOIL FILL		0.00											
		FILL - (CL) SILTY CLAY, trace sand, organics inclusions, roots; dark brown; cohesive, w>PL, firm		252.90	1	SS	8								
		(Cl) SILTY CLAY, trace sand; brown, oxidation staining; cohesive, w>PL, firm		252.51	2	SS	5								
		(ML) gravelly sandy SILT; grey, cobbles (TILL); non-cohesive, moist, dense to very dense		251.83	3	SS	11								
				1.37	4	SS	45								
					5	SS	55								
					6	SS	50/0.07								
				248.32											
5		END OF BOREHOLE AUGER REFUSAL		4.88											
		NOTES: 1. Groundwater encountered during drilling at a depth of 1.5 m below ground surface June 17, 2016. 2. Water level measured in hollow stem augers at a depth of 2.0 m below ground surface upon completion of drilling, June 17, 2016. 3. Groundwater level measured in monitoring well at a depth of 1.16 m below ground surface, July 4, 2016.													

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DEPTH SCALE

1 : 50



LOGGED: JZL

CHECKED: EW

PROJECT: 1648668  
 LOCATION: N ; E

# RECORD OF BOREHOLE: 16-17

SHEET 1 OF 1

BORING DATE: June 17, 2016

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. +	rem V. ⊕	Q - ●			U - ○
0	CME55 Rubber Track 108mm Solid Stem Auger	GROUND SURFACE		252.90													
		TOPSOIL FILL		0.00													
		FILL - (CL) SILTY CLAY, trace sand, trace gravel, organics inclusions; dark brown; cohesive, w>PL, firm		0.30	1	SS	7										
1		(CL) SILTY CLAY; brown, becoming grey below 1.8 m; cohesive, w>PL, very stiff to firm		0.76	2	SS	16										
2					3	SS	14										
3				4	SS	7											
4		(ML) sandy SILT, some gravel; grey (TILL); non-cohesive, moist, compact		3.35	5	SS	28										
		- Spoon bouncing at a depth of 4.27 m END OF BOREHOLE SPOON REFUSAL		4.27													
5		NOTES: 1. Groundwater encountered during drilling at a depth of 3.4 m below ground surface June 17, 2016. 2. Water level measured in open borehole at a depth of 1.5 m below ground surface upon completion of drilling, June 17, 2016.															

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PROJECT: 1648668  
 LOCATION: N ; E

# RECORD OF BOREHOLE: 16-18

SHEET 1 OF 1

BORING DATE: June 17, 2016

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	SHEAR STRENGTH				WATER CONTENT PERCENT					
							20 40 60 80		nat V. + rem V. ⊕ ⊙		10 <sup>-6</sup> 10 <sup>-5</sup> 10 <sup>-4</sup> 10 <sup>-3</sup>		W <sub>p</sub> W W <sub>i</sub>			
0		GROUND SURFACE		253.80												
		TOPSOIL FILL		0.00												
		FILL - (CL) SILTY CLAY, trace sand, organics inclusions; brown; cohesive, w<PL, firm to stiff		253.50	1A	SS	7									
					0.30	1B										
1					2	SS	9									
		(ML) sandy SILT, some gravel; brown, oxidation staining; non-cohesive, moist, compact		252.43												
				1.37	3	SS	29									
2		(Cl) SILTY CLAY; brown; cohesive, w>PL, stiff		251.67												
				2.13	4	SS	11									
3		(ML) sandy SILT to (SM) SILTY SAND, some gravel; brown, becoming grey at 4.88 m (TILL); non-cohesive, moist to wet at 4.04 m, dense to very dense		250.90												
				2.90	5	SS	37									
4																
5					6A	SS	39									
					6B											
6																
				247.58	7	SS	50/0.13									
				6.22												
7		END OF BOREHOLE														
		NOTES: 1. Groundwater encountered during drilling at a depth of 3.4 m below ground surface June 17, 2016. 2. Water level measured in open borehole at a depth of 1.5 m below ground surface upon completion of drilling, June 17, 2016.														
8																
9																
10																

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DEPTH SCALE  
1 : 50



LOGGED: JZL  
CHECKED: EW

PROJECT: 1648668

# RECORD OF BOREHOLE: 16-19

SHEET 1 OF 1

LOCATION: N ; E

BORING DATE: June 17, 2016

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕ ⊖		Q - U - ⊙				Wp	
0		GROUND SURFACE															
0.00		FILL - (SW-GW) SAND and GRAVEL, trace to some fines; brown; non-cohesive, dry FILL - (CL) SILTY CLAY, trace to some sand, trace gravel; dark brown; cohesive, w>PL, stiff to firm	[Cross-hatched pattern]	0.00													
0.15	1			SS	9												
1		(CL) SILTY CLAY, trace to some sand; brown; cohesive, w>PL, very stiff	[Diagonal hatched pattern]	1.37													
	2			SS	4												
2		(SM) SILTY SAND, some gravel to gravelly; brown, becoming grey below 5.49 m (TILL); non-cohesive, moist, wet below 5.49 m, dense to very dense	[Stippled pattern]	2.13													
	3			SS	17												
3	CME55 Rubber Track 108mm Solid Stem Auger			2.13													
				4	SS	74											
				5	SS	38											
4		- Auger grinding from 5.5 m to 6.1 m	[Stippled pattern]	5.5													
	6			SS	88/ 0,23												
6		- Auger grinding from 5.5 m to 6.1 m	[Stippled pattern]	5.5													
	7			SS	50/ 0,05												
6.15		END OF BOREHOLE AUGER REFUSAL		6.15													
7		NOTES: 1. Groundwater encountered during drilling at a depth of 4.6 m below ground surface June 17, 2016. 2. Groundwater level measured in monitoring well at a depth of 3.49 m below ground surface, July 4, 2016.															

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DEPTH SCALE

1 : 50



LOGGED: JZL

CHECKED: EW

PROJECT: 1648668  
 LOCATION: N ; E

# RECORD OF BOREHOLE: 16-20

SHEET 1 OF 1

BORING DATE: June 17, 2016

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. rem V.		Q - U				Wp	
0		GROUND SURFACE															
		FILL - (SW-GW) SAND and GRAVEL, trace fines; brown; non-cohesive, dry, compact	[Cross-hatched pattern]	0.00	1A	SS	30										
		FILL - (ML-CL) CLAYEY SILT to SILTY CLAY, trace sand, trace gravel, organics inclusions to 0.69 m; brown, organic staining to 0.69 m; cohesive, w<PL, firm to stiff	[Diagonal line pattern]	0.51	1B												
1					2	SS	8										
		(Cl) SILTY CLAY, trace sand; brown; cohesive, w>PL, stiff	[Vertical line pattern]	1.37													
2					3	SS	9										
					4	SS	9										
3					5	SS	11										
4																	
		(SM) gravelly SILTY SAND; grey; non-cohesive, wet, dense to very dense	[Stippled pattern]	4.11													
5					6	SS	43										
6																	
		- Spoon bouncing at a depth of 6.45 m		6.45	7	SS	80/0.2										
7		END OF BOREHOLE SPOON REFUSAL															
8		NOTES: 1. Groundwater encountered during drilling at a depth of 4.1 m below ground surface June 17, 2016. 2. Water level measured in open borehole at a depth of 4.1 m below ground surface upon completion of drilling, June 17, 2016. 3. Borehole caved to a depth of 4.9 m below ground surface upon completion of drilling, June 17, 2016.															
9																	
10																	

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DEPTH SCALE  
1 : 50



LOGGED: JZL  
CHECKED: EW

PROJECT: 1648668  
 LOCATION: N ; E

# RECORD OF BOREHOLE: 16-21

SHEET 1 OF 1

BORING DATE: June 17, 2016

DATUM:

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	nat V. + Q - ●	rem V. ⊕ U - ○	Wp			W
0		GROUND SURFACE															
0.76		FILL - (SW-GW) SAND and GRAVEL, trace non-plastic fines; brown; non-cohesive, moist to dry, dense		0.00	1	SS	42										
1.37		(Cl) SILTY CLAY, trace sand; brown, oxidation staining; cohesive, w>PL, stiff		0.76	2	SS	12										
1.37		(ML) gravelly sandy SILT to (SM) SILTY SAND, cobbles and boulders; brown, becoming grey at 4.04 m (TILL); non-cohesive, moist, becoming wet below 4.65 m, compact to very dense		1.37	3	SS	14										
4.7		- Auger grinding on inferred cobble or boulder at 4.7 m			4	SS	44										
4.7					5	SS	36										
6.1		- Spoon bouncing at a depth of 6.1 m			6	SS	50/0.07										
6.1		END OF BOREHOLE SPOON REFUSAL		6.10	7	SS	38										
7		NOTES: 1. Auger refusal at 4.7 m. Borehole moved 2.0 m north and continued sampling below 4.7 m depth. 2. Groundwater encountered during drilling at a depth of 3.0 m below ground surface June 17, 2016. 3. Water level measured in hollow augers at a depth of 2.4 m below ground surface upon completion of drilling, June 17, 2016. 4. Groundwater level measured in monitoring well at a depth of 0.2 m below ground surface, July 4, 2016.															

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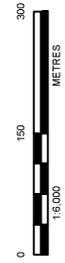
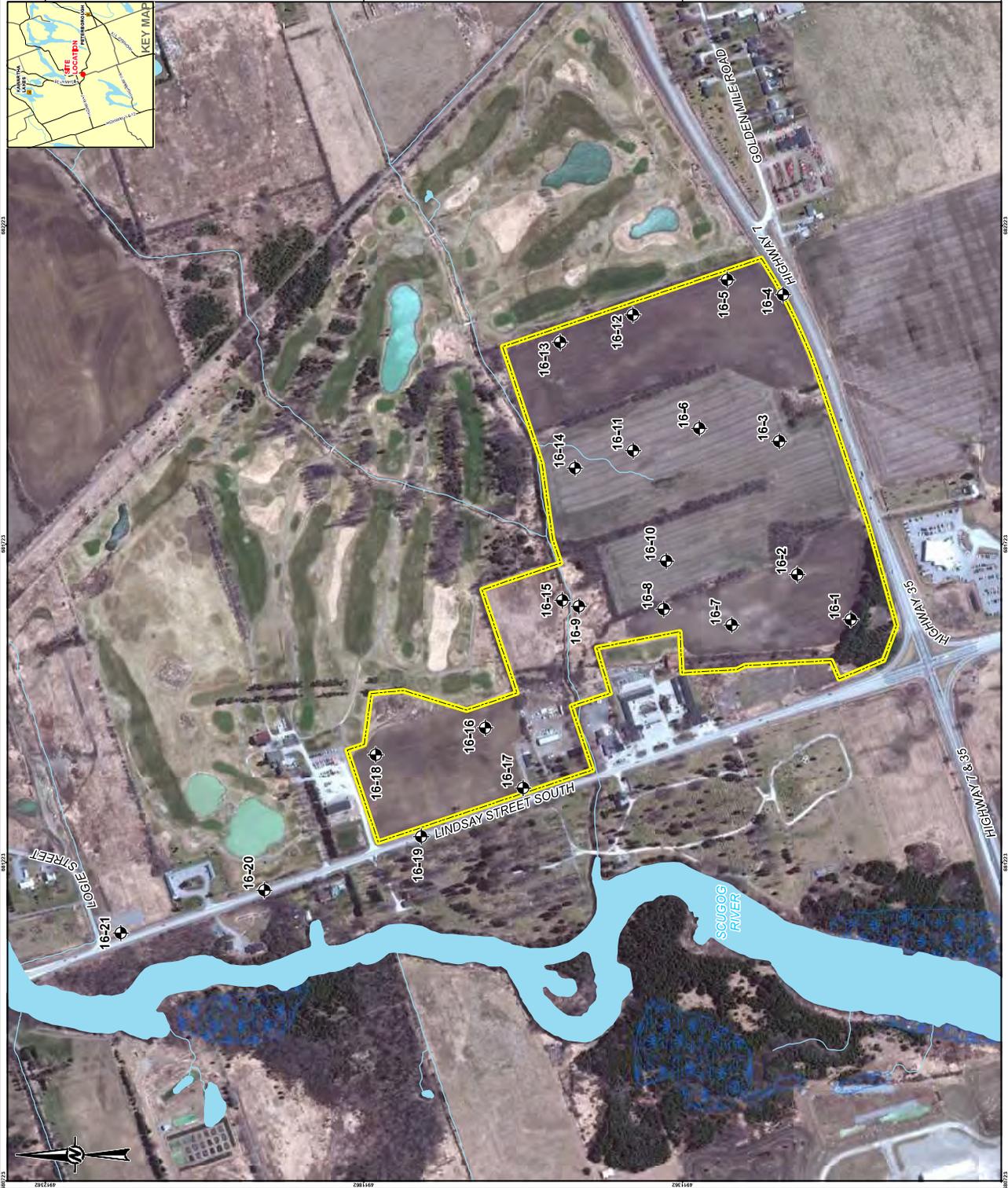






**LEGEND**

- ◆ APPROXIMATE BOREHOLE LOCATION
- WATERCOURSE
- APPROXIMATE SITE BOUNDARY
- WATERBODY
- WETLAND



**REFERENCES**

2016 CANADIAN NATIONAL BOREHOLE SERVICES DATA WITH US STEVENS  
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 PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17N

**CLIENT**  
**BROMONT HOMES INC.**

**PROJECT**  
 PRELIMINARY GEOTECHNICAL INVESTIGATION  
 PROPOSED COMMERCIAL DEVELOPMENT  
 BROMONT PROPERTY PARCELS 5, 6, AND 7, KAMARTHA LAKES, ONTARIO

**TITLE**  
**BOREHOLE LOCATION PLAN**

CONSULTANT	
YYYY/MM/DD	2016/07/26
DESIGNED	JT
PREPARED	JT
REVIEWED	EW
APPROVED	SEMP
CONTROL	REV.



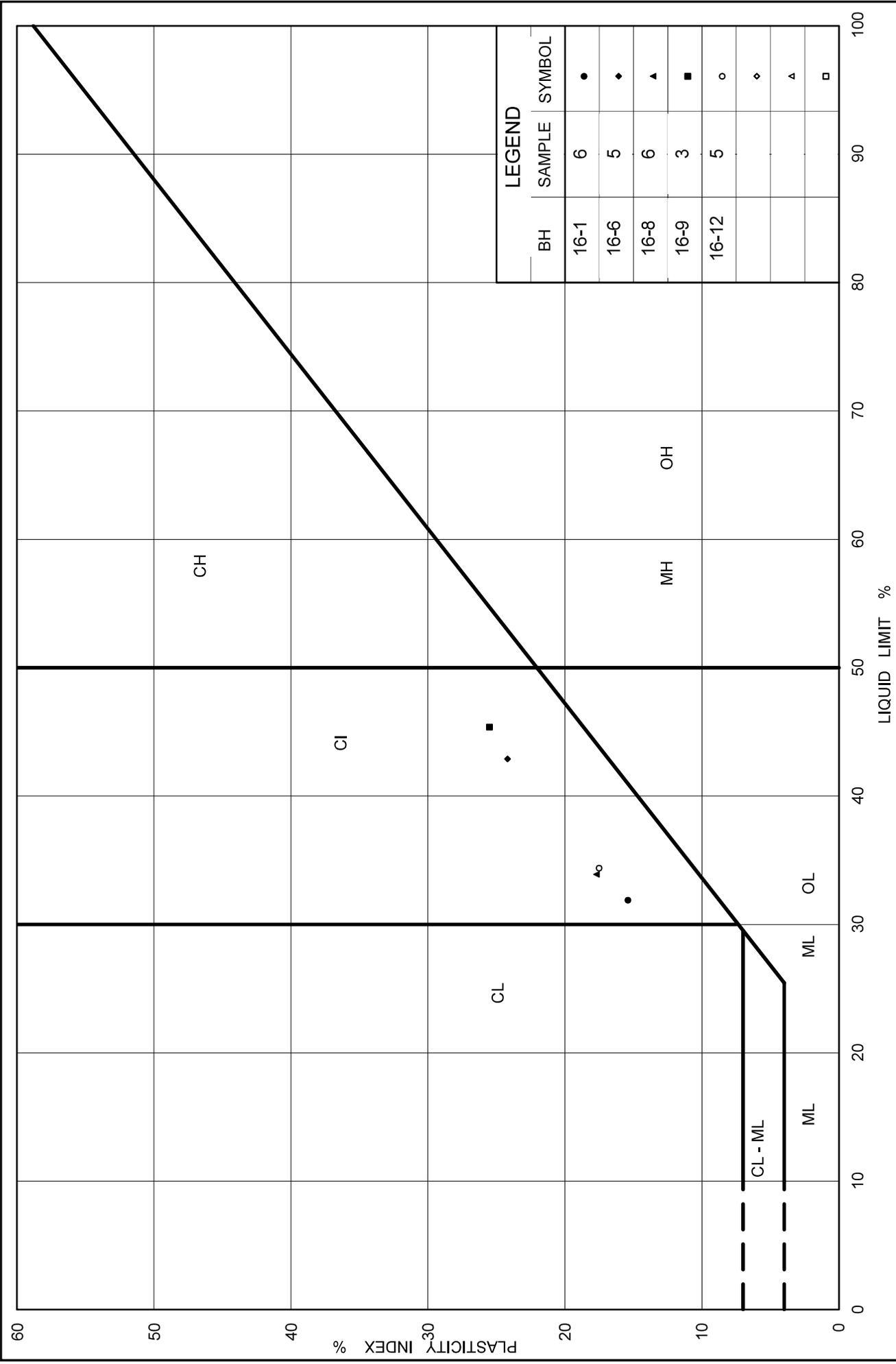


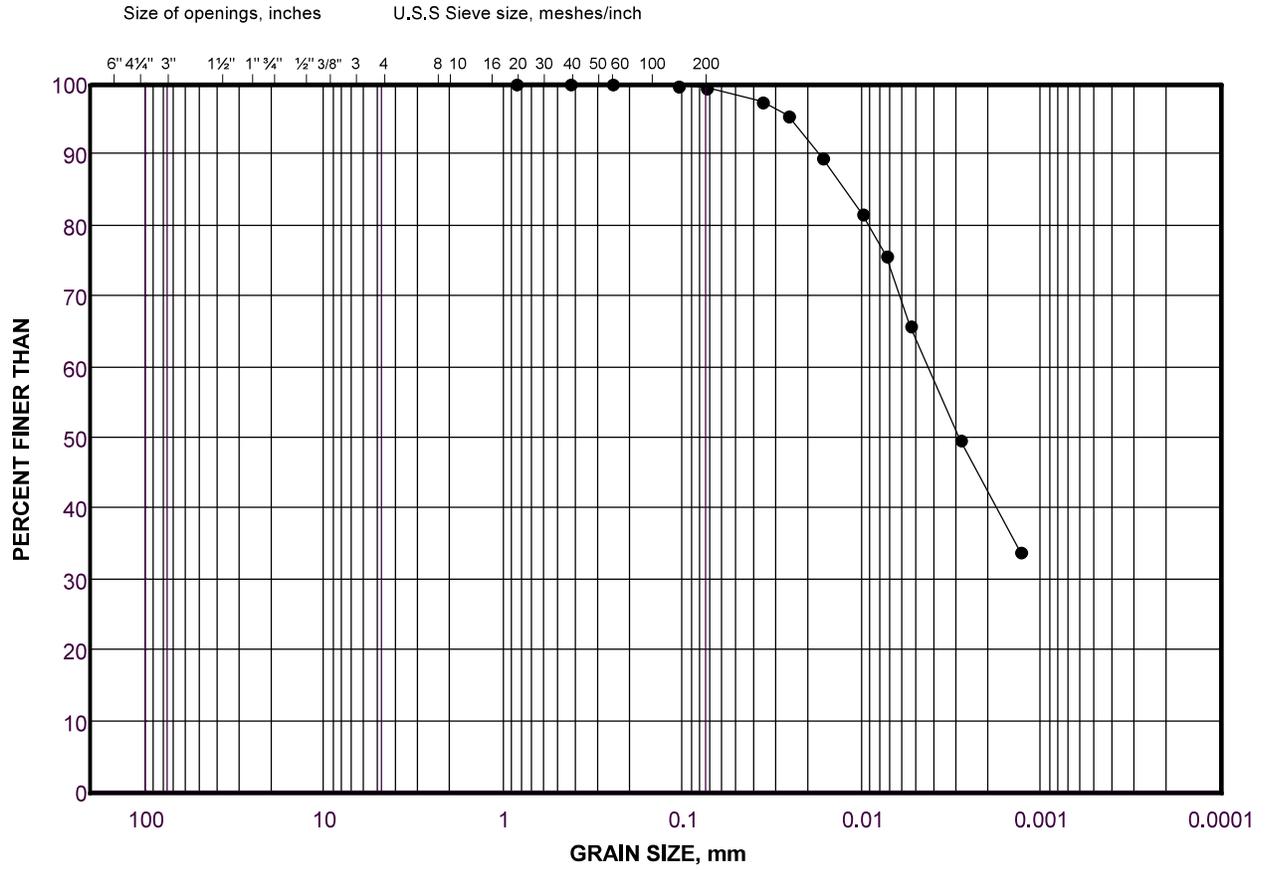
Figure No 3  
 Project No. 16-48668  
 Checked By: EW

**PLASTICITY CHART**  
 (CI) SILTY CLAY



# GRAIN SIZE DISTRIBUTION (C) SILTY CLAY

## FIGURE 4



<b>COBBLE</b>	COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY SIZES
<b>SIZE</b>	<b>GRAVEL SIZE</b>		<b>SAND SIZE</b>			<b>FINE GRAINED</b>

### LEGEND

SYMBOL	BOREHOLE	SAMPLE	DEPTH(m)
●	16-10	2	0.8 - 1.4

Project Number: 16-48668

Checked By: EW

**Golder Associates**

Date: 29-Nov-16







# **APPENDIX A**

## **Important Information and Limitations of This Report**



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## IMPORTANT INFORMATION AND LIMITATIONS OF THIS REPORT

---

**Standard of Care:** Golder Associates Ltd. (Golder) has prepared this report in a manner consistent with that level of care and skill ordinarily exercised by members of the engineering and science professions currently practising under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report. No other warranty, expressed or implied is made.

**Basis and Use of the Report:** This report has been prepared for the specific site, design objective, development and purpose described to Golder by the Client. The factual data, interpretations and recommendations pertain to a specific project as described in this report and are not applicable to any other project or site location. Any change of site conditions, purpose, development plans or if the project is not initiated within eighteen months of the date of the report may alter the validity of the report. Golder can not be responsible for use of this report, or portions thereof, unless Golder is requested to review and, if necessary, revise the report.

The information, recommendations and opinions expressed in this report are for the sole benefit of the Client. No other party may use or rely on this report or any portion thereof without Golder's express written consent. If the report was prepared to be included for a specific permit application process, then upon the reasonable request of the client, Golder may authorize in writing the use of this report by the regulatory agency as an Approved User for the specific and identified purpose of the applicable permit review process. Any other use of this report by others is prohibited and is without responsibility to Golder. The report, all plans, data, drawings and other documents as well as all electronic media prepared by Golder are considered its professional work product and shall remain the copyright property of Golder, who authorizes only the Client and Approved Users to make copies of the report, but only in such quantities as are reasonably necessary for the use of the report by those parties. The Client and Approved Users may not give, lend, sell, or otherwise make available the report or any portion thereof to any other party without the express written permission of Golder. The Client acknowledges that electronic media is susceptible to unauthorized modification, deterioration and incompatibility and therefore the Client can not rely upon the electronic media versions of Golder's report or other work products.

The report is of a summary nature and is not intended to stand alone without reference to the instructions given to Golder by the Client, communications between Golder and the Client, and to any other reports prepared by Golder for the Client relative to the specific site described in the report. In order to properly understand the suggestions, recommendations and opinions expressed in this report, reference must be made to the whole of the report. Golder can not be responsible for use of portions of the report without reference to the entire report.

Unless otherwise stated, the suggestions, recommendations and opinions given in this report are intended only for the guidance of the Client in the design of the specific project. The extent and detail of investigations, including the number of test holes, necessary to determine all of the relevant conditions which may affect construction costs would normally be greater than has been carried out for design purposes. Contractors bidding on, or undertaking the work, should rely on their own investigations, as well as their own interpretations of the factual data presented in the report, as to how subsurface conditions may affect their work, including but not limited to proposed construction techniques, schedule, safety and equipment capabilities.

**Soil, Rock and Ground water Conditions:** Classification and identification of soils, rocks, and geologic units have been based on commonly accepted methods employed in the practice of geotechnical engineering and related disciplines. Classification and identification of the type and condition of these materials or units involves judgment, and boundaries between different soil, rock or geologic types or units may be transitional rather than abrupt. Accordingly, Golder does not warrant or guarantee the exactness of the descriptions.



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## IMPORTANT INFORMATION AND LIMITATIONS OF THIS REPORT

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Special risks occur whenever engineering or related disciplines are applied to identify subsurface conditions and even a comprehensive investigation, sampling and testing program may fail to detect all or certain subsurface conditions. The environmental, geologic, geotechnical, geochemical and hydrogeologic conditions that Golder interprets to exist between and beyond sampling points may differ from those that actually exist. In addition to soil variability, fill of variable physical and chemical composition can be present over portions of the site or on adjacent properties. The professional services retained for this project include only the geotechnical aspects of the subsurface conditions at the site, unless otherwise specifically stated and identified in the report. The presence or implication(s) of possible surface and/or subsurface contamination resulting from previous activities or uses of the site and/or resulting from the introduction onto the site of materials from off-site sources are outside the terms of reference for this project and have not been investigated or addressed.

Soil and groundwater conditions shown in the factual data and described in the report are the observed conditions at the time of their determination or measurement. Unless otherwise noted, those conditions form the basis of the recommendations in the report. Groundwater conditions may vary between and beyond reported locations and can be affected by annual, seasonal and meteorological conditions. The condition of the soil, rock and groundwater may be significantly altered by construction activities (traffic, excavation, groundwater level lowering, pile driving, blasting, etc.) on the site or on adjacent sites. Excavation may expose the soils to changes due to wetting, drying or frost. Unless otherwise indicated the soil must be protected from these changes during construction.

**Sample Disposal:** Golder will dispose of all uncontaminated soil and/or rock samples 90 days following issue of this report or, upon written request of the Client, will store uncontaminated samples and materials at the Client's expense. In the event that actual contaminated soils, fills or groundwater are encountered or are inferred to be present, all contaminated samples shall remain the property and responsibility of the Client for proper disposal.

**Follow-Up and Construction Services:** All details of the design were not known at the time of submission of Golder's report. Golder should be retained to review the final design, project plans and documents prior to construction, to confirm that they are consistent with the intent of Golder's report.

During construction, Golder should be retained to perform sufficient and timely observations of encountered conditions to confirm and document that the subsurface conditions do not materially differ from those interpreted conditions considered in the preparation of Golder's report and to confirm and document that construction activities do not adversely affect the suggestions, recommendations and opinions contained in Golder's report. Adequate field review, observation and testing during construction are necessary for Golder to be able to provide letters of assurance, in accordance with the requirements of many regulatory authorities. In cases where this recommendation is not followed, Golder's responsibility is limited to interpreting accurately the information encountered at the borehole locations, at the time of their initial determination or measurement during the preparation of the Report.

**Changed Conditions and Drainage:** Where conditions encountered at the site differ significantly from those anticipated in this report, either due to natural variability of subsurface conditions or construction activities, it is a condition of this report that Golder be notified of any changes and be provided with an opportunity to review or revise the recommendations within this report. Recognition of changed soil and rock conditions requires experience and it is recommended that Golder be employed to visit the site with sufficient frequency to detect if conditions have changed significantly.

Drainage of subsurface water is commonly required either for temporary or permanent installations for the project. Improper design or construction of drainage or dewatering can have serious consequences. Golder takes no responsibility for the effects of drainage unless specifically involved in the detailed design and construction monitoring of the system.

At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

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## **APPENDIX E: Archeological Assessment**

**YORK NORTH ARCHAEOLOGICAL SERVICES INC.**

1264 Bathurst Street, Peterborough, Ontario K9H 6X8. Tel: 705-742-7301, email: ynas@cogeco.net



**A STAGE I-II ARCHAEOLOGICAL ASSESSMENT OF THE  
PROPOSED BROMONT LINDSAY SUBDIVISION/  
COMMERCIAL DEVELOPMENT: LOCATED IN PART OF LOTS  
16 & 17, CONCESSION 6, GEOGRAPHIC TOWNSHIP OF OPS,  
CITY OF KAWARTHA LAKES, ONTARIO.**



Prepared By: York North Archaeological Services Inc.,  
Under MTCS Issued Archaeological  
License No: P156, PIF P156-0255-2016,  
(Report Prepared by: Patricia A. Dibb,  
Gordon C. Dibb  
Licensee: Patricia Dibb

Type of Report: Original  
Development Project No.: None  
PIFs In the Surrounding Area: Include 2000-036-32, P156-012-2006, P156-132-2012,  
P156-0227-2014, (Site number (BbGq-22) Close by).  
*January 29, 2017*

## **EXECUTIVE SUMMARY**

This report details the rationale, methods and results of a Stage I-II archaeological assessment on a parcel of land proposed for development as a subdivision/commercial space in the southeast quadrant of the Town of Lindsay (former Township of Ops), City of Kawartha Lakes (in the former County of Victoria), Ontario. The study area consists of an irregular parcel of land, 35hectares (87 acres) in size which is located along the east side of Lindsay Street South in Part Lots 16 & 17, Concession 6, Geographic Township of Ops, City of Kawartha Lakes, Ontario.

In preparing an assessment of the archaeological potential of a property, the Ministry of Tourism, Culture and Sport (MTCS) requires that consulting archaeologists account for all features of a property that may have influenced past land use, making use of background research, an inspection of the property, and professional judgment. More specifically, archaeologists are required to assess the potential for the types of activities that would have resulted in the deposition of lasting traces in the archaeological record to have taken place on the property or portions thereof.

When evaluating a property, the Ontario Ministry of Tourism, Culture and Sport requires that consultant archaeologists account for all features present on the property that indicate archaeological potential, making use of background research, appropriate survey methodology and professional judgment.

In this study, a detailed documentary research program was employed to establish an accurate record of the property's archaeological and land use history. The objectives of the current assessment were to present information about the property's geography, history, previous archaeological fieldwork, and current land conditions. This involved an evaluation of the property's archaeological potential as well as providing recommendations for appropriate Stage 2 Property Assessment survey strategies and the subsequent Stage 2 assessment.

The study area has portions that are within 300m of the Scugog River and 100m of the Concession road, known as Lindsay Street South (Highway 35) and an unnamed stream. The land is level to slightly rolling in places. The rail line ran along the west edge of the study area and crossed over a concrete trestle with a date of 1924. An unnamed stream directs water through the Lindsay Golf Course, in a largely east to west direction exiting into the Scugog River to the west. There is a significant drop to the waterway more than 4m from the top of the bank to the water. There are portions of the study area that have undergone intensive and deep soil disturbance. These areas include a former gas station in the southwest corner of the study area along Highway 7. The farmer has provided documentation highlighting his activities to reclaim farm land in the area of the former barns on the property. This involved digging down 7 to 8 feet to bury the remnants of one barn and the bulldozing of another toward the smaller of the two green spaces, and down a distance of 12 inches. This has impacted the archaeological integrity of any archaeological resources that may have once been located there. There was a former garden center, house, garages and warehouse located north of the stream, which have

impacted the archaeological integrity of any archaeological resources in this area off Lindsay Street South. The house has since been removed by the developer. To the north of this area an additional commercial space now vacant has impact this area as well. There are gas lines from Lindsay Street South, east toward the structures on the property. In the northeast corner of the study area there are numerous back dirt piles likely dating from the construction phase of the Lindsay Golf and Country Club. While there are several archaeological sites on the west side of the Scugog River, there is only one on the east side, though it doesn't show up on the data search. Both shovel testing and pedestrian survey were conducted in the development area.

Based on the stage 1 background research and stage 2 assessment only a portion of the study area has potential for Prehistoric and historic archaeological resources with cultural value or interest. The stream through the Lindsay Golf and Country Club confirms a degree of poorly drained soils. The farmer's removal of barns associated with the southern farmsteads also confirms deep and intensive soil disturbance impacting the archaeological integrity of these farmsteads. His admission of burying the building debris, his installation of drainage tile and his having bulldozed the eastern barn across the field toward the small green space confirms deep soil disturbance in these areas.

The property while assessed as per the standards and guidelines at 5m intervals failed to demonstrate any archaeological resources of cultural value or interest. Further assessment is not warranted or required.

It is recommended that development not proceed before receiving confirmation from the Ministry of Tourism, Culture and Sport (MTCS) that the report has been reviewed and entered into the provincial register of reports, and all other government agencies have signed off. Should previously unknown or un-assessed deeply buried archaeological resources be uncovered during the site preparation, they may represent a new archaeological site and therefore be subject to Section 48(1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resource(s) must cease further work and engage a licensed archaeologist to carry out further archaeological fieldwork, in compliance with Section 48(1) of the Ontario Heritage Act. Any person discovering human remains must immediately notify the police and/or coroner and the Registrar of Cemeteries.

**PROJECT PERSONNEL:**

PROJECT DIRECTOR:	Patricia A. Dibb (P156)
PROJECT SUPERVISOR (S):	Patricia A. Dibb (P156)
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FIGURE PREPARATION:	Pat Dibb
REPORT PREPARATION:	Patricia A. Dibb, Gordon C. Dibb

**ACKNOWLEDGEMENTS**

YNAS would like to thank the following people for their assistance during fieldwork activities, and/or the preparation of this report:

Ministry of Tourism, Culture and Sport for granting access to the Archaeological sites database

Richard Holy, MCP, RPP	Planning Coordinator, Development Services (Planning Division, City of Kawartha Lakes)
Saverio Montemareno	Proponent (Bromont Homes)
Michael Bissett, MCIP, RPP	Bousfield Inc.
Dave Comery, VP	Ivan B. Wallace Ontario Land Surveyors Ltd.
The Farmer	(see Supplementary Document)

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## **1.0 PROJECT BACKGROUND**

### ***1.1 Development Context***

The Bromont Lindsay Subdivision/commercial development is ca. 35 hectares (87 acres) in size. Legally, the study area is described as Part of Lots 16 & 17, Concession 6, Geographic Township of Ops, City of Kawartha Lakes, Ontario (Figures 1 -14; Plates 1 – 43)

A Plan of Subdivision/commercial development triggered this archaeological assessment (see Development plan map, Figures 3 (a & b) & 4). The archaeological assessment was conducted at the pre-submission stage of the planning process. The PIF Number for this project is P156-0255-2016.

The Ontario Heritage Act makes provisions for the protection and conservation of heritage resources in the Province of Ontario. Archaeological assessments are part of an environmental review, which is intended to identify areas of heritage interest as specified in the Provincial Policy Statement. Heritage concerns are recognized as a matter of provincial interest in Section 2.6.2 of the Provincial Policy Statement.

Analyses involving a historic background research, physiological data of the land in question including Quaternary geological information, elevation, topography, drainage, soil types combine to give insight into the potential of recovering possible archaeological resources. This report was completed to conserve and preserve any archaeological resources for prior to development.

The subject property is located along the east side of the Scugog River and is accessed from an entrance located off Highway 7 at the south end of the study area.

The Stage I-II archaeological assessment of the subject property was undertaken as per the requirements of the Ontario Heritage Act, and the Planning Act, as well as the Ontario Ministry of Tourism, Culture and Sports (MTCS) New Standards and Guidelines for Consultant Archaeologists (2011).

As per the MTCS requirements, the landowner granted permission for access to the property and to remove and curate any artifacts collected. In addition, any documentation related to the archaeological assessment of the property (ie: field notes, maps, photographs, etc.) as well as any artifacts recovered will be curated by York North Archaeological Services Inc. until such time that arrangements for their ultimate transfer to Her Majesty the Queen in Right of Ontario, or another public institutions(s) can be made to the satisfaction of the land owner, MTCS, and/or any other legitimate interest group(s).

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The Stage I-II archaeological assessment described below was carried out on behalf of the project proponent, Saverio Montemareno (proponent). Michael Bissett, MCIP, RPP, of Bousfield Inc. has been the contact between YNAS Inc. and the project proponent.

The contract was awarded to YNAS Inc. on June 15, 2016. The Project Information Form (PIF) was submitted to the MTCS for review on June 17, 2016 and the MTCS PIF# P156-0255-2016 was received by YNAS Inc. on the same day.

Gordon C. Dibb prepared the historic background research and Patricia A. Dibb prepared the report. The field director was Patricia A. Dibb and Owen Laflamme.

During the project, written, verbal and electronic communications were conducted with Saverio Montemareno (project proponent), Michael Bissett (project planner), and Scott Wagstaff (Farmer).

## ***1.2 Historic Context***

The study area was ceded to the Crown by-way-of Treaty No: 20, which was negotiated with the Mississauga/Ojibway, at Port Hope, on November 5, 1818. The treaty resulted in the cessation of more than 1,590,000 acres of land located to the west of the Trent River, east of Lake Simcoe and south of Haliburton. The purchase price consisted of an annuity of £740 in trade goods "at the Montreal Price" (Johnson 1973:26).

Treaty No: 20 was negotiated with six Mississauga/Ojibwas chiefs: Buckquaquet (Chief of the Eagle Tribe), Pishikinse (Chief of the Rein Deer Tribe), Pohtosh (Chief of the Crane Tribe), Cahagahishinse (Chief of the Pike Tribe), Cohagagwin (Chief of the Snake Tribe) and Pininse (Chief of the White Oak Tribe) who resided in small family groups within the above areas (ITAS No: 20:48-49). By about 1830 there were enough First Nations families residing in Peterborough, Victoria and the eastern part of Ontario Counties to justify their settlement in two locations, Curve Lake in Smith and Hiawatha in Otonabee Townships.

Ops Township was surveyed into lots and concessions, as a prelude to settlement, by Duncan McDonnell in 1824-1825 (Winearls 1991:546). McDonnell was paid for his services, with the patent to 2,833 acres. Ops Township is bounded on the north by the Township of Fenelon, on the east by Emily, on the west by Mariposa and on the south by Manvers. The township consists of eleven concessions, approximately nine miles from west to east, and twenty-eight and one-half lots, or about eleven miles from south to north. The Scugog River divides the Township into approximate east and west halves. The Town of Lindsay is built almost in the center of the north half of Ops in Lots 19 to 22, Concessions 5 & 6 (Carr 1968:3).

The Town of Lindsay is built around a 400-acre parcel of land that was provided by the

Crown to William Purdy in 1834. The government contract awarding this 400-acre parcel (located in Lots 20 & 21, Concessions 5 & 6, Township of Ops) to William Purdy, and his two sons, entailed the construction of a ten-foot-high dam and a sawmill on the Scugog River in 1828 and a gristmill the following year. In 1829, high water levels during the spring run-off washed the newly constructed dam away. By 1830 the dam was repaired and the sawmill began operation. With the flooding after the 1829 washout, settlers living down river sustained a considerable amount of damage to their farmsteads. In 1844 local farmers attempted to destroy the milldam in Lindsay. Soon afterwards the Purdy's sold their 400-acre tract of land to Hiram Bigelow for \$10,000.00, after which they moved to Meaford and Eugenia Falls in Grey County (Tahiliani 1982:1).

The study area is located along the east side of the Scugog River in parts of Lots 16 and 17, Concession 6, Township of Ops, City of Kawartha Lakes (former County of Victoria). This parcel lies east of Lindsay Street South and is bounded to the south by Highway 7. There are entrances to the study area from both Highway 7 and Lindsay Street South.

Lot 16, Concession 6 (E ½ 100 acres), was patented by the Crown to John McArthur on December 24, 1847 (Service Ontario 2016). The N ½ of this lot had its title passed to John McArthur (likely his son) on September 13, 1860 for a consideration of \$1.00. McArthur on April 27, 1872 transferred the title to ½ acre from his holdings to the local school trustees (Figure 4). The younger McArthur obtained the title to the southeast quarter of the lot, again for \$1.00, in 1890. John McArthur Jr. is shown as owning the property in the Victoria County Rural Directory in 1892. Joseph [?]avies purchased the lot on March 30, 1906.

Joseph [?]avies sold the lot to Alexander Mitchell et ux on April 2, 1914 for \$7,100.00. In 1938 the land was purchased by the Crown and returned to the Mitchell family in 1946 for \$5,250.00. On February 7, 1957, the Director of the Veterans Land Act sold the E ½ of this lot to Leo John Fanning for \$5,200.00. The Fannings retained ownership of this land until 1990.

On June 24, 1846 Lot 16W, Concession 6, was patented by the Crown to Daniel Gifford (Services Ontario 2016). On July 5, 1848, by his attorney, John Hay sold the W ½ of this lot to William McDonnell. On October 8, 1849 William McDonnell sold the west Part of the west ½ (50 acres) of the lot to Patrick Duck, with McDonnell retaining the mortgage. On March 5, 1853 William McDonnell sold the east Part of the W (1/2) to Patrick Duck et ux. On March 5, 1853, the east ½ of the west ½ of the lot was sold by William McDonnell to Thomas Simons. On December 12, 1903 Thomas Simmons, unmarried sold the E ½ of the west ½ of the same lot to James Simons for \$4,000.00. Patrick Duck, widower, on August 18, 1908 sold his holdings within this lot to Michael Moriarity for \$2,900.00. In 1932 members of the Simons family sold their holding and premises to Michael Moriarity for \$2,700.00. On March 19, 1941 Michael Moriarty sold the W half of the lot to James Joseph Fanning for \$4,200.00. The Fannings turned the title to the lot over to the Directors of the Veterans Land Act for \$500.00.

Lot 17, Concession 6, was patented to Duncan McDonnell on March 30, 1826 (Services Ontario 2016). McDonnell was the person who surveyed Ops Township and this lot was part of his payment for services rendered. McDonnell sold the entire 200 acre parcel to Edward Meher (Meager) on July 9, 1847. There are multiple spellings for the family name in the Land registry documents. Edward Meher (Meager) et ux sold S ½ of the E ½ of Lot 17, Concession 6 to Michael Penrose on April 17, 1854. On January 7, 1865 Edward Meagher (Meager) purchased the SW ¼ of the lot from Michael Penrose for \$1,325.00. William Meagher et ux sold part of this lot to the Lindsay, Bobcaygeon and Pontypool Railway for \$900.00. Bridget Twohey in 1905 obtained the title to the W ½ and the NE ¼ (total 150 acres) of this lot for \$1.00 (this included the premises). On June 14, 1913, the Penrose estate sold their remaining portion of this lot to John Brown for \$2,010.00. On March 6, 1914 Bridget Twohey, widow and Margaret Meigher (Meager) sold part of their lands to the Catharine Murphy for \$8,000.00. Bridget Twohey sold part of the N ½ and SW ¼ to the railway for \$1,000.00. Kenneth and Elizabeth Brown sold the S/E ¼ and all the Railway lands for \$6,000.00. On September 7, 1955 Joseph Murphy et ux sold the N/W part of the lot and other land to Stanley Joseph Targon for \$6,000.00. Wagstaff Riverwood Ltd. purchased this land from LIN 8-5 Inc. on September 15, 1989.

### 1.3 *Archaeological Context*

A search of the Ministry of Tourism, Cultural and Sport's database has uncovered 9 archaeological sites within 1km of the current study area (MTCS 2016). There is a 10<sup>th</sup> BbGq-22 which is not shown in the data search, but is included here.

Watson Kirkconnell (1967:154) reported that Colonel George Laidlaw, one of Ontario's best-known early 20<sup>th</sup> century archaeologists, who lived in Victoria County, did not record prehistoric native occupations within the townships of Emily, Ops and Mariposa.

Carr (1968:16) recorded a Mississauga campsite known as "Onigahknig" located on the west half of Lots 8 & 9, Concession 6, near the first Purdy mill (unless these Lots are 18 & 19, Concession 6, they refer to a location in the south-central part of the township and well away from any major water source). An earlier site, possibly Iroquoian in affiliation, was found on the Calvert Farm, in Lot 7, Concession 9.

Since about 1993 several prehistoric archaeological sites have been recorded between Lindsay and Port Perry, largely along the west side of the Scugog River.

To the north of the bridge along Highway 7, between the Scugog River and Angeline Street, York North Archaeological Services Inc., recorded three historic sites (BbGq-7, BbGq-8 & BbGq-9) and 8 prehistoric archaeological sites/components (BbGq-7, BbGq-10, BbGq-11, BbGq-12, BbGq-13, BbGq-14, BbGq-15 & BbGq-24) between 1999 and 2006.

At the BbGq-24 site, which is the northernmost site in this prehistoric grouping, part of the base of a Late Paleo-Indian projectile point was found (YNAS 2006:8). A series of 1

x1 meter units were excavated over and around this find spot in 2006. The screen size used was 6mm. The find spot was subjected to intensified investigations being re-investigated at closer intervals of .5m. Six, one by one meter units were excavated, nothing further of either a prehistoric and/or historic nature was recovered.

The Ambrose (BbGq-7) site, which is located near the corner of Highway 7 and the Scugog River, includes both a mid-1850s pioneer site and an underlying prehistoric component (YNAS 2002:13). The artifacts recovered included blue and green edge wares, transfer prints in blue, and brown, and flow blue, sponge wares, refined white earthen wares, and dipt. In addition to domestic ceramics a quantity of coarse earthenwares, kaolin pipe fragments, container glass, iron nails both cut and wrought were recovered. A small quantity of prehistoric artifacts was also found consisting of one projectile point, flakes, a reduction fragment, an adze fragment and miscellaneous stone. A total of 12 prehistoric artifacts were found. The prehistoric artifacts are non-diagnostic and therefore cannot be assigned any specific cultural affiliation (YNAS 2002). Further assessment was recommended.

The BbGq-8 site consists of a sharpening stone of no specific cultural affiliation (YNAS 2002). No further assessment was recommended.

BbGq-9 is a historic site consisting of a small ceramic fragment with a "Wedgewood" makers mark. The second piece is a refined white earthenware fragment (YNAS 2002). No further assessment was recommended.

BbGq-10 is a single chert flake of no known cultural affiliation (YNAS 2002). No further assessment was recommended.

BbGq-11 is a single chert flake of no known cultural affiliation (YNAS 2002). No further assessment was recommended.

BbGq-12 consist of four chert pieces of debitage of no known cultural affiliation (YNAS 2002). No further assessment was recommended.

BbGq-13 has 23 artifacts consisting of lithics, native ceramics, and faunal material but not in any great quantity (YNAS 2002). There is no cultural affiliation that can be assigned to this cluster due to the absence of diagnostic materials. It is likely Middle Woodland. Further assessment was recommended.

BbGq14 consists of 29 artifacts made up of chert flakes, reduction fragments, fauna, native ceramics, and a conical lead fragment likely a fishing weight (YNAS 2002). No cultural affiliation can be assigned to this cluster due to the absence of diagnostic artifacts. This site is likely Middle Woodland. Further assessment was recommended.

BbGq-15 is a single isolated find of an adze fragment. There is no cultural affiliation that can be assigned to this find spot. No further assessment recommended.

Along the north side of Highway 7 on the west side of the Scugog River, at the Ambrose (BbGq-7) site, Carl Murphy excavated a Late Woodland, ceramic period site, which he

reported on in 2007.

At the southwest corner of the intersection of Highway 7 & 35, North Central Archaeological Services Inc. excavated a mid-late 19<sup>th</sup> century brick house on MTO property in 2011, which has a possible historic pottery component. Stage 4 was conducted at BbGq-22 in 2010. A total of 104, 1 x 1m units were excavated (Paauw 2014).

In 2012, under PIF PO54-091-2012 issued to Gordon Dibb, a Stages 1 & 2 archaeological assessment was conducted on another property for Bromont Homes (YNAS 2012b). Based on the distance to the Scugog River it had a high potential for the recovery of archaeological resources of either a prehistoric and or historic nature. No prehistoric and or historic cultural value or interest was found on the property.

Further north of the existing study area, YNAS conducted an additional Stage 1 assessment under PIF P156-132-2012 issued to Pat Dibb (YNAS 2012). This property had seen significant soil disturbance as the former site of the two rail lines that merged before crossing the Scugog River located to the west of the then study area. The Stage 1 reported significant past soil disturbance, sufficient to impact the archaeological integrity. No further work was recommended.

In 2014 under PIF P156-0227-2014 issued to Pat Dibb (YNAS 2014) YNAS conducted a Stage 1 on a parcel further north of the current study area. The property had been granted a pre-servicing agreement that predated the New Standards and Guidelines in 2011. The study area has been stripped and graded to such a degree that the archaeological integrity had been significantly impacted the then study area, such that Stage 2 was not warranted.

Table 1 below outlines the cultural chronology and characteristics associated with the different time periods of Ontario. Not all are found in the current study area. Absence should not be interpreted as not ever having been there but is rather a reflection of the lack of previous research in the area.

PERIOD	SUB-PERIOD	GROUP	DATE RANGE	COMMENTS
EARLY PALAEO	FLUTED POINT	GAINNEY	11,000-10,700 BP	SOME BIG GAME &
		CROWFIELD	10,700-10,400 BP	HERD ANIMALS SUCH AS CARIBOU, ARCTIC
LATE PALAEO		HOLCOMBE	10,300-10,000 BP	FOX AND PTARMAGAN
		MADINA	10,200-9,800 BP	
		HI-LO	10,000-9,500 BP	
EARLY ARCHAIC	BIFRICATE BASE & SERRATED	KIRK	10,000-8,000 BP	SMALL NOMADIC HUNTING GROUPS SOME GATHERING
		STANLEY		
MID ARCHAIC		LAURENTIAN	8,000-4,000 BP	TERRITORIAL DIVISIONS
LATE ARCHAIC		LAMOKA	4,500-3,700 BP	GROUND STONE TOOLS
	BROADPOINT	GENESSEE	3,800-3,400 BP	
		CRAWFORD KNOLL	3,500-2,500 BP	
		GLACIAL KAME	2,100 BP	ELABORATE BURIALS WITH RED OCHRE
WOODLAND	EARLY	MEADOWOOD	3,000-2,400 BP	CERAMICS INTRODUCED
		RED OCHRE	3,000-2,500 BP	RED OCHRE BURIALS
	MIDDLE	POINT PENINSULA	2,400-1,500 BP	LONG DISTANCE TRADE
		PRINCESS POINT	1,500-1,200 BP	EARLY HORTICULTURE
	LATE	PICKERING	1,200-700 BP	VILLAGES & AGRICULTURE
		UREN	700-650 BP	LARGER VILLAGES
		MIDDLEPORT	650-550 BP	
		HURON	600-350 BP	VILLAGE WARFARE
HISTORIC	EARLY	ODAWA	300-125 BP	SOCIAL DISPLACEMENT
		OJIBWAY	300-125 BP	CONTACT, EURO-CANADIAN
	LATE	EURO-CANADIAN	225-PRESENT	EUROPEAN FUR TRADE, SETTLEMENT

Table 1 Cultural chronology of southern Ontario.

### **1.3.1 *Environmental (Location) Context***

The study area is in Part Lots 16 and 17, Concession 6, Ops Township, which is within the southeastern quadrant of the Town of Lindsay. The property is 35 hectares (87 acres) in size.

### **1.3.2 *Bedrock and Quaternary Geology***

The Ordovician bedrock in Ops Township consists of two formations; the Lindsay Formation being closest to the surface and the Verulam Formation, which underlies the Lindsay rocks (ARIP 016: 11, Liberty 1969, Figure 5). The older Verulam Formation rocks consist of fossiliferous, pure to argillaceous limestones and interbedded shale. This rock is not resistant to erosion and commonly weathers to rubble. Lindsay Formation rocks are described as fine-Crystalline, rubbly, nodular, weathered limestone (Dolar-Mantuani 1975). The study area is in the Peterborough Drumlin field (Figure 7).

These Middle Ordovician rocks were laid down about 490 million years ago (Freeman 1979).

The retreat of the Lake Simcoe Lobe of the Wisconsin glacier, about 14,000 to 12,000 years ago, was largely responsible for the creation of most of the physiographic features that dominate the landscape of the Kawartha Region, as it is known today. As the lobes of glacial ice receded, large melt-water lakes formed between the ice and the recently uncovered lands to the south. With the opening of the Kirkfield Outlet about 10,400 ybp, the Kawartha Lakes system was created as the path of the first major outflow of glacial melt waters, into the Lake Iroquois (Ontario) basin, which in turn drained into the Atlantic Ocean by an outlet at Rome, New York. Prior to the opening of the Kawartha drainage system, melt water from the Wisconsin ice sheet drained by-way-of the Mississippi through an outlet at the south end of Lake Huron (Chapman and Putnam 1974; Dreimanis 1977).

The region in which the study area is located is covered with a drift thickness of 15m in the southern part of Ops township (ARIP 016: 11). The study area is located at the north edge of a clay plain (Figure 7). The surficial geology shows that the study area sites in an area with silt and clay (Gravenor 1957, Figure 8).

### **1.3.3 *Topography***

The elevation of the proposed development area increases from the south to north and west to east. Along the southwest edge of the study area the elevation is 255masl and increases to 259 further east along Highway 7 (Figures 3 (b), 10 (area1)). The large western green space north of Highway 7 has elevations between 255- and 256m asl (Figures 3 b, 10 (area 2)). The smaller green space has an elevation of 258m asl (Figure 3 b, 10 (area 3)). Along the north edge of the eastern most field the elevation is 254m asl. Near the hotel it is 254m asl. In the small back field the elevation is 253m asl. Along the Creek that crosses under Lindsay Street South the elevations increase from 250-253m asl over a very short distance making access to the water very hazardous (Figure 3 b, Plates 21, 28). The small white house and buildings seen in Plates 17-20, 22-27, has elevations

in 254m asl range. The north field has elevations in the 256m asl range along the north edge of the field (Figures 3 a, Plates 21, 43).

#### **1.3.4 Drainage**

At its closest, the study area is less than 125 meters from the Scugog River (Figures 1-14). The Scugog River drains northward into Sturgeon Lake, which is part of the Trent system. Sturgeon Lake, in turn, drains to the east-southeast into Lake Ontario at Trenton. There is an unnamed stream which bisects the study area and drains the lands tied up with the Lindsay Golf and Country Club. This stream is shallow and stagnant with no appreciable flow. The rail trestle has a date of 1924 (Plates 41-41).

Poor drainage in the southern portion of the township, near the Scugog River has led to the development of extensive marshes (ARIP 1980: 10).

#### **1.3.5 Soils**

The soil type associated with the study area belongs to the Solmesville (Soel) clay loam series (Figure 9). "These soils have gently to very gently sloping topography resulting in imperfect drainage conditions within the soil profiles" (Gillespie and Richards 1957:35-36. OSS No. 25). The greatest acreage of the Solmesville Soils mapped in the county are found in Mariposa and Ops Townships. There are no sand deposits in the study area (Figure 6).

Solmesville clay loam is a calcareous clay overlain with till. These soils have a gently to very gently sloping topography resulting in imperfect drainage conditions within the soil profiles. Generally, there is at least a foot of lacustrine clay over stony till. Slight elevations occur in many fields where the clay deposit is very thin and stones appear on the surface. The drainage is imperfect, and the profile development is characteristic of Grey-Brown Podzolic soils. These soils are somewhat inferior to Waupoos series soils because of drainage, however they are normally capable of producing good crops of spring grains, hay and ensilage corn. In the past they have been used to produce large quantities of clover (Gillespie and Richards 1957:35-36 OSS No. 25).

#### **1.3.6 Vegetation**

Much of the study area is currently used for agricultural use. The green spaces along Highway 7 represent former farmsteads that have been abandoned (Figures 10-14, Plates 1-43). There is a central portion of the study area that has never been opened for agricultural use, being as it is poorly drained (Figure 12 (Green Area)). The grasses in this area are extremely tall (in excess of 5feet).

## **2.0 ARCHAEOLOGICAL POTENTIAL**

In preparing an assessment of the archaeological potential of a property, MTCS requires that consultant archaeologists account for all features of a property that indicate archaeological potential, making use of background research, an inspection of the property and professional judgment. More specifically, archaeologists are required to

assess the potential for the types of activities that may have resulted in the deposition of lasting cultural traces in the archaeological record. The rationale used to arrive at these determinations is provided below and are based on the *MTCS 2011 Standards and Guidelines for Consultant Archaeologists*.

## 2.1 *Evaluating archaeological potential*

Section 1.3 of the *MTCS 2011 Standards and Guidelines for Consultant Archaeologists* outlines several criteria to be followed when evaluating the archaeological potential of proposed development properties (MTCS 2011:17-18).

The following are features or characteristics that indicate archaeological potential:

- Previously identified archaeological sites within a 1 km radius of the Study Area
- Water sources whether primary (lakes, rivers, creeks), secondary (intermittent streams, creeks, springs, marshes, and swamps)
- Features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or streams or channels indicated by a clear dip or swale in the topography, shorelines or drainage lakes or marshes, cobble beaches)
- Accessible or inaccessible shoreline (e.g., high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh)
- Elevated topography (e.g., eskers, drumlins, large knolls, plateau)
- Pockets of well drained sandy soil especially near areas of heavy soil or rocky ground
- Distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings.
- Resource areas, including food or medicinal plants, scarce raw materials, early Euro-Canadian industry (fur trading, logging, prospecting, mining).
- Areas of early Euro-Canadian settlement, including:
  - Places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks
  - Early historical transportation routes (e.g., trails, passes, roads, railways, portage routes).
  - Property listed on a municipal register or designated under the *Ontario Heritage Act* or that is a federal, provincial or municipal historic landmark or site.
  - Property that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations.

## **2.2 *Determining if archaeological potential has been removed***

Section 1.3.2 of the *MTCS 2011 Standards and Guidelines for Consultant Archaeologists* outlines several features to be considered when determining if the archaeological potential of a property has been removed, or “disturbed” (MTCS 2011:18-19). Archaeological potential can be determined not to be present for either the entire property or a part(s) of it when the area under consideration has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources (MTCS 2011:18).

The following are features that indicate archaeological potential has been removed:

- Quarrying
- Major landscaping involving grading below topsoil
- Building footprints
- Sewage and infrastructure development

Archaeological potential is not considered to have been removed when:

- Minor grading or landscaping (i.e. agricultural cultivation, gardening) have occurred
- There is documented potential for deeply buried intact archaeological resources beneath land alterations, or where it cannot be clearly demonstrated through background research and property inspection that there has been complete and intensive disturbance of an area

Where complete disturbance cannot be demonstrated in Stage 1, it is necessary to undertake a Stage 2 assessment.

## **2.3 *Features indicating archaeological potential within the study area***

The following are features or characteristics that indicate archaeological potential within the Study Area (Figures 11). See below for a full description of all features of archaeological potential found within the Study Area.

- There are 10 known archaeological sites within a 1 km radius of the Study Area.
- Part of the study area is situated along a secondary water sources (Figure 11).
- There are features indicating past water sources (e.g., Scugog River (current) and the path of an unnamed stream, but no glacial lake shorelines, are associated with the Study Area (Figure 11).
- There is no direct shoreline access associated with the study area, and there are no areas off-site that have elevated topography.
- The Study Area is situated in a Clay plain, with clay loam (Figures 7). The soil series is Solmesville Clay Loam (Figure 9).
- There are no distinctive landforms, special or spiritual places, waterfalls, rock outcrops, caverns, mounds, or promontories and their bases associated with the

Study Area. The study area generally falls within the Peterborough Drumlin field (Figure 7)

- There are no known food resources, which could have come from the Study Area. Medicinal resources are not known, scarce raw materials or early Euro-Canadian industry (fur trade, logging, prospecting or mining) are not known for the Study Area.
- There is evidence of early Euro-Canadian settlement (rail lines,) along the west edge of the Study Area based on historic records and early air photographs (Figures 8-12). There are no wharfs or docks.
- Lindsay Street is an early historical transportation route (e.g., trails, passes, roads, railways, portage routes). The farmsteads associated with the Lot 16 Concession 6 E and West is located along the north edge of Highway 7 were patented in 1847 and 1848.
- The property is not listed on a municipal register or designated under the *Ontario Heritage Act* or as a federal or provincial historic landmark or site.
- There are no local histories or informants that have identified possible archaeological sites, historical events, activities or occupations inside the current Study Area. The Wagstaff family ran a brickyard south west of the intersection of Lindsay Street and Highway 7. The brickyard was opened in 1911. A Stage 4 archaeological assessment was conducted at this location.

Figure 11 shows the potential for the presence of significant archaeological resources within portions of the study area based on the Standards and Guidelines for consultant archaeologists (2011).

The archaeological potential for the study area is high per the Ministry of Tourism, Culture and Sports New Standards and Guidelines (2011).

- The proximity of the study area to a primary water source has generated a Stage 2 assessment (Standards and Guidelines, Section 1.3.1, pp. 17-18);
- The proximity of the study area to previously identified archaeological sites will generate a Stage 2 assessment (Standards and Guidelines, Section 1.3.1, pp. 17-18).

One of the main environmental features that promote the prehistoric archaeological potential is the proximity to a primary water source (the Scugog River). This feature influences the archaeological potential across the study area that falls within 300 meters inland (Standards and Guidelines (2011) (Section 1.3.1, p.17 and Section 2.1.1, p. 30). The Scugog River could have been used to collect water for use by both prehistoric occupants and later Euro-Canadian Settlers. Access to both faunal and floral resources associated with the Scugog River could have influenced settlement. Additionally, the proximity of the study area to known archaeological sites also enhances the archaeological potential of the property. Poorly drained soils would not be as advantages to settlement by both prehistoric and or historic occupants.

#### *2.4 Features that indicated that archaeological potential has been removed.*

Under section 1.3.2 of the standards and guidelines archaeological potential can be claimed to be removed if the archaeological integrity has been impacted by deep and intensive soil disturbance. Archaeological potential is not considered to have been removed due to:

- Minor grading or landscaping (i.e. agricultural cultivation, gardening) have occurred.
- There is documented potential for deeply buried intact archaeological resources beneath land alterations, or where it cannot be clearly demonstrated through background research and property inspection that there has been complete and intensive disturbance of an area.

The following are features that indicate archaeological potential has been removed:

- Quarrying: there has not been any quarrying done within the study area.
- Major landscaping involving grading below topsoil. There has been deep and intensive soil disturbance in the former farmhouses and barns (Figures 10-11, 14). An encounter with the current farm operator has revealed that there have been intensive and deep land alterations near the former farm buildings (houses and Barns, and sheds, along the south edge of the current study area (Figures 10 (areas 1- 3), 13, 14 (Supplementary Document). In an email sent to YNAS the farmer outlined some of the activities that have gone on that have impacted the archaeological integrity of any archaeological resources on portions of the property. In his e-mail to YNAS he outlined his efforts to reclaim the land on which the former barns stood Supplementary Document (Figure 14). A fire destroyed the western most barn leaving a shell of burnt timbers and stone foundation (Figures 10,11,14, Area 2). He has stated that he excavated an 8 foot deep hole and buried the remains of the barns. He included a map illustrating his removal limits (Figure 14, area 2 & 3). He has also confirmed that he installed drainage tile on the west side of the western most barn located in the western green space (his figure, YNAS Figure 14). He has stated that he was not involved with the removal of the Brick houses located within both the large and small green spaces off Highway 7. On these he could not offer any further information, despite having worked this farm over the last 20 to 25 years. The barn tied up with the eastern most (small green space) he did confirm, was dismantled and pushed toward the eastern edge of the smaller green space and piled within it (by bulldozer Figures 10 -11 (area 3), 14). In this area, he claims he excavated down 12 inches to remove any traces of the barns, and thereby protecting his farm machinery from damage when he next plowed. A former Texaco gas station was in the small asphalt area in the southwest corner of the study area (Figures 10, 11, (area 1), Plates 2-4). There is no evidence of any structures in this area, only asphalt at the surface overlaying a fine sand base.
- The former rail line that ran along the west edge of the study area, ran over an area of poorly drained soil, which caused the construction of the rail trestle over

the unnamed stream that flows into the Scugog River further to the west (Figures 10-13, Plates 41-42).

- **Building footprints** There are currently buildings on the property at the north end of the study area off Lindsay Street South (Figures 10-13, Plates 16-20, 22-23, 26-27). One is a white sided house and garage that have since been removed by the developer. There is a well at the back of this structure. A warehouse and concrete soil bays are found to the east of this former residential building (Figure 13). At the back of this garden operation is a large area that has been stripped below topsoil with the soil banked around the perimeter (Figure 13, Plates 14, 16).
- In addition, there is an unoccupied commercial building with a long driveway directly north on Lindsay Street South (Figure 13). This building has an underground gas line (up from the road) and compacted gravel driveway and concrete parking pad on the east side of the building. The two buildings on Lindsay street would have been hooked up to town water and sewer. The gasline runs north on the east side of Lindsay Street South.
- Near the existing Lindsay Golf and Country Club and the northern agricultural field there is a small parcel that has been used to dispose of large quantities of back dirt. This area is within the combined 300m high potential area from the Scugog River within the 100m from the concession road (Lindsay Street South) and within 300m of the unnamed stream. This places it in the high potential area.
- Sewage and infrastructure development. There are sewage or infrastructure for this parcel of land that included the gas line that runs along the east side of Lindsay Street South, and the hook up to city water and sewage on Lindsay Street South.

### **3.0 STAGE 1 RECOMMENDATIONS FOR STAGE 2**

Based on background research, the study area has potential for the discovery of prehistoric archaeological resources. The potential for the discovery of historic archaeological resources is moderate, due to the distance from potable water and the presence Lindsay Street South and Highway 7 as mapped in the Belden (1881) Illustrated Historical Atlas for Ops Township and the degree of deep and intensive soil disturbance confirmed by the farmer.

Based on the historic background search, the physiological makeup of the subject property and a search within the MTCS database, the Stage I analyses suggest a high potential for the recovery of archaeological resources; Stage II is required.

The study area is to the east of Lindsay Street South, which is considered an historic transportation route and under section 1.3.1 in the Standards and Guidelines for Consultant Archaeologists (2011), this is considered a feature, which suggests a higher potential for the recovery of archaeological resources within 100m of it.

Another feature near this parcel of land is the Scugog River. This river is a primary water source and as such raises the potential of locating archaeological resources of both a historic and prehistoric nature. This river is potable, navigable and near the parcel of land much of which is within 300m (Figures 2-14). The Standards and Guidelines for

Consultant Archaeologists requires that all lands within 300m of a primary water source be assessed through pedestrian survey or shovel testing when plowing is not possible.

This property is relatively level and could support settlements of either a prehistoric or historic nature. The soil type is a Solmesville clay loam and is found on top of the Lindsay Formation limestone, which is above the Verulam Formation limestone. The train trestle dated 1924 over an unnamed stream demonstrates the poorly drained soils in the area.

A search of the MTCS database revealed 10 historic and prehistoric sites most of which are located on the western side of Scugog River. The BbGq-22 Curtin site located in the southwest corner of the intersection of Lindsay Street South and Highway 7 does not show on the data search for this study area. The requirement from the MTCS is to document any known site(s) within a 1-kilometre radius.

#### **4.0 STAGE 2 PROPERTY ASSESSMENT METHODOLOGY**

The Stage 1 and Stage 2 assessments were done concurrently. The shovel testing was done between July 11 and 22, 2016 and the pedestrian survey was done on October 29, 2016. The Stage 2 survey strategy involved a shovel test survey and pedestrian survey at 5 meter intervals. The Stage 2 assessment was conducted under clear and sunny skies with temperatures in the high 80's and 90's. The pedestrian survey portion of the assessment was done under cloudy skies but still with very good visibility. The shovel test pits, were 30 cm in diameter, were excavated 5 cm into subsoil with the fill screened through 6mm hardware mesh. Each test pit was examined for stratigraphy and backfilled. Each test pit's fill was screened over plastic tarps to minimize damage to the lawns and to remove any liability to the current owner.

Figure 12 shows the locations surveyed and the methods employed for each. The location and directions of the plates for this report can be found in Figure 13, represented by Plates 1- 43).

83.98 % of the property was Pedestrian surveyed at 5 meter intervals. Shovel testing was carried out on 13.59%, at 5m intervals. The area not assessed because of intensive and extensive soil disturbances that has impacted the archaeological integrity makes up 2.42% includes the north building area and asphalt pad in the southwest corner of the study area.

At the completion of the pedestrian survey, a chance encounter with the farmer has shed light on additional areas impacted by deep soil disturbance (Figures 10-11, Supplementary Document Figure 14). The farmer provided YNAS with a map and letter outlining his activities near the two abandoned farmstead along the south edge of the study area, accessed from Highway 7. While these areas were assessed at 5m intervals, nothing of archaeological significant was recorded.

## **5.0 STAGE 2 SURVEY RESULTS**

Throughout the course of the pedestrian survey and shovel testing only the occasional brick was located, owing to the houses and outbuildings having been removed post 1950 as seen in the early and more recent air-photographs (Figures 10-13). The mapping provided by the farmer indicates that the former barns were removed sometime around 10 to 15 years ago. He has stated that he was not involved in the removal of the former brick farm houses.

No evidence of the former foundations is present within any of the green spaces off of Highway 7 (Plates 1-13).

The green space in the southwest corner near the intersection of Highway 7 and Lindsay Street was the location of a former Texaco gas station (personal communication, the farmer (Figures 10-14 area 1). There is a large pad of asphalt in the area, but no evidence of any building foundations. This area is considered disturbed by deep and intensive land alterations that will have impacted the archaeological integrity of any archaeological resources.

The former farmstead locations are disturbed based on the farmer's email and map sent to YNAS. These areas were shovel tested but only revealed 20<sup>th</sup> century building debris, which was not retained.

## **6.0 STAGE 2 CONCLUSIONS**

The Stage 1 historic background research, a search of the MTCS database, physiographic information including geological data, soils data, topographic data, and drainage suggested there is potential for the recovery of archaeological resources. Stage II investigations, included pedestrian survey of the ploughed areas, and shovel testing the green spaces, at 5m intervals.

The Stage 2 archaeological assessment produced no archaeological resources of either a prehistoric and/or historic nature. No archaeological resources of cultural heritage value or interest were recovered.

The study area is within 300m of the Scugog River, 100m of the Concession road, known as Lindsay Street South (Highway 35) and within 300m of the unnamed stream. The land is level to slightly rolling in places. The rail line ran along the west edge of the study area and crossed over a concrete trestle with a date of 1924. The stream running through the Lindsay Golf Course, in a largely east to west direction exits into the Scugog River to the west. There is a significant drop to the waterway more than 4m from the top of the bank to the water. There are portions of the study area that have undergone intensive and deep soil disturbance. These areas include a former gas station in the southwest corner along Highway 7 (Figures 10-11, area 1). The farmer has provided documentation highlighting his activities to reclaim farm land in the area of the former barns on the property (Figures 10-11, 14 area 1). This involved digging down 7 to 8 feet to bury the remnants of one barn and the bulldozing of another toward the smaller of the two green spaces down a distance of 12 inches (Figure 14, areas 1-3). This has impacted the archaeological

integrity of any archaeological resources that may have once been located there. There was a former garden center, house, garages and warehouse located north of the unnamed stream which have impacted the archaeological integrity of any archaeological resources in this area off Lindsay Street South (Figures 10-11, 13, area 4). The house has since been removed by the developer. To the north of this area an additional commercial space now vacant has impact this area as well. There are gas lines from Lindsay Street South, east toward the structures on the property. In the northeast corner of the study area there are numerous back dirt piles likely dating from the construction phase of the Lindsay Golf and Country Club (Figures 10-11, 13, area 5 Plate 43). While there are several sites on the west side of the Scugog River there is only one on the east side, though it doesn't show up on the data search. Both shovel testing and pedestrian survey were conducted in the development area.

## **7.0 STAGE 2 RECOMMENDATIONS**

Based on the Stage 1 background research and Stage 2 assessment the study area had potential for archaeological resources of either prehistoric or historic cultural value or interest. The farmer's removal of barns associated with the southern farmsteads also confirms deep and intensive soil disturbance impacting the archaeological integrity of these farmstead. His admission of burying the building debris, his installation of drainage tile and his having bulldozed the eastern barn across the field toward the small green space confirms deep soil disturbance in these areas.

The property while assessed as per the standards and guidelines at 5m intervals failed to demonstrate any archaeological resources of cultural value or interest. Further assessment is not warranted or required.

## **8.0 ADVICE ON COMPLIANCE WITH LEGISLATION**

1. This report is submitted to the Minister of Tourism, Culture and Sports as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, 0.18. This report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the Satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the Ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

2. It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the

Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the Ontario Heritage Act.

3. Should previously undocumented archaeological resources be discovered they may be a new archaeological site and therefore subject to Section 48(1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the Ontario Heritage Act.

4. The Cemeteries Act, R.S.O. 1990 c.C.4 and the Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c. 33 (when proclaimed in Force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

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## 10.0 FIGURES

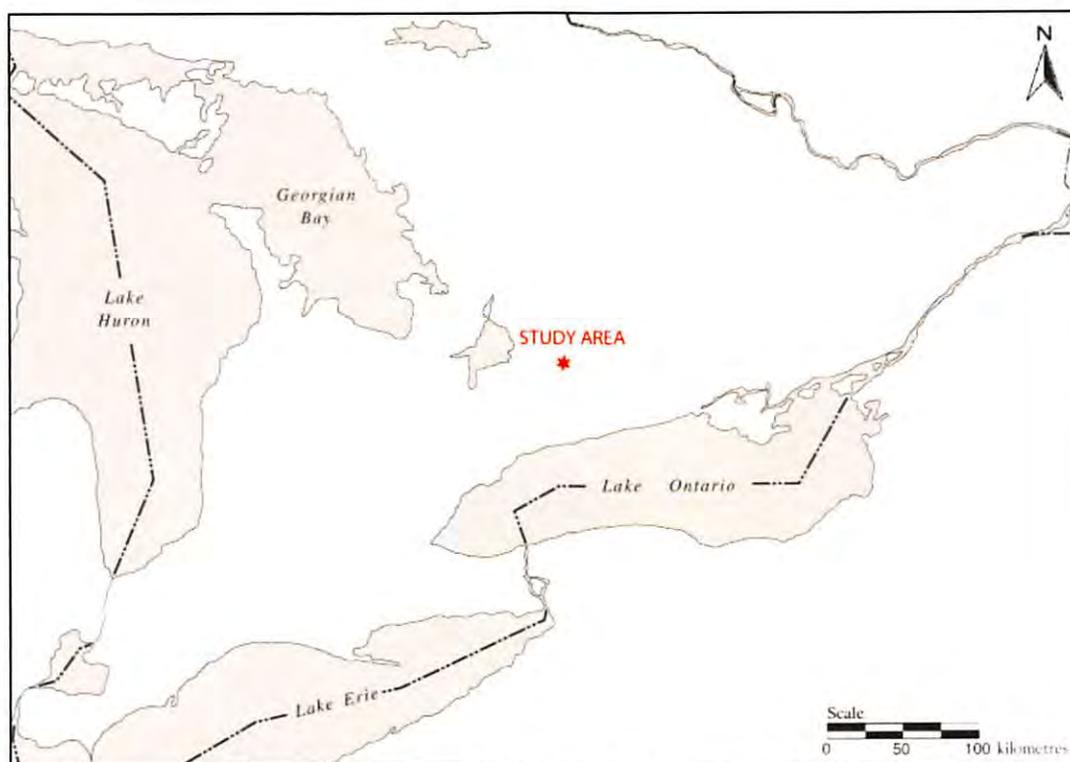


Figure 1 Location of the Bromont Lindsay Subdivision/Commercial space in relation to southern Ontario. (Brock University 2016)

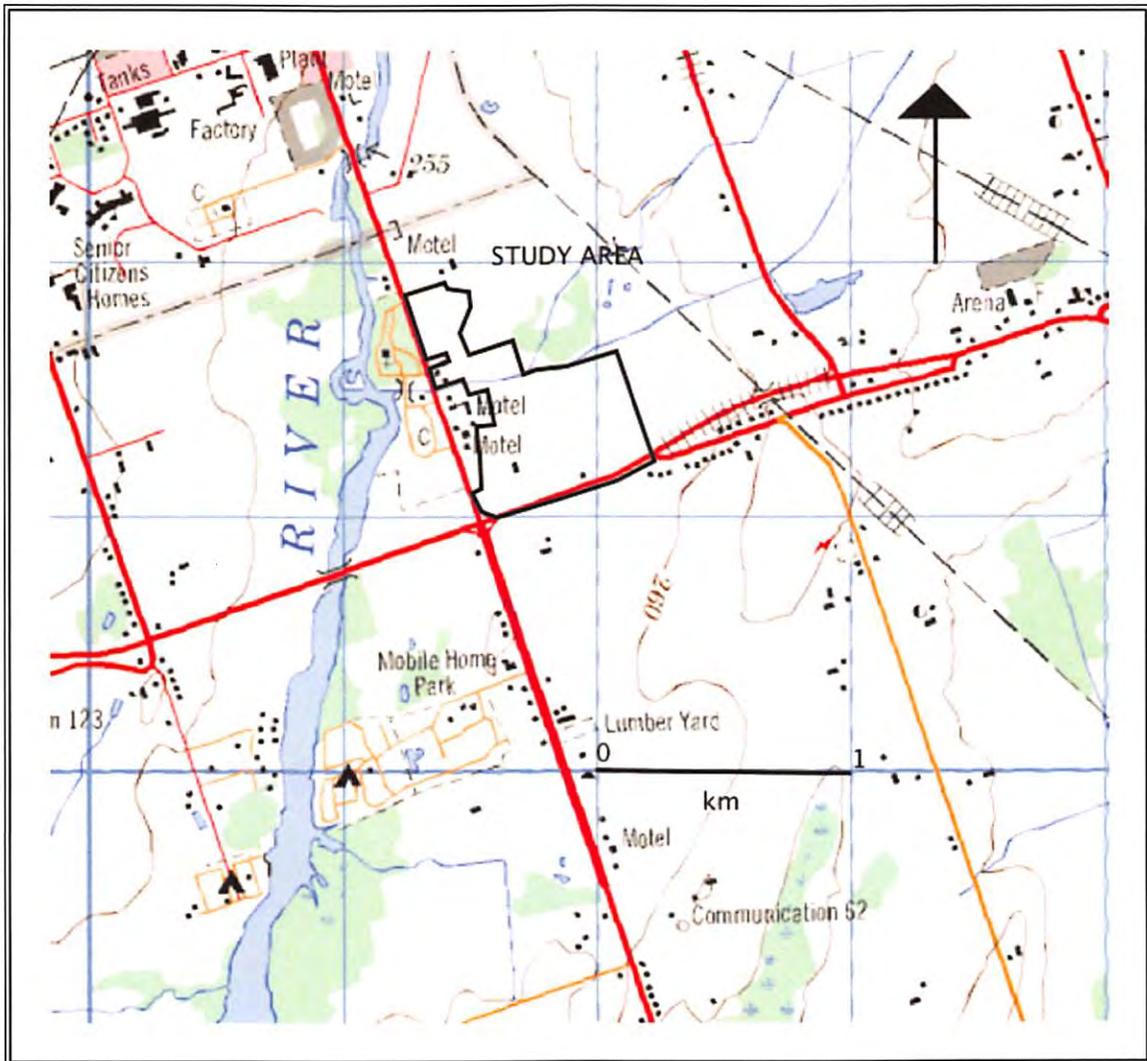


Figure 2 Location of study area in relation to the Town of Lindsay, Ontario; (on the NTS map 31 D/7, 1:50,000, 2001).

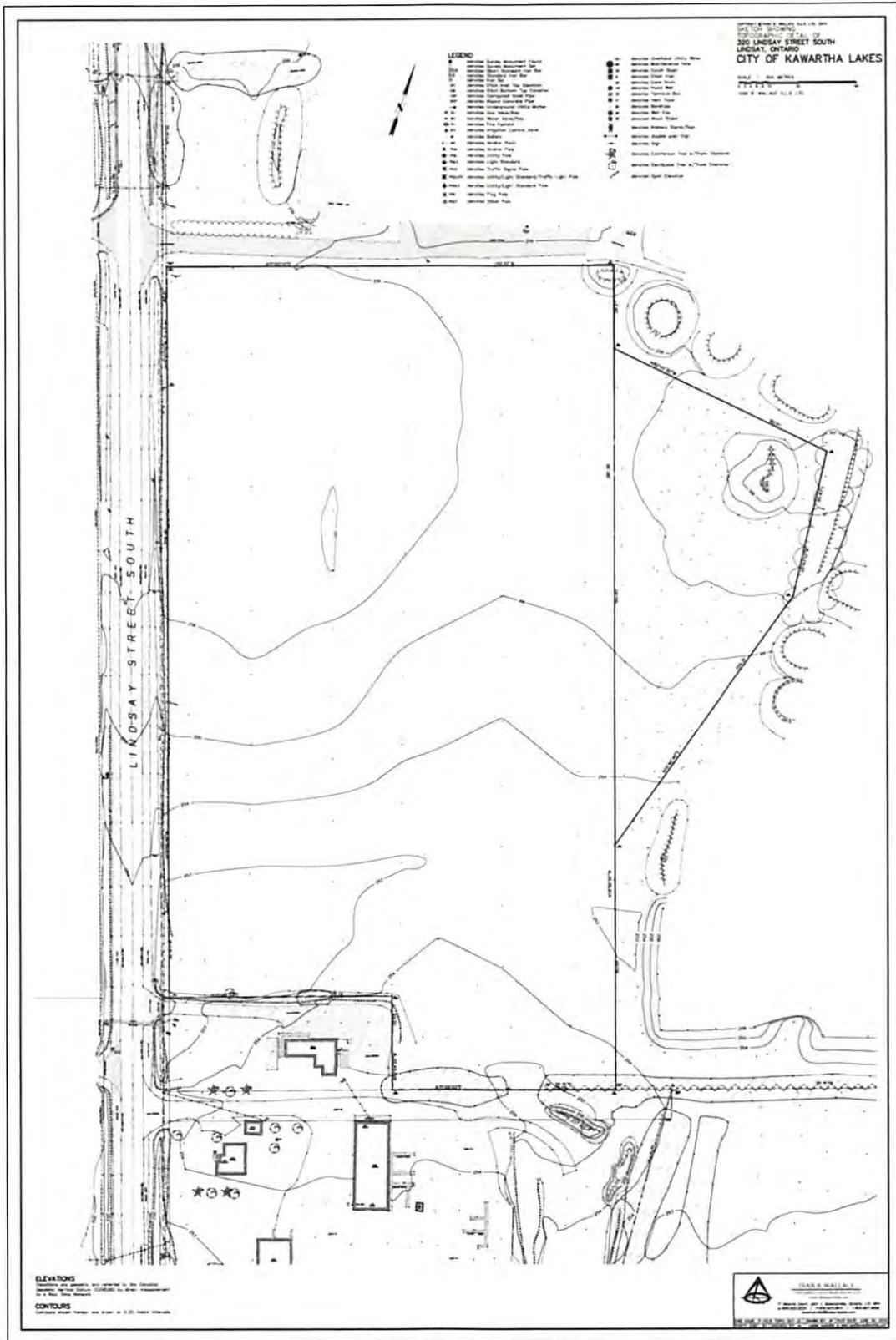


Figure 3(a) Bromont Subdivision, map of development plan, study area boundaries in black outline (north part). (IVAN WALLACE Ontario Land Surveyors Ltd.2015)

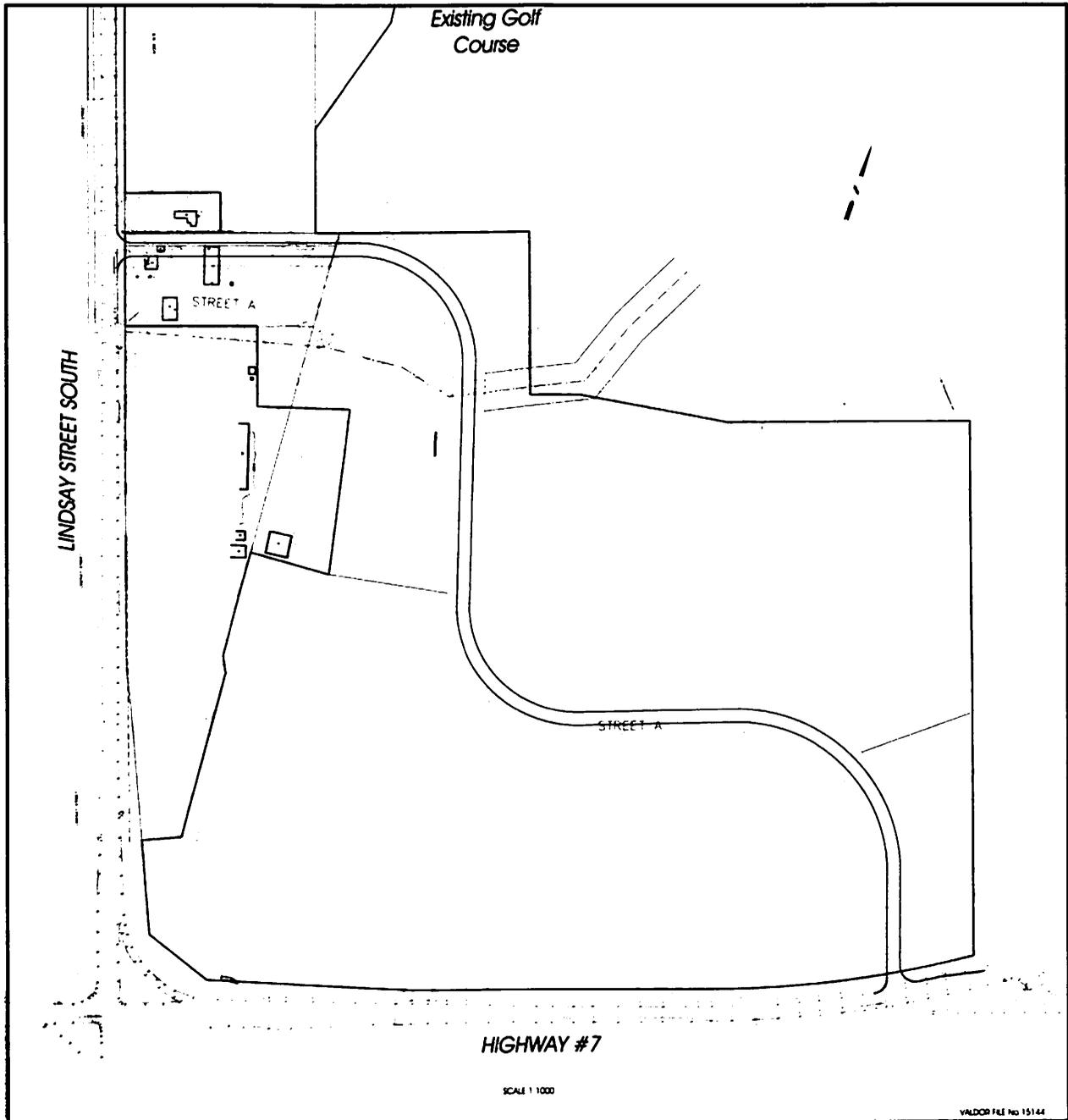


Figure 3(b) Bromont Subdivision, map of the development plan, study area boundaries in black outline (south part) (IVAN WALLACE Ontario Land Surveyors Ltd. 2015).

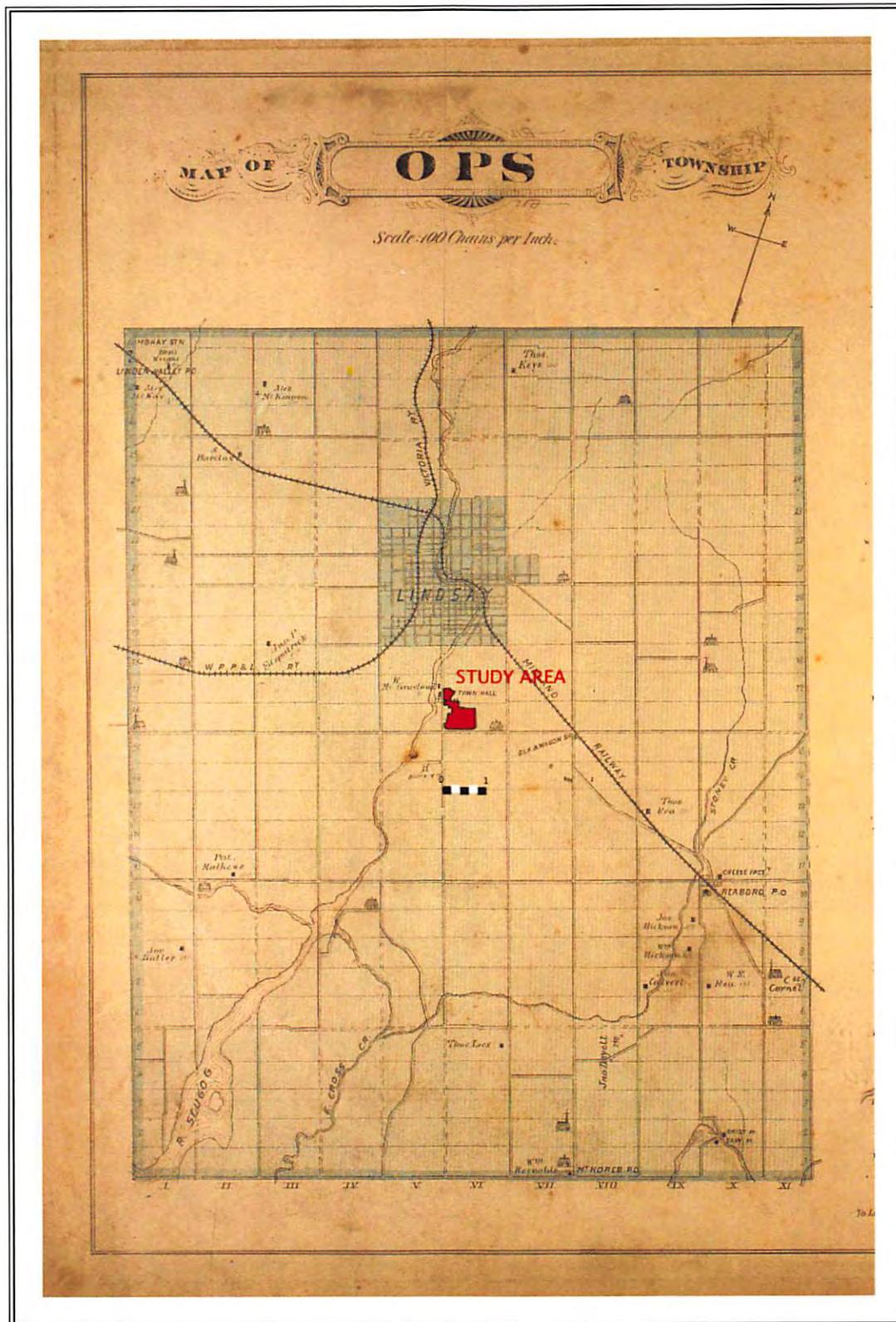


Figure 4 Location of the study area on the historic 1881 map of the Township of Ops. (Phelps, Guidal 1916)

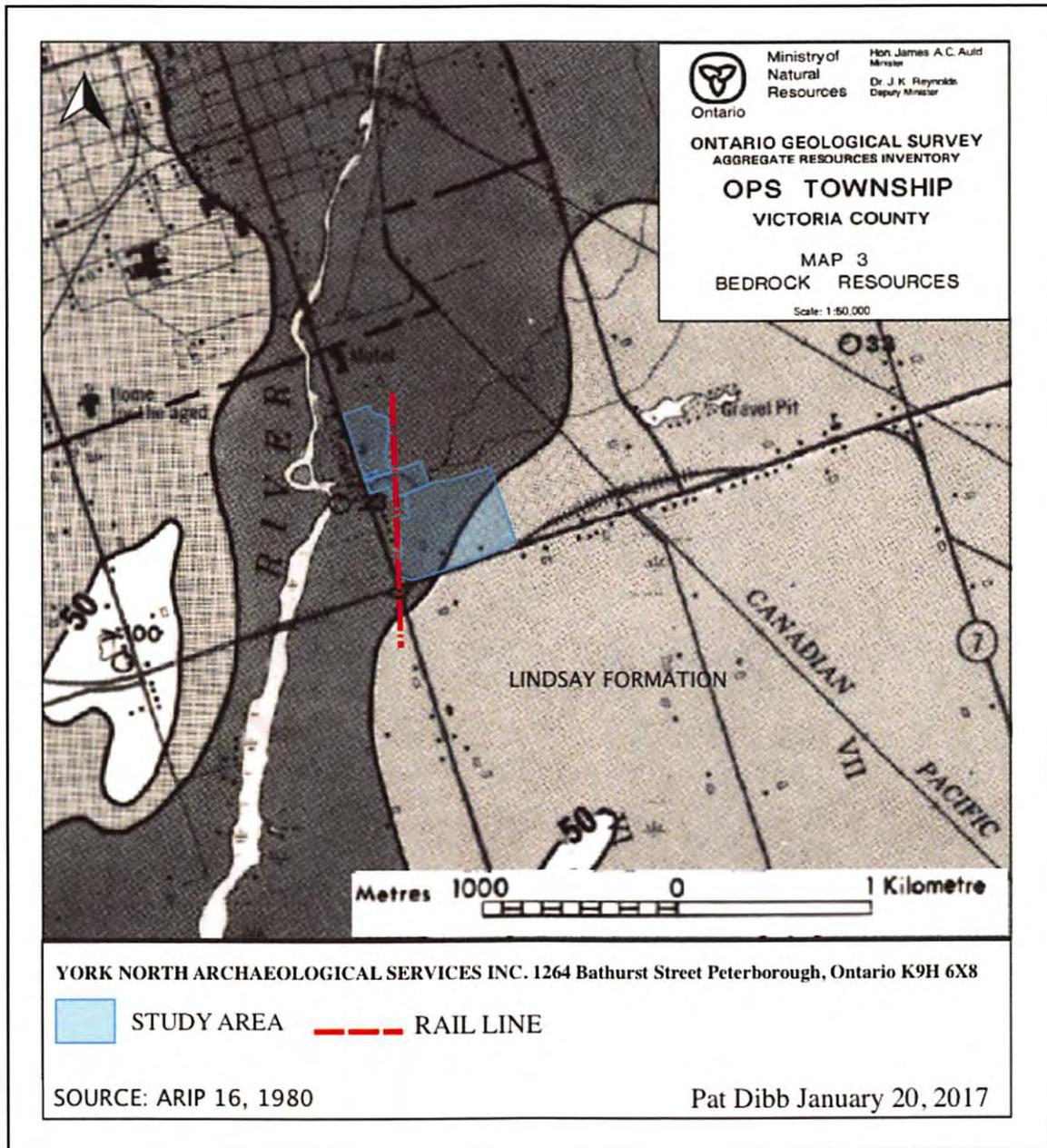


Figure 5 Portion of Ops Township bedrock geology map (OGS Map 3, 1980, ARIP No. 16)

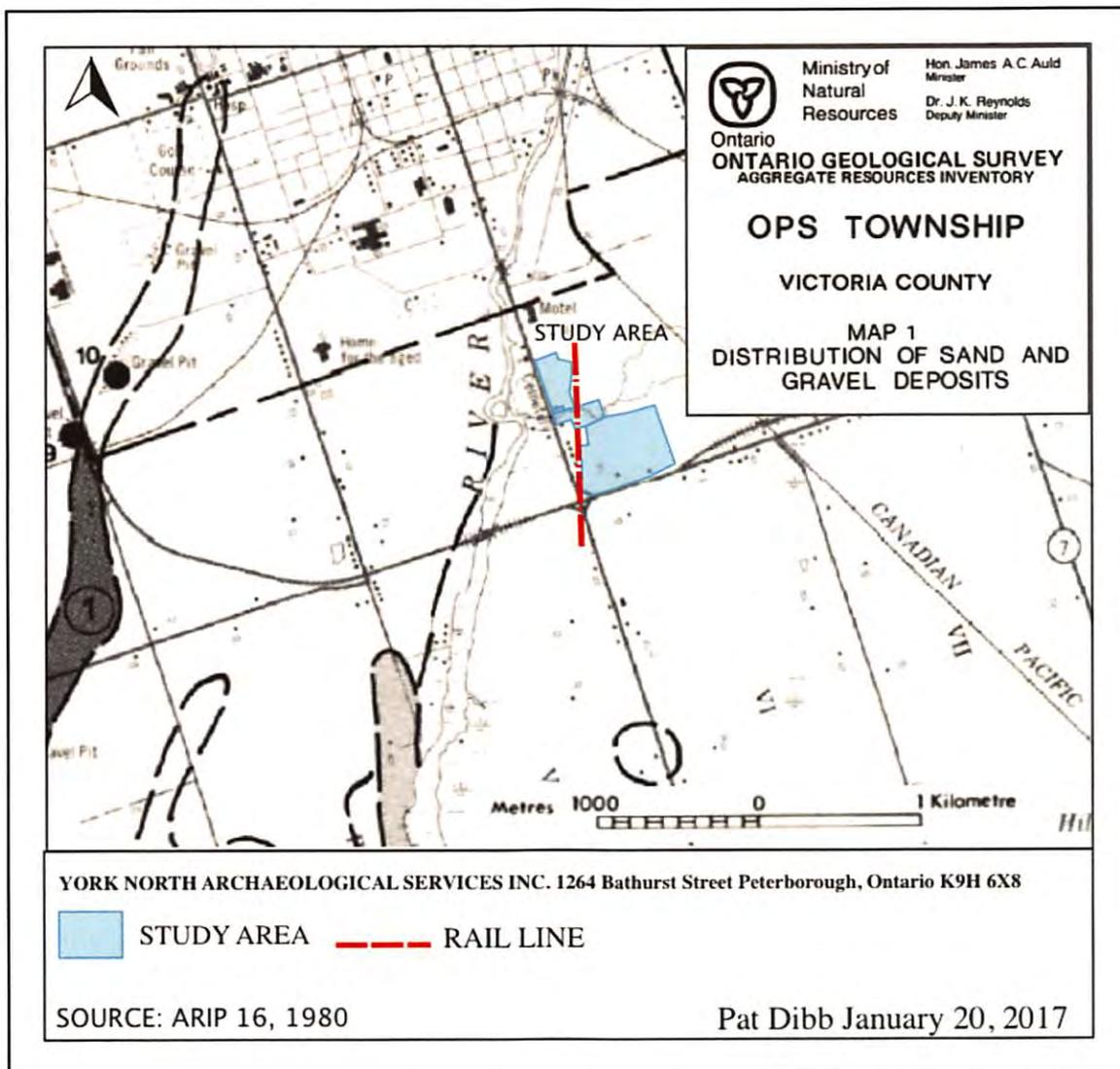


Figure 6 Portion of Ops Township sand and gravel map (OGS Map 1, 1980, ARIP No. 16)

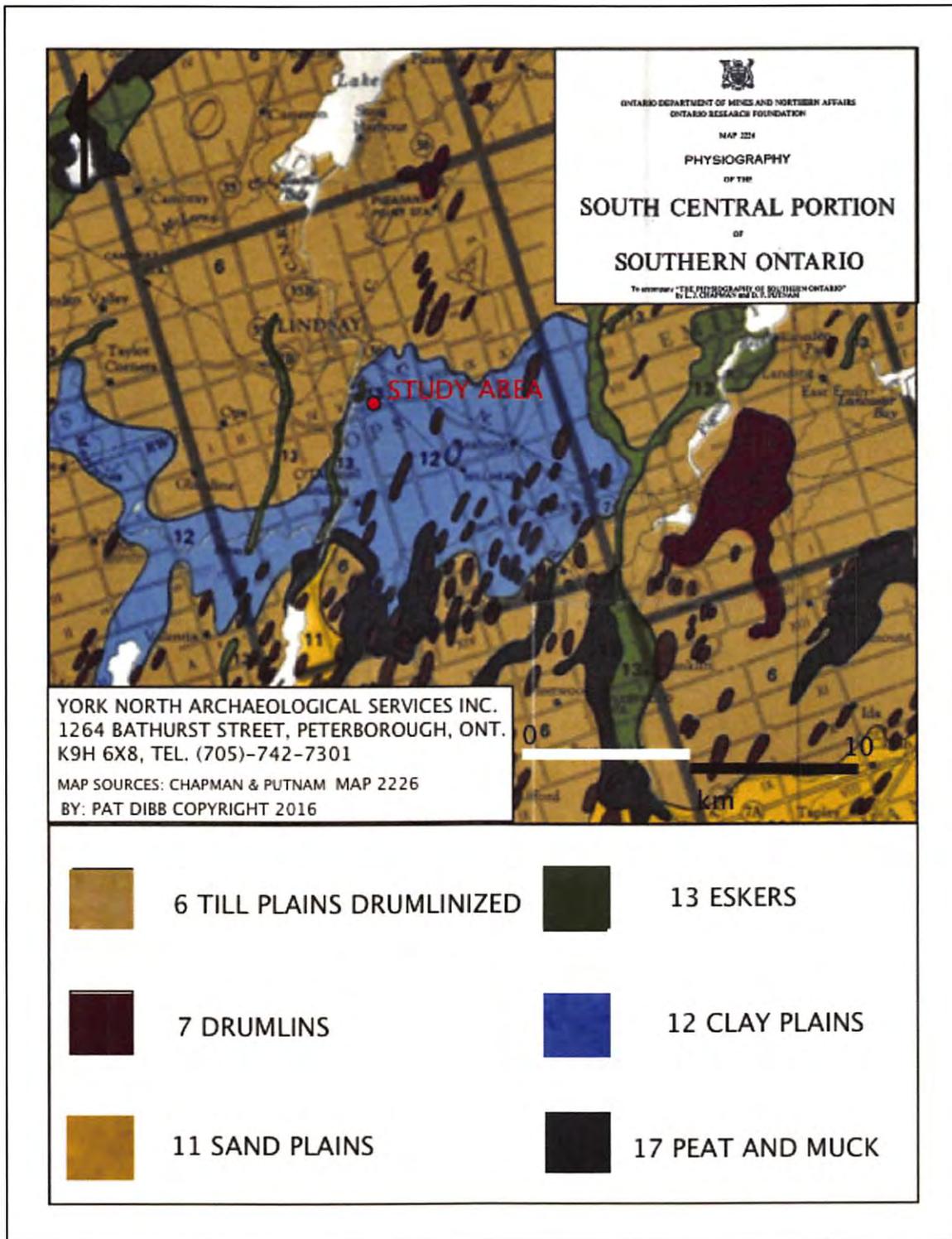


Figure 7 Portion of Physiography map showing the current study area location (Chapman & Putnam 1973: Map 2226)

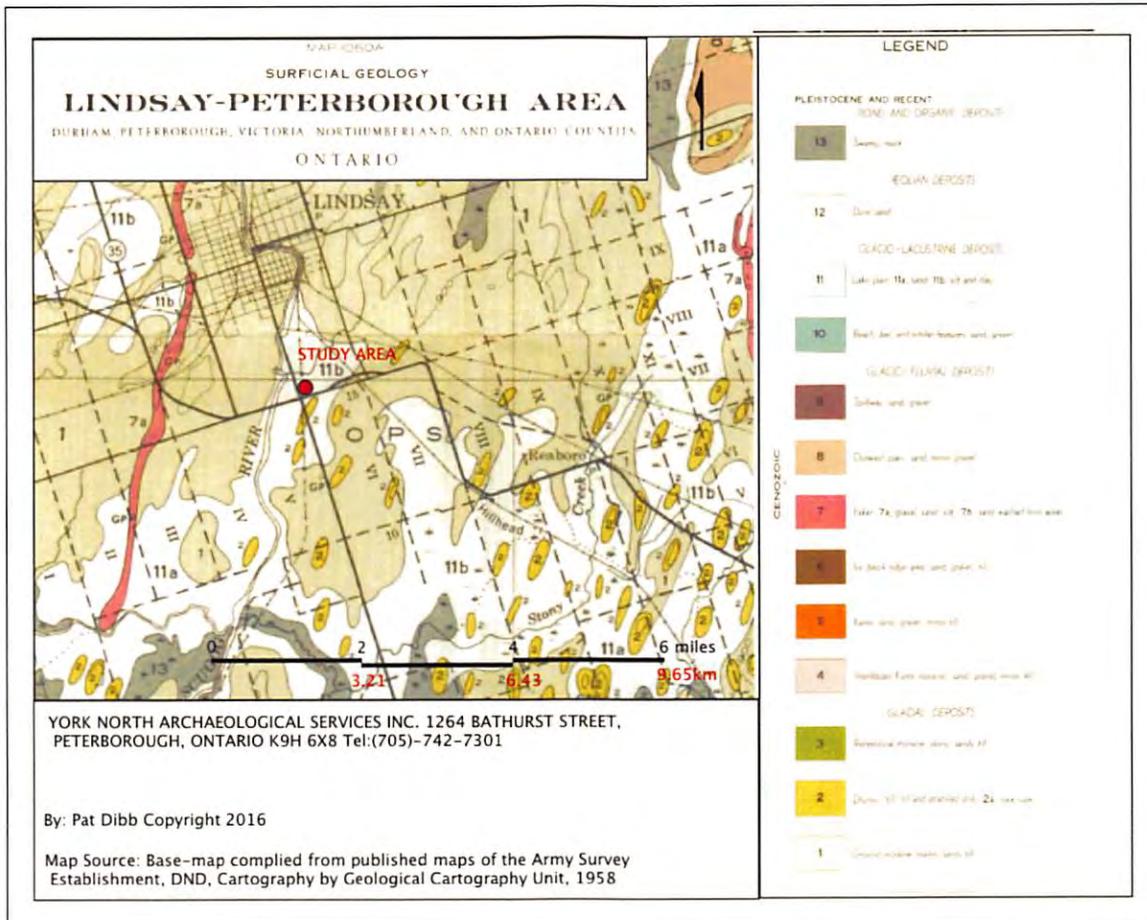


Figure 8 Surficial geological map of the study area. (Department of National Defense Cartography by Geological Cartography Unit 1958)

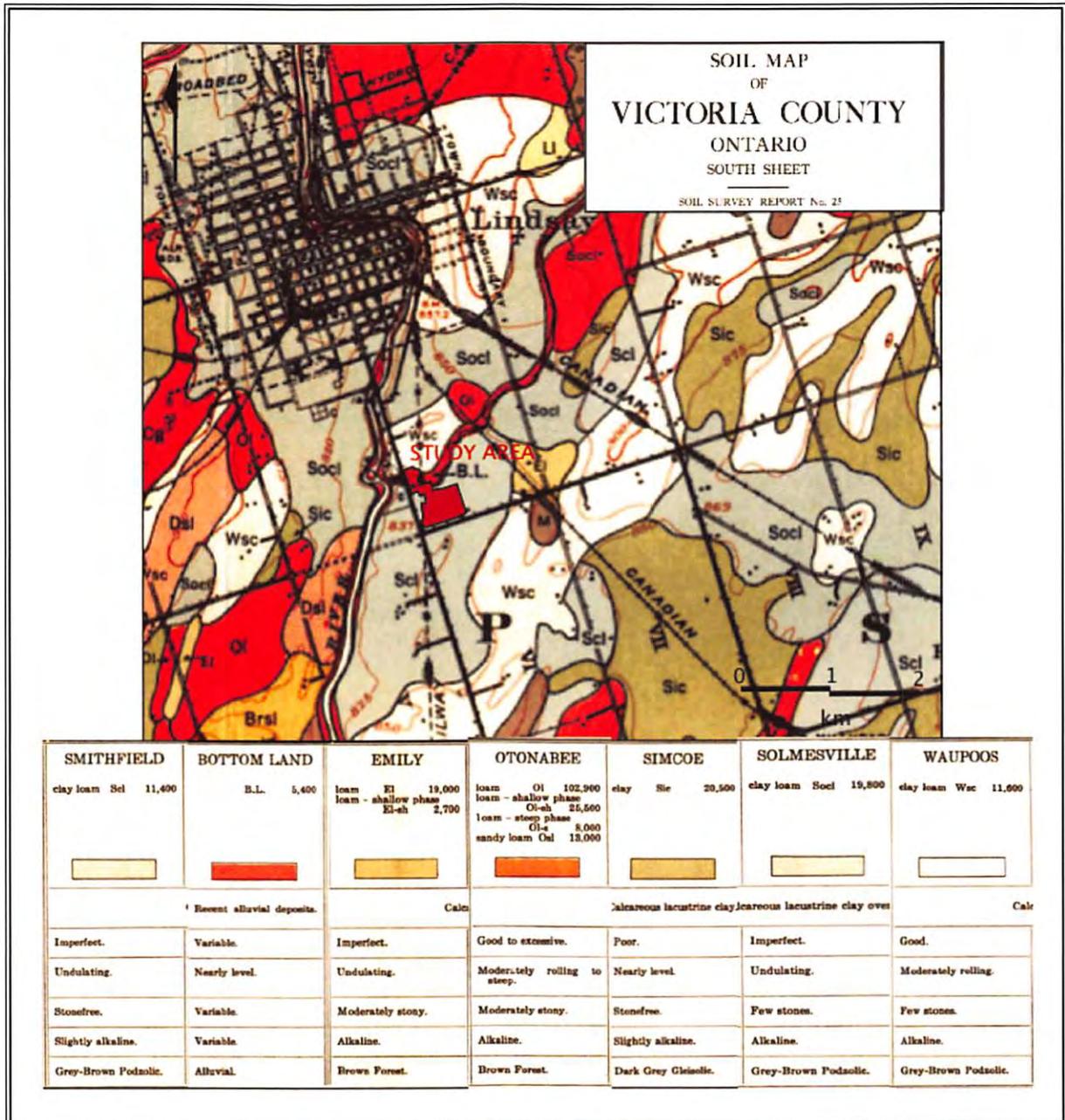


Figure 9 Soils map for the Township of Ops, showing the location of the study area (Gillespie, Richards 1957 NO. 25 Ontario Geological Survey Ontario Soil Survey)



Figure 10 Early 1950's air-photograph of study area showing the disturbed areas then and now (courtesy of Trent University Bata Library).



Figure 11 Air photograph of the study area showing high potential areas due to the proximity of the Scugog River (primary water source), and historic transportation route (Lindsay Street and Highway 7) and unnamed stream. (Google Earth Pro 2016)

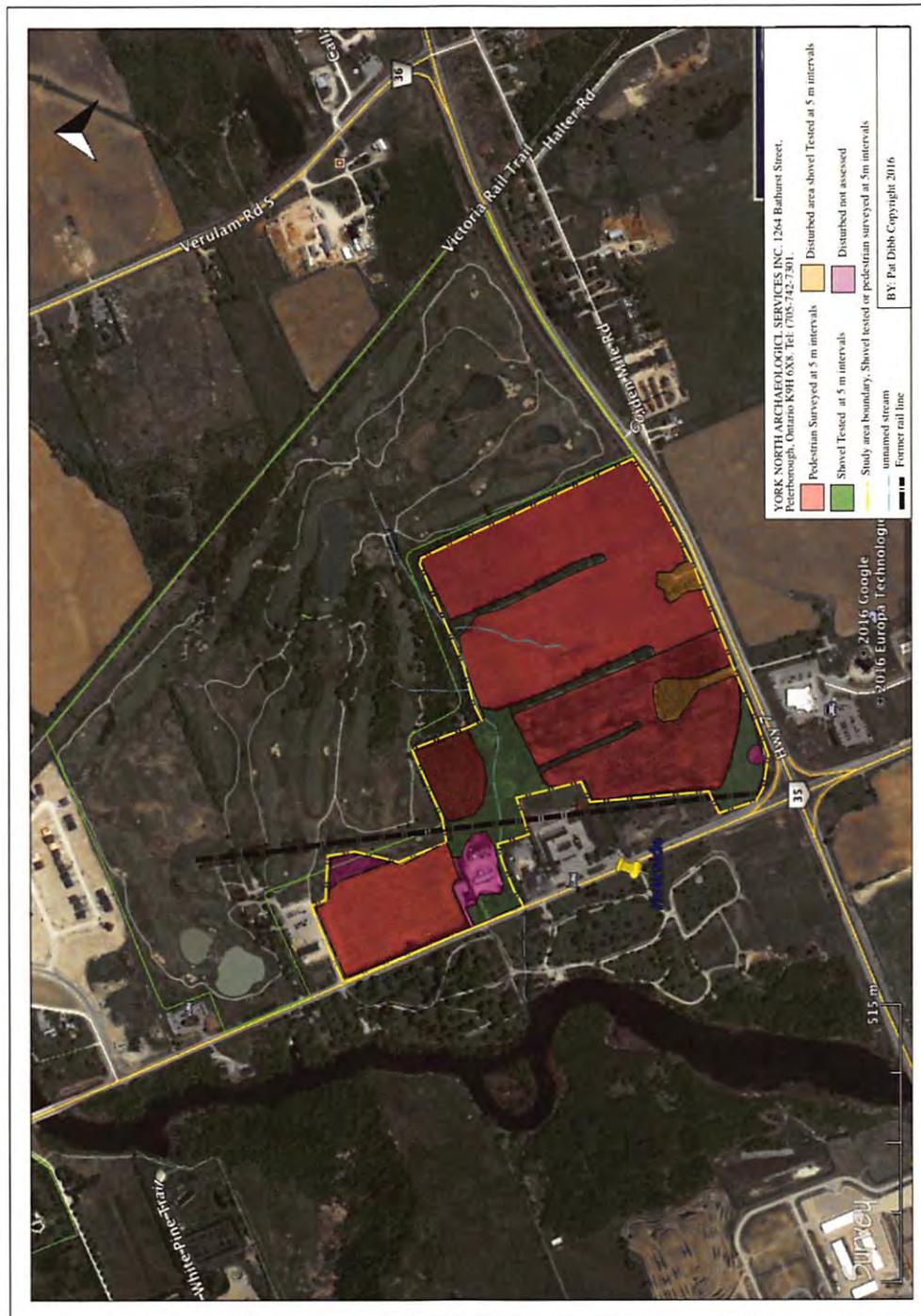


Figure 12 Methodology map showing the wooded area in green, which was shovel tested at 5m intervals; the red area was plowed, disked, weathered and pedestrian surveyed at 5-metre intervals. The purple areas were disturbed and not assessed, the orange areas were found to be disturbed but were shovel tested at 5 m intervals (Google Pro Earth 2016).

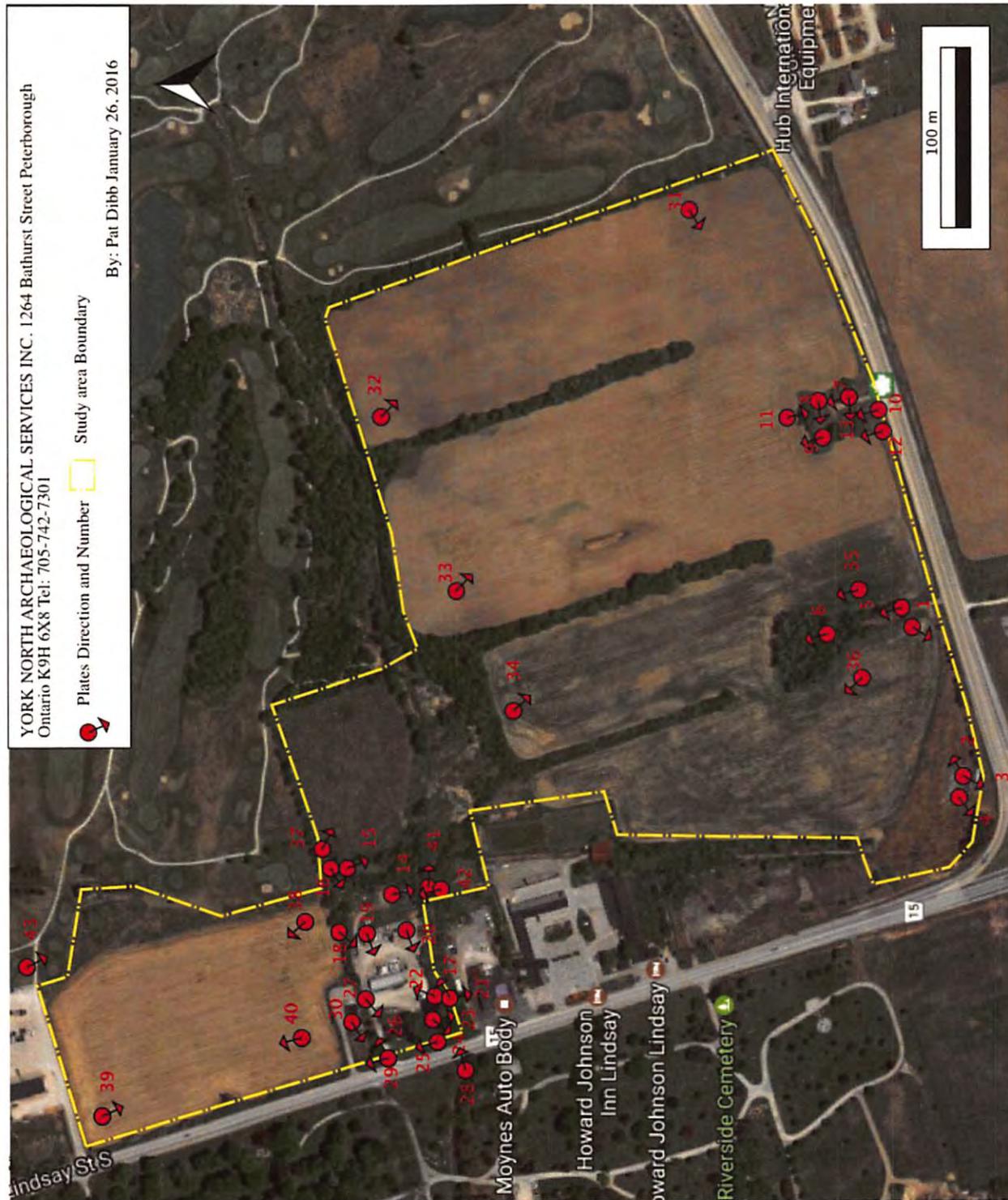


Figure 13 Air-photograph of the study area with plate numbers and directions shown (Google Earth Pro 2016).

Figure 14 Farmer’s information overlaid by him on YNAS earlier property Boundary (Supplementary Document)(Google Earth Pro 2016).

11.0 PLATES



Plate 1 View of YNAS crew shovel testing green space along south edge of current study area (area 1)



Plate 2 View east from asphalt area along the south edge of study area (previously disturbed) (area 1).



Plate 3 View south from center of previously disturbed area on the south edge of study area (area 1).



Plate 4 View southwest toward the intersection of Highway 7 and Lindsay Street South (area 1)



Plate 5 View north from the entrance of the larger of the two green spaces along the former farm laneway (area 2)



Plate 6 YNAS shovel testing in the green space looking north (area 2)



Plate 7 View northeast from the smaller green space east of the intersection of Highway 7 and Lindsay Street South (area 7)



Plate 8 View of YNAS shovel testing the small green space located east of the intersection of Highway 7 and Lindsay Street South (area 3)

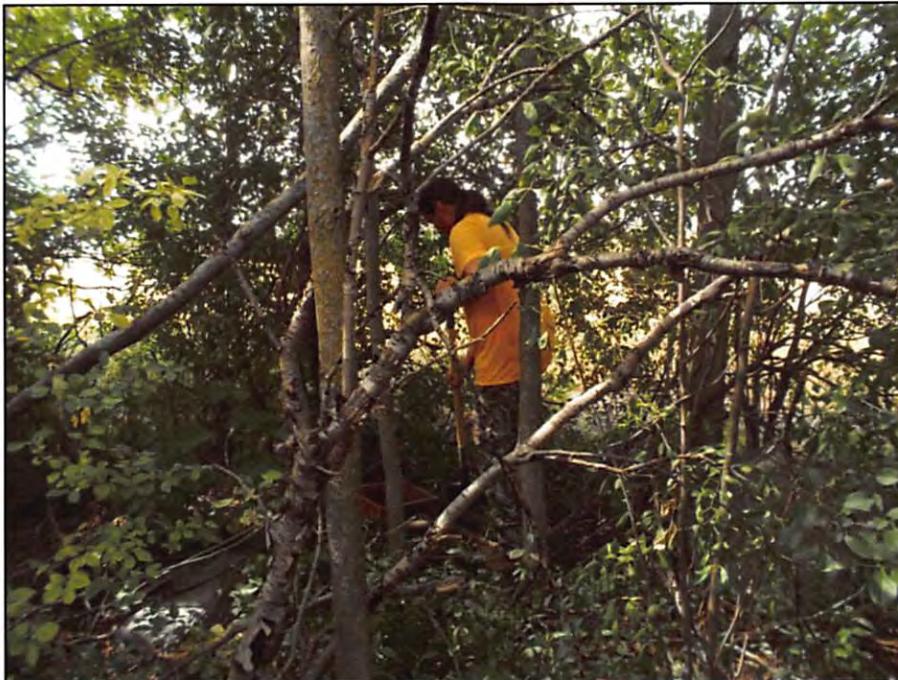


Plate 9 View of north west corner of green space (area 3)



Plate 10 Shovel testing the green space along the south edge ditching to the left (area 3)



Plate 11 Shovel testing the green space (area 3)



Plate 12 YNAS shovel testing the edge of the field on the west side of the small green space (area 3)



Plate 13 YNAS shovel testing the green space in the vicinity of the former brick house area (area 3)



Plate 14 Location of stripped below grade area at the back of the hut, berm created around the perimeter (area 4)



Plate 15 Shovel testing the former rail line green space looking south



Plate 16 Green space stripped behind the hut looking west (area 4)



Plate 17 View east along the unnamed stream of former garden center (area 4)



Plate 18 View southwest toward the unnamed stream along the field line (area 4)



Plate 19 View west from east yard edge (area 4)

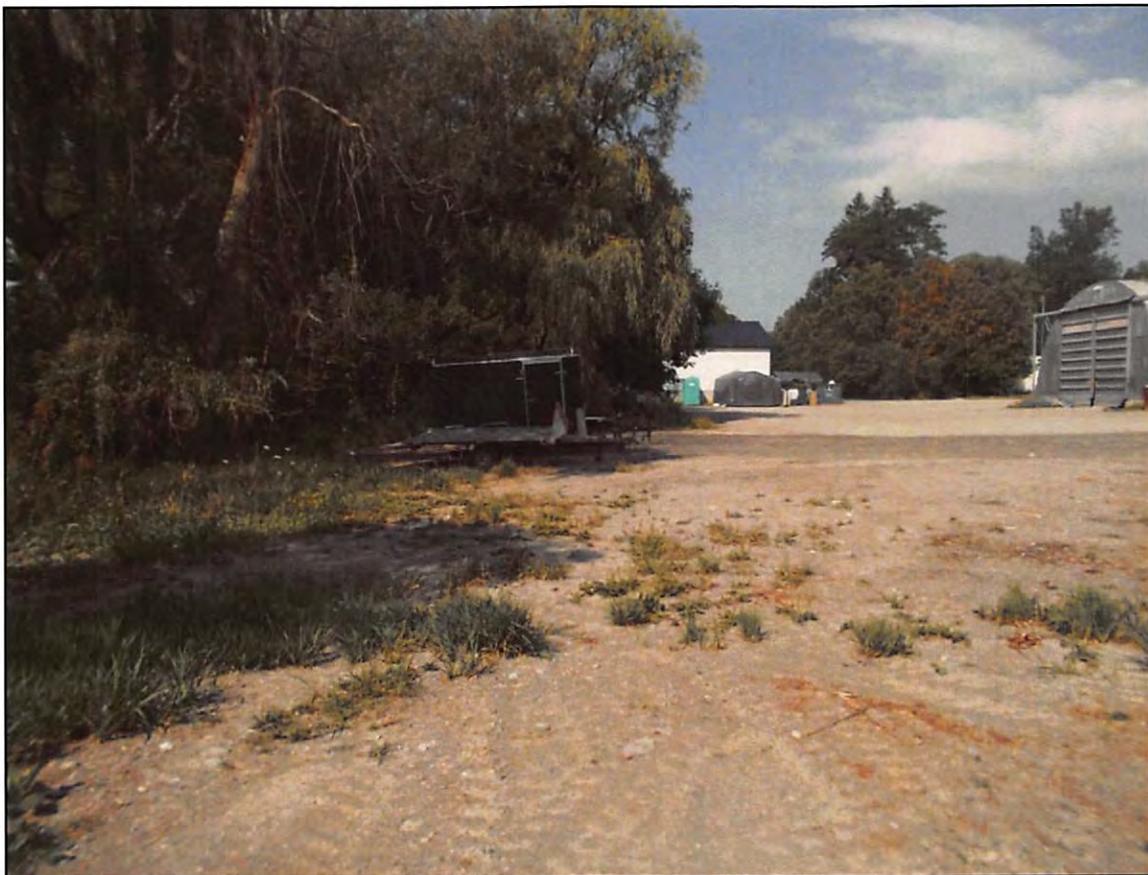


Plate 20 View west from the south edge of yard unnamed stream to the left (area 4)



Plate 21 View south across the ditch note the steep slopes on both sides



Plate 22 View northeast from the south edge of the yard (area 4)



Plate 23 View south taken from the west side of the large shed steep slope down to unnamed stream (area 4)



Plate 24 View southwest toward the large culvert under Lindsay Street South (area 4)

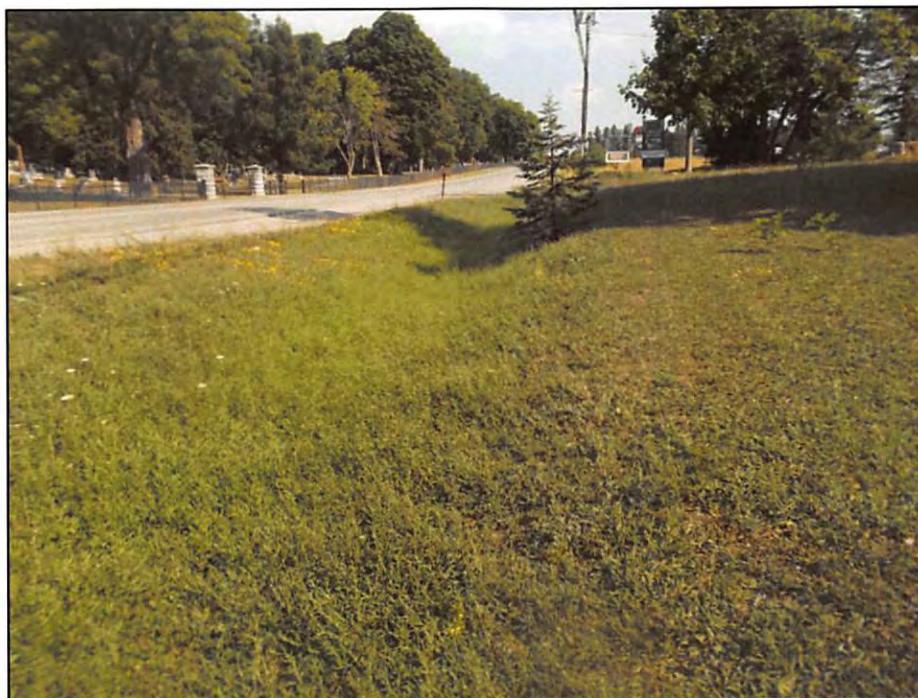


Plate 25 View north along the west edge of former residential building (since removed) (area 4)



Plate 26 View east along the north side of residential building (area 4)



Plate 27 View east from Lindsay Street South on the south side of residential building (area 4)

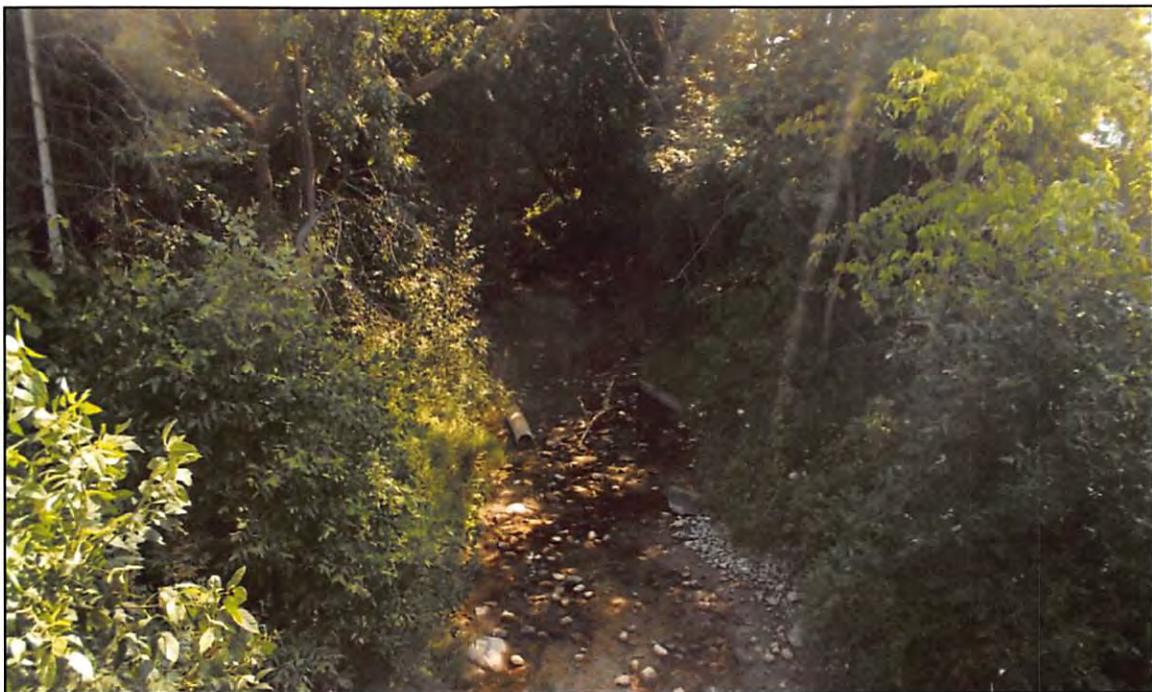


Plate 28 View east looking down from the culvert into the unnamed stream



Plate 29 View north along Lindsay Street South taken from the east side of the street (area 4)



Plate 30 YNAS shovel testing the lawn in front of commercial space, located across from the Riverside Cemetery (area 4)



Plate 31 View southwest from the east field edge, next to the golf course



Plate 32 View southeast from north edge of eastern most field



Plate 33 View southeast from north field edge



Plate 34 View southeast from north field edge



Plate 35 View northwest from south edge of study area east of the large green space (area 2)



Plate 36 View northwest from the south edge of the large green space on the west side of the large green space



Plate 37 View southeast from the northwest corner of smallest field edge



Plate 38 View northwest from the east edge of northern field



Plate 39 View southeast from the north edge of northern field



Plate 40 View northwest from the southwest corner of northern field



Plate 41 View toward trestle dated 1924 over unnamed stream



Plate 42 Date on the rail line trestle.



Plate 43 View into the small parcel along the east edge of the north field looking Southeast, area of back dirt piles and old building debris stock piled (area 5).

## 12.0 RECORD OF FINDS

No Archaeological resources were recovered during Stage II investigations, during either pedestrian survey or shovel testing.

## 13.0 DOCUMENTS GENERATED

ONTARIO MAP,  
NTS MAP 31 D/7,  
DEVELOPMENT PLANS,  
HISTORIC MAP (1881),  
GEOLOGICAL MAP,

SOILS MAP,  
AERIAL PHOTOGRAPH,  
POTENTIAL MAP,  
METHODOLOGY MAP,  
PLATES 1 – 17, AND PLATE MAP.

Supplementary Document

**YORK NORTH ARCHAEOLOGICAL SERVICES INC.**

1264 Bathurst Street, Peterborough, Ontario K9H 6X8. Tel: 705-742-7301, email: ynas@cogeco.net



**SUPPLEMENTARY DOCUMENT**

**A STAGE I-II ARCHAEOLOGICAL ASSESSMENT OF THE  
PROPOSED BROMONT LINDSAY SUBDIVISION/  
COMMERCIAL DEVELOPMENT: LOCATED IN PART OF  
LOTS 16 & 17, CONCESSION 6, GEOGRAPHIC TOWNSHIP  
OF OPS, CITY OF KAWARTHA LAKES, ONTARIO.**

Prepared By: York North Archaeological Services Inc.,  
Under MTCS Issued Archaeological  
License No: P156, PIF P156-0255-2016,  
(Report Prepared by: Patricia A. Dibb,  
Gordon C. Dibb  
Licensee: Patricia Dibb

Type of Report: Original  
Development Project No.: None  
PIFs In The Surrounding Area: Include 2000-036-32, P156-012-2006, P156-132-2012, P156-0227-2014, Site number (BbGq-22) Close by.

*January 29, 2017*

Re: disturbed areas in Lindsay. - scott wagstaff

Page 1 of 2

Re: disturbed areas in Lindsay.

scott wagstaff <scottwagstaff@hotmail.com>

Friday, November 10, 2016, 5:20 PM

Pat Dibb <ynas@cogeco.net>

Hello Pat,

I have farmed the property on hwy 7 for approximately 25 years.

The area on the map in the black circle had the remains of a old log barn, mostly just a few rotten beams left but very uneven ground. I used a front end loader on a farm tractor to push the debris into a pile represented by the red dot.

Not more than 12 to 18 inches of soil moved around to level ground. Since that time the dirt has been farmed each year with plowing and cultivating.

The area in the pink circle was the remains of a barn that had burnt down, it had concrete foundation walls that remained after the fire.

This foundation was buried where it was, represented by the blue dot. This was buried with a excavator approximately 7 to 8 feet deep.

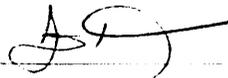
Since that time the land has been farmed each year by plowing and cultivating.

No basement on these buildings, and no dirt removed from the property.  
No permits were required.

The yellow Lines represent field drainage I had installed with a large drainage plow ( bulldozer). varying in depth from 3 to 5 feet deep.

All the work for these areas happened approximately 10 to 15 years ago.

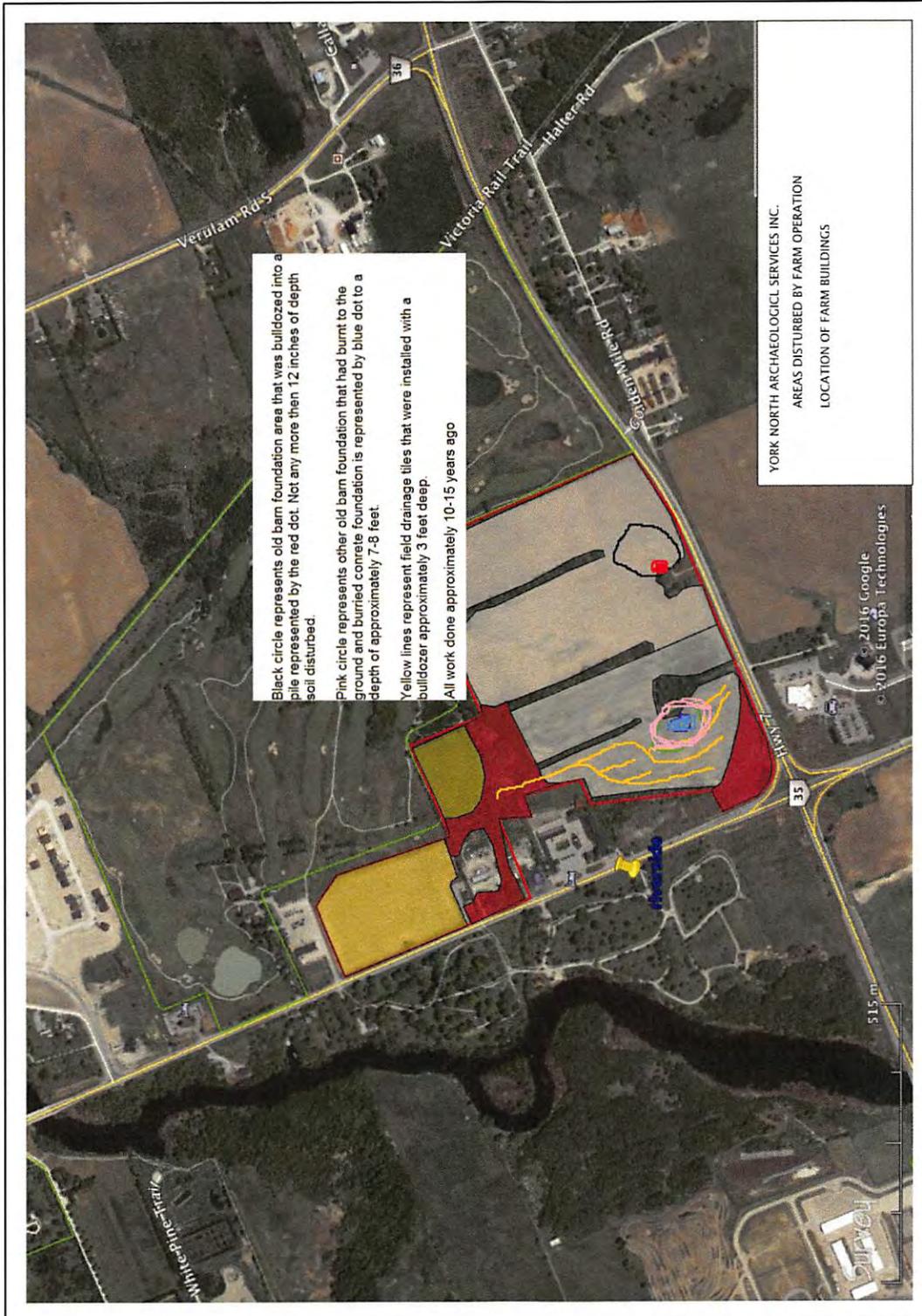
Thanks  
Scott Wagstaff



---

From: Pat Dibb <ynas@cogeco.net>  
Sent: November 10, 2016 5:20:44 PM  
To: scott wagstaff  
Subject: Re: disturbed areas in Lindsay.

Thanks I will call just before we leave Peterborough



**APPENDIX F: Checklists**

The **purpose of the checklist** is to determine:

- if a property(ies) or project area may contain archaeological resources i.e., have archaeological potential
- it includes all areas that may be impacted by project activities, including – but not limited to:
  - the main project area
  - temporary storage
  - staging and working areas
  - temporary roads and detours

**Processes covered** under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

### Archaeological assessment

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a licensed consultant archaeologist (see page 4 for definitions) to undertake an archaeological assessment.

The assessment will help you:

- identify, evaluate and protect archaeological resources on your property or project area
- reduce potential delays and risks to your project

**Note:** By law, archaeological assessments **must** be done by a licensed consultant archaeologist. Only a licensed archaeologist can assess – or alter – an archaeological site.

### What to do if you:

- **find an archaeological resource**

If you find something you think may be of archaeological value during project work, you must – by law – stop all activities immediately and contact a licensed consultant archaeologist

The archaeologist will carry out the fieldwork in compliance with the *Ontario Heritage Act* [s.48(1)].

- **unearth a burial site**

If you find a burial site containing human remains, you must immediately notify the appropriate authorities (i.e., police, coroner's office, and/or Registrar of Cemeteries) and comply with the *Funeral, Burial and Cremation Services Act*.

### Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – [separate checklist](#)
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages when completing this form.

Project or Property Name

Highway 7 Sewage Pumping Station

Project or Property Location (upper and lower or single tier municipality)

Lindsay - Highway 7, Lindsay Street South

Proponent Name

The City of Kawartha Lakes

Proponent Contact Information

Jeanorth Sinnakandu - jsinnakandu@greergalloway.com - (613) 966-3068 ext. 392

### Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**If Yes**, please follow the pre-approved screening checklist, methodology or process.

**If No**, continue to Question 2.

	Yes	No
2. Has an archaeological assessment been prepared for the property (or project area) and been accepted by MTCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**If Yes**, do **not** complete the rest of the checklist. You are expected to follow the recommendations in the archaeological assessment report(s).

The proponent, property owner and/or approval authority will:

- summarize the previous assessment
- add this checklist to the project file, with the appropriate documents that demonstrate an archaeological assessment was undertaken e.g., MTCS letter stating acceptance of archaeological assessment report

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g., environmental assessment document
- maintained by the property owner, proponent or approval authority

**If No**, continue to Question 3.

	Yes	No
3. Are there known archaeological sites on or within 300 metres of the property (or the project area)?	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No
4. Is there Aboriginal or local knowledge of archaeological sites on or within 300 metres of the property (or project area)?	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No
5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 300 metres of the property (or project area)?	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No
6. Is there a known burial site or cemetery on the property or adjacent to the property (or project area)?	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No
7. Has the property (or project area) been recognized for its cultural heritage value?	<input type="checkbox"/>	<input type="checkbox"/>

**If Yes** to any of the above questions (3 to 7), do **not** complete the checklist. Instead, you need to hire a licensed consultant archaeologist to undertake an archaeological assessment of your property or project area.

**If No**, continue to question 8.

	Yes	No
8. Has the entire property (or project area) been subjected to recent, extensive and intensive disturbance?	<input type="checkbox"/>	<input type="checkbox"/>

**If Yes** to the preceding question, do **not** complete the checklist. Instead, please keep and maintain a summary of documentation that provides evidence of the recent disturbance.

An archaeological assessment is not required.

**If No**, continue to question 9.

9. Are there present or past water sources within 300 metres of the property (or project area)? Yes  No

**If Yes**, an archaeological assessment is required.

**If No**, continue to question 10.

10. Is there evidence of two or more of the following on the property (or project area)? Yes  No

- elevated topography
- pockets of well-drained sandy soil
- distinctive land formations
- resource extraction areas
- early historic settlement
- early historic transportation routes

**If Yes**, an archaeological assessment is required.

**If No**, there is low potential for archaeological resources at the property (or project area).

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g., under the *Environmental Assessment Act*, *Planning Act* processes
- maintained by the property owner, proponent or approval authority

## Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
  - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

In this context, the following definitions apply:

- **consultant archaeologist** means, as defined in Ontario regulation as an archaeologist who enters into an agreement with a client to carry out or supervise archaeological fieldwork on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client. In Ontario, these people also are required to hold a valid professional archaeological licence issued by the Ministry of Tourism, Culture and Sport.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

### 1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may be already in place for identifying archaeological potential, including:

- one prepared and adopted by the municipality e.g., archaeological management plan
- an environmental assessment process e.g., screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport under the Ontario government's [Standards & Guidelines for Conservation of Provincial Heritage Properties](#) [s. B.2.]

### 2. Has an archaeological assessment been prepared for the property (or project area) and been accepted by MTCS?

Respond 'yes' to this question, if all of the following are true:

- an archaeological assessment report has been prepared and is in compliance with MTCS requirements
  - a letter has been sent by MTCS to the licensed archaeologist confirming that MTCS has added the report to the Ontario Public Register of Archaeological Reports (Register)
- the report states that there are no concerns regarding impacts to archaeological sites

Otherwise, if an assessment has been completed and deemed compliant by the MTCS, and the ministry recommends further archaeological assessment work, this work will need to be completed.

For more information about archaeological assessments, contact:

- approval authority
- proponent
- consultant archaeologist
- Ministry of Tourism, Culture and Sport at [archaeology@ontario.ca](mailto:archaeology@ontario.ca)

### 3. Are there known archaeological sites on or within 300 metres of the property (or project area)?

MTCS maintains a database of archaeological sites reported to the ministry.

For more information, contact MTCS Archaeological Data Coordinator at [archaeology@ontario.ca](mailto:archaeology@ontario.ca).

### 4. Is there Aboriginal or local knowledge of archaeological sites on or within 300 metres of the property?

Check with:

- Aboriginal communities in your area
- local municipal staff

They may have information about archaeological sites that are not included in MTCS' database.

Other sources of local knowledge may include:

- property owner
- [local heritage organizations and historical societies](#)
- local museums
- [municipal heritage committee](#)
- published local histories

## 5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 300 metres of the property (or property area)?

Check with:

- Aboriginal communities in your area
- local municipal staff

Other sources of local knowledge may include:

- property owner
- [local heritage organizations and historical societies](#)
- local museums
- [municipal heritage committee](#)
- published local histories

## 6. Is there a known burial site or cemetery on the property or adjacent to the property (or project area)?

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulation Unit, Ontario Ministry of Consumer Services – for [database of registered cemeteries](#)
- Ontario Genealogical Society (OGS) – to [locate records of Ontario cemeteries](#), both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to [locate early cemeteries](#)

In this context, ‘adjacent’ means ‘contiguous’, or as otherwise defined in a municipal official plan.

## 7. Has the property (or project area) been recognized for its cultural heritage value?

There is a strong chance there may be archaeological resources on your property (or immediate area) if it has been listed, designated or otherwise identified as being of cultural heritage value by:

- your municipality
- Ontario government
- Canadian government

This includes a property that is:

- designated under *Ontario Heritage Act* (the OHA ), including:
  - individual designation (Part IV)
  - part of a heritage conservation district (Part V)
  - an archaeological site (Part VI)
- subject to:
  - an agreement, covenant or easement entered into under the OHA (Parts II or IV)
  - a notice of intention to designate (Part IV)
  - a heritage conservation district study area by-law (Part V) of the OHA
- listed on:
  - a municipal register or inventory of heritage properties
  - Ontario government’s list of provincial heritage properties
  - Federal government’s list of federal heritage buildings
- part of a:
  - National Historic Site
  - UNESCO World Heritage Site
- designated under:
  - *Heritage Railway Station Protection Act*
  - *Heritage Lighthouse Protection Act*
- subject of a municipal, provincial or federal commemorative or interpretive plaque.

To determine if your property or project area is covered by any of the above, see:

- Part A of the MTCS Criteria for Evaluating Potential for Built Heritage and Cultural Heritage Landscapes

## Part VI – Archaeological Sites

Includes five sites designated by the Minister under Regulation 875 of the Revised Regulation of Ontario, 1990 (Archaeological Sites) and 3 marine archaeological sites prescribed under Ontario Regulation 11/06.

For more information, check [Regulation 875](#) and [Ontario Regulation 11/06](#).

### 8. Has the entire property (or project area) been subjected to recent extensive and intensive ground disturbance?

Recent: after-1960

Extensive: over all or most of the area

Intensive: thorough or complete disturbance

Examples of ground disturbance include:

- quarrying
- major landscaping – involving grading below topsoil
- building footprints and associated construction area
  - where the building has deep foundations or a basement
- infrastructure development such as:
  - sewer lines
  - gas lines
  - underground hydro lines
  - roads
  - any associated trenches, ditches, interchanges. **Note:** this applies only to the excavated part of the right-of-way; the remainder of the right-of-way or corridor may not have been impacted.

A ground disturbance does **not** include:

- agricultural cultivation
- gardening
- landscaping

#### Site visits

You can typically get this information from a site visit. In that case, please document your visit in the process (e.g., report) with:

- photographs
- maps
- detailed descriptions

If a disturbance isn't clear from a site visit or other research, you need to hire a licensed consultant archaeologist to undertake an archaeological assessment.

### 9. Are there present or past water bodies within 300 metres of the property (or project area)?

Water bodies are associated with past human occupations and use of the land. About 80-90% of archaeological sites are found within 300 metres of water bodies.

#### Present

- Water bodies:
  - primary - lakes, rivers, streams, creeks
  - secondary - springs, marshes, swamps and intermittent streams and creeks
- accessible or inaccessible shoreline, for example:
  - high bluffs
  - swamps
  - marsh fields by the edge of a lake
  - sandbars stretching into marsh

Water bodies not included:

- man-made water bodies, for example:
  - temporary channels for surface drainage
  - rock chutes and spillways
  - temporarily ponded areas that are normally farmed
  - dugout ponds
- artificial bodies of water intended for storage, treatment or recirculation of:
  - runoff from farm animal yards
  - manure storage facilities
  - sites and outdoor confinement areas

## Past

Features indicating past water bodies:

- raised sand or gravel beach ridges – can indicate glacial lake shorelines
- clear dip in the land – can indicate an old river or stream
- shorelines of drained lakes or marshes
- cobble beaches

You can get information about water bodies through:

- a site visit
- aerial photographs
- 1:10,000 scale [Ontario Base Maps](#) - or [equally detailed and scaled maps](#).

## 10. Is there evidence of two or more of the following on the property (or project area)?

- elevated topography
- pockets of well-drained sandy soil
- distinctive land formations
- resource extraction areas
- early historic settlement
- early historic transportation routes

### • **Elevated topography**

Higher ground and elevated positions - surrounded by low or level topography - often indicate past settlement and land use.

Features such as eskers, drumlins, sizeable knolls, plateaus next to lowlands, or other such features are a strong indication of archaeological potential.

Find out if your property or project area has elevated topography, through:

- site inspection
- aerial photographs
- [topographical maps](#)

### • **Pockets of well-drained sandy soil, especially within areas of heavy soil or rocky ground**

Sandy, well-drained soil - in areas characterized by heavy soil or rocky ground - may indicate archaeological potential

Find out if your property or project area has sandy soil through:

- site inspection
- [soil survey reports](#)

- **Distinctive land formations**

Distinctive land formations include – but are not limited to:

- waterfalls
- rock outcrops
- rock faces
- caverns
- mounds, etc.

They were often important to past inhabitants as special or sacred places. The following sites may be present – or close to – these formations:

- burials
- structures
- offerings
- rock paintings or carvings

Find out if your property or project areas has a distinctive land formation through:

- a site visit
- aerial photographs
- 1:10,000 scale [Ontario Base Maps](#) - or [equally detailed and scaled maps](#).

- **Resource extraction areas**

The following resources were collected in these extraction areas:

- food or medicinal plants e.g., migratory routes, spawning areas, prairie
- scarce raw materials e.g., quartz, copper, ochre or outcrops of chert
- resources associated with early historic industry e.g., fur trade, logging, prospecting, mining

Aboriginal communities may hold traditional knowledge about their past use or resources in the area.

- **Early historic settlement**

Early Euro-Canadian settlement include – but are not limited to:

- early military or pioneer settlement e.g., pioneer homesteads, isolated cabins, farmstead complexes
- early wharf or dock complexes
- pioneers churches and early cemeteries

For more information, see below – under the early historic transportation routes.

- **Early historic transportation routes** - such as trails, passes, roads, railways, portage routes, canals.

For more information, see:

- historical maps and/or historical atlases
  - for information on early settlement patterns such as trails (including Aboriginal trails), monuments, structures, fences, mills, historic roads, rail corridors, canals, etc.
  - [Archives of Ontario](#) holds a large collection of historical maps and historical atlases
  - digital versions of historic atlases are available on the [Canadian County Atlas Digital Project](#)
- commemorative markers or plaques such as local, [provincial](#) or [federal](#) agencies
- [municipal heritage committee](#) or other [local heritage organizations](#)
  - for information on early historic settlements or landscape features (e.g., fences, mill races, etc.)
  - for information on commemorative markers or plaques

The **purpose of the checklist** is to determine:

- if a property(ies) or project area:
  - is a recognized heritage property
  - may be of cultural heritage value
- it includes all areas that may be impacted by project activities, including – but not limited to:
  - the main project area
  - temporary storage
  - staging and working areas
  - temporary roads and detours

**Processes covered** under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

### **Cultural Heritage Evaluation Report (CHER)**

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a qualified person(s) (see page 5 for definitions) to undertake a cultural heritage evaluation report (CHER).

The CHER will help you:

- identify, evaluate and protect cultural heritage resources on your property or project area
- reduce potential delays and risks to a project

### **Other checklists**

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – [separate checklist](#)
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages for more detailed information and when completing this form.

Project or Property Name  
**Highway 7 Sewage Pumping Station**

Project or Property Location (upper and lower or single tier municipality)  
**Lindsay - Highway 7, Lindsay Street South**

Proponent Name  
**The City of Kawartha Lakes**

Proponent Contact Information  
**Jeanorth Sinnakandu - jsinnakandu@greergalloway.com - (613) 966-3068 ext. 392**

### Screening Questions

	<b>Yes</b>	<b>No</b>
1. Is there a pre-approved screening checklist, methodology or process in place?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**If Yes**, please follow the pre-approved screening checklist, methodology or process.

**If No**, continue to Question 2.

### Part A: Screening for known (or recognized) Cultural Heritage Value

	<b>Yes</b>	<b>No</b>
2. Has the property (or project area) been evaluated before and found <b>not</b> to be of cultural heritage value?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**If Yes**, do **not** complete the rest of the checklist.

The proponent, property owner and/or approval authority will:

- summarize the previous evaluation and
- add this checklist to the project file, with the appropriate documents that demonstrate a cultural heritage evaluation was undertaken

The summary and appropriate documentation may be:

- submitted as part of a report requirement
- maintained by the property owner, proponent or approval authority

**If No**, continue to Question 3.

	<b>Yes</b>	<b>No</b>
3. Is the property (or project area):		
a. identified, designated or otherwise protected under the <i>Ontario Heritage Act</i> as being of cultural heritage value?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. a National Historic Site (or part of)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. designated under the <i>Heritage Railway Stations Protection Act</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. designated under the <i>Heritage Lighthouse Protection Act</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**If Yes** to any of the above questions, you need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report, if a Statement of Cultural Heritage Value has not previously been prepared or the statement needs to be updated

If a Statement of Cultural Heritage Value has been prepared previously and if alterations or development are proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

**If No**, continue to Question 4.

## Part B: Screening for Potential Cultural Heritage Value

	Yes	No
4. Does the property (or project area) contain a parcel of land that:		
a. is the subject of a municipal, provincial or federal commemorative or interpretive plaque?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. has or is adjacent to a known burial site and/or cemetery?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. is in a Canadian Heritage River watershed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. contains buildings or structures that are 40 or more years old?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Part C: Other Considerations

	Yes	No
5. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):		
a. is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. has a special association with a community, person or historical event?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. contains or is part of a cultural heritage landscape?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**If Yes** to one or more of the above questions (Part B and C), there is potential for cultural heritage resources on the property or within the project area.

You need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report (CHER)

If the property is determined to be of cultural heritage value and alterations or development is proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

**If No** to all of the above questions, there is low potential for built heritage or cultural heritage landscape on the property.

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g. under the *Environmental Assessment Act*, *Planning Act* processes
- maintained by the property owner, proponent or approval authority

## Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
  - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

For more information, see the Ministry of Tourism, Culture and Sport's [Ontario Heritage Toolkit](#) or [Standards and Guidelines for Conservation of Provincial Heritage Properties](#).

In this context, the following definitions apply:

- **qualified person(s)** means individuals – professional engineers, architects, archaeologists, etc. – having relevant, recent experience in the conservation of cultural heritage resources.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

### 1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may already be in place for identifying potential cultural heritage resources, including:

- one endorsed by a municipality
- an environmental assessment process e.g. screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport (MTCS) under the Ontario government's [Standards & Guidelines for Conservation of Provincial Heritage Properties](#) [s.B.2.]

## Part A: Screening for known (or recognized) Cultural Heritage Value

### 2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?

Respond 'yes' to this question, if all of the following are true:

A property can be considered not to be of cultural heritage value if:

- a Cultural Heritage Evaluation Report (CHER) - or equivalent - has been prepared for the property with the advice of a qualified person and it has been determined not to be of cultural heritage value and/or
- the municipal heritage committee has evaluated the property for its cultural heritage value or interest and determined that the property is not of cultural heritage value or interest

A property may need to be re-evaluated, if:

- there is evidence that its heritage attributes may have changed
- new information is available
- the existing Statement of Cultural Heritage Value does not provide the information necessary to manage the property
- the evaluation took place after 2005 and did not use the criteria in Regulations 9/06 and 10/06

**Note:** Ontario government ministries and public bodies [prescribed under Regulation 157/10] may continue to use their existing evaluation processes, until the evaluation process required under section B.2 of the Standards & Guidelines for Conservation of Provincial Heritage Properties has been developed and approved by MTCS.

To determine if your property or project area has been evaluated, contact:

- the approval authority
- the proponent
- the Ministry of Tourism, Culture and Sport

### 3a. Is the property (or project area) identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value e.g.:

- i. designated under the *Ontario Heritage Act*
  - individual designation (Part IV)
  - part of a heritage conservation district (Part V)

## Individual Designation – Part IV

A property that is designated:

- by a municipal by-law as being of cultural heritage value or interest [s.29 of the *Ontario Heritage Act*]
- by order of the Minister of Tourism, Culture and Sport as being of cultural heritage value or interest of provincial significance [s.34.5]. **Note:** To date, no properties have been designated by the Minister.

## Heritage Conservation District – Part V

A property or project area that is located within an area designated by a municipal by-law as a heritage conservation district [s. 41 of the *Ontario Heritage Act*].

For more information on Parts IV and V, contact:

- municipal clerk
- [Ontario Heritage Trust](#)
- local land registry office (for a title search)

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ii. subject of an agreement, covenant or easement entered into under Parts II or IV of the *Ontario Heritage Act*

An agreement, covenant or easement is usually between the owner of a property and a conservation body or level of government. It is usually registered on title.

The primary purpose of the agreement is to:

- preserve, conserve, and maintain a cultural heritage resource
- prevent its destruction, demolition or loss

For more information, contact:

- [Ontario Heritage Trust](#) - for an agreement, covenant or easement [clause 10 (1) (c) of the *Ontario Heritage Act*]
- municipal clerk – for a property that is the subject of an easement or a covenant [s.37 of the *Ontario Heritage Act*]
- local land registry office (for a title search)

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iii. listed on a register of heritage properties maintained by the municipality

Municipal registers are the official lists - or record - of cultural heritage properties identified as being important to the community.

Registers include:

- all properties that are designated under the *Ontario Heritage Act* (Part IV or V)
- properties that have not been formally designated, but have been identified as having cultural heritage value or interest to the community

For more information, contact:

- municipal clerk
- municipal heritage planning staff
- municipal heritage committee

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iv. subject to a notice of:

- intention to designate (under Part IV of the *Ontario Heritage Act*)
- a Heritage Conservation District study area bylaw (under Part V of the *Ontario Heritage Act*)

A property that is subject to a **notice of intention to designate** as a property of cultural heritage value or interest and the notice is in accordance with:

- section 29 of the *Ontario Heritage Act*
- section 34.6 of the *Ontario Heritage Act*. **Note:** To date, the only applicable property is Meldrum Bay Inn, Manitoulin Island. [s.34.6]

An area designated by a municipal by-law made under section 40.1 of the *Ontario Heritage Act* as a **heritage conservation district study area**.

For more information, contact:

- municipal clerk – for a property that is the subject of notice of intention [s. 29 and s. 40.1]
- [Ontario Heritage Trust](#)

v. included in the Ministry of Tourism, Culture and Sport's list of provincial heritage properties

Provincial heritage properties are properties the Government of Ontario owns or controls that have cultural heritage value or interest.

The Ministry of Tourism, Culture and Sport (MTCS) maintains a list of all provincial heritage properties based on information provided by ministries and prescribed public bodies. As they are identified, MTCS adds properties to the list of provincial heritage properties.

For more information, contact the MTCS Registrar at [registrar@ontario.ca](mailto:registrar@ontario.ca).

### **3b. Is the property (or project area) a National Historic Site (or part of)?**

National Historic Sites are properties or districts of national historic significance that are designated by the Federal Minister of the Environment, under the *Canada National Parks Act*, based on the advice of the Historic Sites and Monuments Board of Canada.

For more information, see the [National Historic Sites website](#).

### **3c. Is the property (or project area) designated under the *Heritage Railway Stations Protection Act*?**

The *Heritage Railway Stations Protection Act* protects heritage railway stations that are owned by a railway company under federal jurisdiction. Designated railway stations that pass from federal ownership may continue to have cultural heritage value.

For more information, see the [Directory of Designated Heritage Railway Stations](#).

### **3d. Is the property (or project area) designated under the *Heritage Lighthouse Protection Act*?**

The *Heritage Lighthouse Protection Act* helps preserve historically significant Canadian lighthouses. The Act sets up a public nomination process and includes heritage building conservation standards for lighthouses which are officially designated.

For more information, see the [Heritage Lighthouses of Canada](#) website.

### **3e. Is the property (or project area) identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office?**

The role of the Federal Heritage Buildings Review Office (FHBRO) is to help the federal government protect the heritage buildings it owns. The policy applies to all federal government departments that administer real property, but not to federal Crown Corporations.

For more information, contact the [Federal Heritage Buildings Review Office](#).

See a [directory of all federal heritage designations](#).

### **3f. Is the property (or project area) located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?**

A UNESCO World Heritage Site is a place listed by UNESCO as having outstanding universal value to humanity under the Convention Concerning the Protection of the World Cultural and Natural Heritage. In order to retain the status of a World Heritage Site, each site must maintain its character defining features.

Currently, the Rideau Canal is the only World Heritage Site in Ontario.

For more information, see Parks Canada – [World Heritage Site website](#).

## **Part B: Screening for potential Cultural Heritage Value**

### **4a. Does the property (or project area) contain a parcel of land that has a municipal, provincial or federal commemorative or interpretive plaque?**

Heritage resources are often recognized with formal plaques or markers.

Plaques are prepared by:

- municipalities
- provincial ministries or agencies
- federal ministries or agencies
- local non-government or non-profit organizations

For more information, contact:

- [municipal heritage committees](#) or local heritage organizations – for information on the location of plaques in their community
- Ontario Historical Society's [Heritage directory](#) – for a list of historical societies and heritage organizations
- Ontario Heritage Trust – for a [list of plaques](#) commemorating Ontario's history
- Historic Sites and Monuments Board of Canada – for a [list of plaques](#) commemorating Canada's history

#### **4b. Does the property (or project area) contain a parcel of land that has or is adjacent to a known burial site and/or cemetery?**

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulations, Ontario Ministry of Consumer Services – for a [database of registered cemeteries](#)
- Ontario Genealogical Society (OGS) – to [locate records of Ontario cemeteries](#), both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to [locate early cemeteries](#)

In this context, adjacent means contiguous or as otherwise defined in a municipal official plan.

#### **4c. Does the property (or project area) contain a parcel of land that is in a Canadian Heritage River watershed?**

The Canadian Heritage River System is a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage.

Canadian Heritage Rivers must have, and maintain, outstanding natural, cultural and/or recreational values, and a high level of public support.

For more information, contact the [Canadian Heritage River System](#).

If you have questions regarding the boundaries of a watershed, please contact:

- your conservation authority
- municipal staff

#### **4d. Does the property (or project area) contain a parcel of land that contains buildings or structures that are 40 or more years old?**

A 40 year 'rule of thumb' is typically used to indicate the potential of a site to be of cultural heritage value. The approximate age of buildings and/or structures may be estimated based on:

- history of the development of the area
- fire insurance maps
- architectural style
- building methods

Property owners may have information on the age of any buildings or structures on their property. The municipality, local land registry office or library may also have background information on the property.

**Note:** 40+ year old buildings or structure do not necessarily hold cultural heritage value or interest; their age simply indicates a higher potential.

A building or structure can include:

- residential structure
- farm building or outbuilding
- industrial, commercial, or institutional building
- remnant or ruin
- engineering work such as a bridge, canal, dams, etc.

For more information on researching the age of buildings or properties, see the Ontario Heritage Tool Kit Guide [Heritage Property Evaluation](#).

## Part C: Other Considerations

### 5a. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) is considered a landmark in the local community or contains any structures or sites that are important to defining the character of the area?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has potential landmarks or defining structures and sites, for instance:

- buildings or landscape features accessible to the public or readily noticeable and widely known
- complexes of buildings
- monuments
- ruins

### 5b. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) has a special association with a community, person or historical event?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has a special association with a community, person or event of historic interest, for instance:

- Aboriginal sacred site
- traditional-use area
- battlefield
- birthplace of an individual of importance to the community

### 5c. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) contains or is part of a cultural heritage landscape?

Landscapes (which may include a combination of archaeological resources, built heritage resources and landscape elements) may be of cultural heritage value or interest to a community.

For example, an Aboriginal trail, historic road or rail corridor may have been established as a key transportation or trade route and may have been important to the early settlement of an area. Parks, designed gardens or unique landforms such as waterfalls, rock faces, caverns, or mounds are areas that may have connections to a particular event, group or belief.

For more information on Questions 5.a., 5.b. and 5.c., contact:

- Elders in Aboriginal Communities or community researchers who may have information on potential cultural heritage resources. Please note that Aboriginal traditional knowledge may be considered sensitive.
- [municipal heritage committees](#) or local heritage organizations
- Ontario Historical Society's "[Heritage Directory](#)" - for a list of historical societies and heritage organizations in the province

An internet search may find helpful resources, including:

- historical maps
- historical walking tours
- municipal heritage management plans
- cultural heritage landscape studies
- municipal cultural plans

Information specific to trails may be obtained through [Ontario Trails](#).

### Purpose

The **purpose of this checklist** is to help proponents determine:

- if a property or project area may contain marine archaeological resources or have marine archaeological potential

A marine archaeological site is fully or partially submerged, or lies below or partially below the high-water mark of any body of water.

The property or project area includes all submerged areas that may be impacted by project activities, including, but not limited to:

- the main project area
- temporary storage and stockpiling locations
- staging and work areas, such as docking platforms and dredging locations
- temporary features such as access routes, anchors, moorings and cofferdams.

Please refer to the **instructions** on pages 4 through 9 when completing this checklist

### Processes covered

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregate Resources Act*
- *Ontario Heritage Act*
  - Standards & Guidelines for Conservation of Provincial Heritage Properties
- *Canadian Environmental Assessment Act*
- *Canada Shipping Act*

### Marine archaeological assessment

The assessment will help you:

- identify, evaluate and protect marine archaeological resources on your property or project area
- reduce potential delays and risks to your project

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a licensed marine archaeologist (defined on page 5) to undertake a marine archaeological assessment.

Note: Under Part VI of the *Ontario Heritage Act*, all marine archaeological assessments **must** be done by a licensed marine archaeologist. Only a licensed marine archaeologist can assess – or alter – a marine archaeological site.

### Have you found a site?

If you find something you think may be of marine archaeological value during project work, you **must** – by law – stop all activities immediately and contact a licensed marine archaeologist. The marine archaeologist will carry out the fieldwork in compliance with the *Ontario Heritage Act*.

### Have you found human remains?

If you find remains (e.g., bones) that could be of human origin, you **must** – by law - immediately notify the appropriate authorities (police, coroner's office, or Registrar of Cemeteries) and comply with the *Funeral, Burial and Cremation Services Act*.

### Other Checklists

Please use a separate checklist for your project if:

- your Parent Class EA document has approved screening criteria
- your ministry's or prescribed public body's approved Identification and Evaluation Process includes approved screening criteria

Project or Property Name  
Highway 7 Sewage Pumping Station

Project or Property Location (upper and lower or single tier municipality)  
Lindsay - Highway 7, Lindsay Street South

Proponent Name  
The City of Kawartha Lakes

**Proponent Contact Information**

Telephone Number  
613-966-3068

Fax Number

Email Address  
jsinnakandu@greergalloway.com

**Screening Questions**

1. Is there a government-authorized, pre-approved screening checklist, methodology or process in place?

Yes  No

If **Yes**, please follow the pre-approved screening checklist, methodology or process. Do not complete the rest of this checklist.

If **No**, continue to Question 2.

2. Has a marine archaeological assessment been prepared for the property or project area and been entered by MTCS into the Ontario Public Register of Archaeological Reports?

Yes  No

If **Yes**, do **not** complete the rest of the checklist. You are expected to follow the recommendations in the marine archaeological assessment report(s).

The proponent and/or approval authority will:

- summarize the previous marine archaeological assessment
- follow any recommendations for further marine archaeological assessment work, as applicable
- add this checklist to the project file, with the appropriate documents that demonstrate a marine archaeological assessment was undertaken (e.g. MTCS letter that states that the report has been entered into the Ontario Public Register of Archaeological Reports)

The summary and appropriate documentation may be:

- submitted as part of a report requirement, e.g. environmental assessment document
- maintained by the proponent or approval authority

If **No**, continue to Question 3.

3. Are there known marine or land-based archaeological sites on or within 500 metres of the property or project area?

Yes  No

4. Is there Aboriginal or local knowledge of marine or land-based archaeological sites on or within 500 metres of the property or project area?

Yes  No

5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 500 metres of the property or project area?

Yes  No

6. Is there a known burial site or cemetery on the property or adjacent to the property or project area?

Yes  No

7. Has the property or project area been recognized for its cultural heritage value?

Yes  No

If **Yes** to any of questions 3 to 7, do **not** complete the checklist. Your property or project area could contain marine archaeological resources: please hire a licensed marine archaeologist to conduct a marine archaeological assessment.

If **No**, continue to Question 8.

8. Has the entire property or project area been subjected to recent, extensive and intensive disturbance?

Yes  No

If **Yes**, do **not** complete the checklist. Instead, please keep and maintain a summary of documentation that provides evidence of the recent disturbance. A marine archaeological assessment is not required.

If **No**, continue to Question 9.

9. Are there two or more reported or registered ship wreck sites or reports of lost ships within a five kilometre radius of the property or project area?

Yes  No

If **Yes**, a marine archaeological assessment is required.

If **No**, continue to Question 10.

10. Is the property or project area within one kilometre of an active or historic harbour, seaplane or floatplane base, tunnel, ferry route, marine terminal, or winter road?

Yes  No

If **Yes**, a marine archaeological assessment is required.

If **No**, continue to Question 11.

11. Where the project impacts fourth order or higher watercourses, are there existing narrows, rapids, waterfalls or does the watercourse enter or leave a body of water within 300 metres of the property or project area?

Yes  No

If **Yes**, a marine archaeological assessment is required.

If **No**, continue to Question 12.

12. Are there potential built heritage or cultural heritage landscape resources that may be of cultural heritage value or interest adjacent to the watercourse or water body?

Yes  No

If **Yes**, a marine archaeological assessment is required.

If **No**, continue to Question 13.

13. Are there inundated beaches, bluffs, lakeshores, streams or river banks within 300 metres of the property or project area?

Yes  No

If **Yes**, a marine archaeological assessment is required.

If **No**, continue to Question 14.

14. Are there inundated beaches, lakeshores or river/creek banks beyond 300 metres and at greater depth than the project area with evidence of two or more of the following in the project area?

- elevated bathymetric features such as drumlins, eskers, kames, ridges, etc.
- pockets of sandy lakebed
- distinctive bathymetric formations such as escarpments, shoals, promontories, reefs, etc.
- inundated resource extraction areas (quarry, fishery)
- inundated historical settlement including built heritage resources or cultural heritage landscapes
- inundated historical transportation routes

Yes  No

If **Yes**, a marine archaeological assessment is required.

If **No**, there is low potential for marine archaeological resources at the property (or project area).

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project report or file

The summary and appropriate documentation may be:

- submitted as part of a report requirement, e.g. under the *Environmental Assessment Act, Planning Act* processes
- maintained and retained by the property owner, proponent or approval authority

## Instructions

Please have the following available, when requesting information related to the screening questions:

- a clear map or chart showing the location and boundary of the property or project area
  - large scale and small scale maps/charts showing nearby islands or township names for context
- the municipal addresses of all properties or water lots within or adjacent to the project area, if any
- the lot, concession, parcel number or mining claims of any properties within the project area

In this context, the following definitions apply:

- **licensed marine archaeologist** means an archaeologist who has a valid marine archaeology licence issued by the Ministry of Tourism, Culture and Sport to practice in Ontario. As a consultant, a licensed marine archaeologist enters into an agreement with a client to carry out or supervise marine archaeological work on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

### 1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may be already in place to identify marine archaeological potential, including:

- one prepared and adopted by the municipality, such as an archaeological management plan
- an environmental assessment process, such as a screening checklist for municipal bridges
- projects being reviewed under the Canadian *Environmental Assessment Act*.
- one that is approved by the Ministry of Tourism, Culture and Sport under the Ontario government's [Standards & Guidelines for Conservation of Provincial Heritage Properties](#) [s. B.2.]

### 2. Has a marine archaeological assessment been prepared for the property or project area and been entered into the Ontario Public register of Archaeological Reports?

Respond 'yes' to this question, if all of the following are true:

- a marine archaeological assessment report has been prepared and complies with MTCS requirements
  - a letter has been sent by MTCS to the licensed marine archaeologist confirming that MTCS has entered the report into the Ontario Public Register of Archaeological Reports (Register)
- the report contains a recommendation stating that there are no further concerns regarding impacts to marine archaeological sites

If a marine archaeological assessment report has been completed and deemed compliant by MTCS, and the report contains a recommendation that further marine archaeological assessment work be undertaken, this work will need to be completed.

For more information about previously conducted marine archaeological assessments, contact:

- approval authority (such as a municipality or conservation authority)
- proponent for whom the marine archaeological assessment was carried out
- consultant archaeologist qualified to hold a marine archaeology licence in Ontario
- Ministry of Tourism, Culture and Sport at [archaeology@ontario.ca](mailto:archaeology@ontario.ca)

### 3. Are there known marine or land-based archaeological sites on or within 500 metres of the property or project area?

MTCS maintains a database of marine and land-based archaeological sites reported to the ministry. Land-based archaeological sites may extend into adjacent waterbodies.

For more information, contact MTCS Archaeological Data Coordinator at [archaeology@ontario.ca](mailto:archaeology@ontario.ca).

4. Is there Aboriginal or local knowledge of marine or land-based archaeological sites on or within 500 metres of the property or project area?

Check with:

- Aboriginal communities in your area
- local municipal staff

Aboriginal communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Aboriginal communities includes a discussion about known or potential cultural heritage resources that are of value to these communities. Aboriginal communities and local municipal staff may have information about marine archaeological sites that are not included in the MTCS database or reported to the ministry.

Other sources of local knowledge include the following:

- property owner
- [local heritage organizations and historical societies](#), [Association for Great Lakes Maritime History](#)
- local and provincial dive organizations ([Save Ontario Shipwrecks](#), [Ontario Underwater Council](#)), [Preserve Our Wrecks](#), Ontario Marine Heritage Committee)
- local dive shops
- local amateur divers and diving associations
- local museums
- [municipal heritage committees](#)
- published local histories

5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 500 metres of the property or project area?

Check with:

- Aboriginal communities in your area
- local municipal staff

Other sources of local knowledge include the following:

- property owner
- [local heritage organizations and historical societies](#)
- local museums
- [municipal heritage committees](#)
- published local histories

6. Is there a known burial site or cemetery on the property or adjacent to the property or project area?

For more information on known cemeteries or burial sites contact the following:

- Cemeteries Regulation Unit, Ontario Ministry of Consumer Services – for [database of registered cemeteries](#)
- Ontario Genealogical Society (OGS) – [to locate records of Ontario cemeteries](#), both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to [locate early cemeteries](#)

In this context, 'adjacent' means 'contiguous', or as otherwise defined in a municipal official plan.

When wrecks are associated with a loss of life, the area in the vicinity of the wreck may be established as a cemetery.

7. Has the property or project area been recognized for its cultural heritage value?

There is a strong chance there may be marine archaeological resources on the property or project area if it has been listed, designated or otherwise identified as being of cultural heritage value by:

- Municipal government
- Ontario government
- Canadian government

This includes a property that is:

- designated under *Ontario Heritage Act* (the OHA ), including:
  - individual designation (Part IV)
  - part of a heritage conservation district (Part V)
  - a land or marine archaeological site (Part VI)
- subject to:
  - an agreement, covenant or easement entered into under the OHA (Parts II or IV)
  - a notice of intention to designate (Part IV)
  - a heritage conservation district study area by-law (Part V) of the OHA
- included on:
  - a municipal register or inventory of heritage properties
  - Ontario government's list of provincial heritage properties
  - Federal government's list of federal heritage buildings
- part of a:
  - National Historic Site
  - UNESCO World Heritage Site
- designated under:
  - *Heritage Railway Station Protection Act*
  - *Heritage Lighthouse Protection Act*
- subject of a municipal, provincial or federal commemorative or interpretive plaque.

To determine if your property or project area is covered by any of the above, see:

- Part A of the MTCS [Criteria for Evaluating Potential for Built Heritage and Cultural Heritage Landscapes](#)

#### **Part VI – Archaeological Sites**

Includes three marine archaeological sites prescribed under Ontario Regulation 11/06 and five terrestrial archaeological sites designated by the Minister under Regulation 875 of the Revised Regulation of Ontario, 1990.

For more information, refer to [Regulation 875](#) and Ontario [Regulation 11/06](#).

8. Has the entire property or project area been subjected to recent, extensive and intensive disturbance?

Recent: after-1960

Extensive: over all or most of the area

Intensive: thorough or complete disturbance

Examples of ground disturbance include:

- quarrying
- dredging
- structural footprints and associated construction areas
  - where the structure has deep foundations or footings
- infrastructure development such as:
  - dams
  - pipelines, hydro lines or other utility trenches
  - causeways
  - bridges

Note: this applies only to the excavated part of the right-of-way or corridor as the remainder may not be impacted

A ground disturbance does not include:

- aqua-cultural activities, such as a fish farm
- areas of traditional or commercial harvesting of fish, shellfish or water-based vegetation
- traditional agricultural areas that have been inundated

Property (Project Area) Inspection

Some documentation may provide evidence of prior disturbance, such as:

- photographs
- maps
- detailed descriptions and blueprints of prior projects

If complete disturbance isn't clear from documents available, an archaeologist licensed for marine archaeology can be hired to undertake an underwater and/or remote-sensing inspection of the study area to determine whether there is any remaining marine archaeological potential.

9. Are there two or more reported or registered ship wreck sites or reports of lost ships within a five kilometre radius of the property or project area?

The presence of two or more ship wreck sites or reports of lost ships in the vicinity may indicate increased marine archaeological potential for additional marine wrecks.

10. Is the property or project area within one kilometre of an active or historic harbour, seaplane or floatplane base, tunnel, ferry route, marine terminal, or winter road?

Focussed areas of marine activity on- and off-shore are indicators for potential marine archaeology due to:

- deliberate structures built in or on the water, such as:
  - mooring and anchoring structures
  - weirs, piers, docks, cribwork
  - groynes, breakwaters, artificial reefs
  - vessels scuttled for utilitarian or other purposes
  - infrastructure related to the construction or operation of a facility like marine railways
- incidental features, such as:
  - beached or sunken vessels or aircraft
  - dropped objects

As a result, there is potential for marine archaeological features or artifacts.

11. Where the project impacts fourth order or higher watercourses, are there existing narrows, rapids, waterfalls or does the watercourse enter or leave a body of water within 300 metres of the property or project area?

Fourth order and higher watercourses (on the Strahler scale) have potential association with human activity around narrows, rapids, waterfalls and proximity to waterbodies such as lakes due to:

- fish harvesting and related dams or weirs
- portage locations for navigable waterways
- early historical fording locations
- early historical water power sources for mills

These activities may result in marine archaeological features or artifacts.

12. Are there potential built heritage or cultural heritage landscape resources that may be of cultural heritage value or interest adjacent to the watercourse or water body?

Euro-Canadian settlement immediately adjacent to water bodies or watercourses may be focussed on the water for specific industrial, commercial or residential uses resulting in marine archaeological features or artifacts. For guidance, see the MTCS [Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes](#)

13. Are there inundated beaches, bluffs, lakeshores, streams or river banks within 300 metres of the property or project area?

The margins of water bodies are associated with past human occupations and use of the land. About 80-90% of archaeological sites are found within 300 metres of water bodies.

- water body types:
  - primary - lakes, rivers, streams, creeks
  - secondary - springs, marshes, swamps and intermittent streams and creeks
- water bodies can include constructed water bodies or watercourses, such as:
  - temporary channels for surface drainage
  - rock chutes and spillways
- Accessible or inaccessible shorelines can also have archaeological potential, for example:
  - high bluffs or cliffs
  - sandbars

You can get information about inundated shoreline features through:

- a site visit
- aerial photographs
- bathymetric data
- geological and physiographic studies

14. Are there inundated beaches, lakeshores or river/creek banks beyond 300 metres and at greater depth than the project area with evidence of two or more of the following in the project area?

- elevated bathymetric features such as drumlins, eskers, kames, ridges, etc.
- pockets of sandy lakebed
- distinctive bathymetric formations such as escarpments, shoals, promontories, reefs, etc.
- inundated resource extraction areas (quarry, fishery)
- inundated historical settlement including built heritage resources or cultural heritage landscapes
- inundated historical transportation routes

Landforms associated with past human occupations that have later been inundated, as historically documented or demonstrated through water-level chronologies, retain their archaeological potential.

- **Elevated bathymetric features**

Higher ground and elevated positions, surrounded by low or level topography, often indicate past settlement and land use. Features such as eskers, drumlins, sizeable knolls, plateaus next to lowlands or other such features are a strong indication of archaeological potential.

Find out if your property or project area had elevated topography prior to inundation through:

- nautical charts
- bathymetric data

- **Pockets of sandy lakebed**

Areas of sandy soil, prior to being inundated, that would be well-drained and in areas characterized by heavy soil or rocky ground may indicate archaeological potential

Find out if your property or project area had sandy soil through:

- site visits
- lakebed studies and sediment borehole data

- **Distinctive bathymetric formations**

Distinctive land formations include – but are not limited to:

- waterfalls
- rock outcrops or faces
- caverns
- mounds

Prior to inundation such features were often important to past inhabitants as special or sacred places. The following sites may be present at – or close to – these formations:

- burials
- structures
- offerings
- rock paintings or carvings

Find out if your property or project area has a distinctive land formation through:

- site visits
- aerial photographs
- bathymetric data

- **Inundated resource extraction areas**

Prior to inundation, the following resources were collected in these extraction areas:

- food or medicinal plants e.g. migratory routes, spawning areas, prairie
- scarce raw materials e.g. quartz, copper, ochre or outcrops of chert
- resources associated with early historic industry e.g. fur trade, logging, prospecting, mining

Aboriginal communities may hold traditional knowledge about their past use or resources in the area.

- **Inundated early historic settlement**

Early Euro-Canadian settlements include – but are not limited to:

- early military or pioneer settlement, e.g. pioneer homesteads, isolated cabins, farmstead complexes
- early wharf or dock complexes
- pioneers churches and early cemeteries

- **Inundated early historic transportation routes** - such as trails, passes, roads, railways, portage routes, canals.

For more information, see:

- historical maps or atlases
  - for information on early settlement patterns such as trails (including Aboriginal trails), monuments, structures, fences, mills, historic roads, rail corridors, canals, etc.
  - [Archives of Ontario](#) holds a large collection of historical maps and atlases
  - digital versions of historical atlases are available on the [Canadian County Atlas Digital Project](#)
- commemorative markers or plaques such as those posted by local, [provincial](#) or [federal](#) agencies
- [municipal heritage committees](#) or [other local heritage organizations](#)
  - for information on early historic settlements or landscape features (e.g. fences, mill races)
  - for information on commemorative markers or plaques

## **APPENDIX G: Cost Estimate**

Item Spec. #	Description	Unit	Quantity	Unit Price	Total Amount
1	Mobilization and Demobilization	LS	1	\$ 100,000.00	\$ 100,000.00
2	Insurance and Bonding	LS	1	\$ 100,000.00	\$ 100,000.00
3	Maintenance Manuals and Record Drawings	LS	1	\$ 10,000.00	\$ 10,000.00
4	Supply and Installation of New Sewage Pumps	LS	1	\$ 100,000.00	\$ 100,000.00
5	Supply and Installation of New Discharge Piping and Valves	LS	1	\$ 100,000.00	\$ 100,000.00
6	Installation of New 200 mm Forcemain, Fittings, and Connections to Limits	m	1000	\$ 1,000.00	\$ 1,000,000.00
7	Mechanical General Work	LS	1	\$ 150,000.00	\$ 150,000.00
8	Electrical General Work	LS	1	\$ 150,000.00	\$ 150,000.00
9	Supply and Installation of Instrumentation and Controls	LS	1	\$ 150,000.00	\$ 150,000.00
10	Supply and Installation of New Outdoor Generator Set	LS	1	\$ 150,000.00	\$ 150,000.00
11	Supply and Installation of New Automatic Transfer Switch (ATS)	LS	1	\$ 50,000.00	\$ 50,000.00
12	Supply and Installation of Outdoor Genset Concrete Pad	LS	1	\$ 20,000.00	\$ 20,000.00

13	Supply and installation of prefabricated wet well	LS		1	\$ 200,000.00	\$ 200,000.00
14	Environmental Protection and Dewatering	LS		1	\$ 50,000.00	\$ 50,000.00
15	Excavation, Backfill, and Removal of Material	LS		1	\$ 150,000.00	\$ 150,000.00
16	Site Works	LS		1	\$ 100,000.00	\$ 100,000.00
17	Contingencies	LS		1	\$ 200,000.00	\$ 200,000.00
18	<b>Subtotal</b>					\$ 2,780,000.00
19	Contract Administration		7%	1		\$ 194,600.00
					<b>Sub-Total</b>	<b>\$ 2,974,600.00</b>
					<b>13% H.S.T.</b>	<b>\$ 386,698.00</b>
					<b>TOTAL</b>	<b>\$ 3,361,298.00</b>

## **APPENDIX H: Notice of Commencement**



## The City of Kawartha Lakes

### NOTICE OF COMMENCEMENT

#### Highway 7 Sewage Pumping Station – Class Environmental Assessment

The City of Kawartha Lakes (City) is initiating a planning process to expand the wastewater collection system for the community of Lindsay. The community of Lindsay is rapidly expanding with new developments and requires upgrades to the wastewater collection system to support the increasing needs of the residents of the community. The project is being carried out with the requirements for a Schedule 'B' project under the terms of the Municipal Class Environmental Assessment (Class EA) process. A keymap is attached showing the location of the proposed construction of a new Sewage Pumping Station as part of the development of the Gateway Subdivision. The Class EA process includes:

- Consultation with the public, review agencies, and other stakeholders
- Field investigations
- Evaluation of viable alternative solutions
- Assessment of the impacts of the alternative solutions and identification of measures to mitigate any adverse environmental, social, cultural, and economic impacts
- Selection of a preferred solution

**Public input** into the planning and design of this project is encouraged. The City will be sharing information with the Public and interested Stakeholders through the City's website. As part of the Class EA process for reviewing the upgrades to the wastewater collection system, a Public Information Centre (PIC) will be conducted by the City. Notice of this PIC will be provided at least two weeks in advance. If you have any comments or questions regarding this project, or would like to receive further information, please send an email to one of the following project contacts:

Marten Leclerc  
Senior Engineering Tech  
City of Kawartha Lakes  
26 Francis Street  
Lindsay, ON, K9V 5R8  
T: (705) 324 9411 x 1131  
Email: [mleclerc@kawarthalakes.ca](mailto:mleclerc@kawarthalakes.ca)

Tony Guerrero, P.Eng.  
The Greer Galloway Group Inc.  
1620 Wallbridge Loyalist Road  
Belleville, ON K8N 4Z5  
T: (613) 966-3068  
F: (613) 966-3087  
Email: [tguerrera@greergalloway.com](mailto:tguerrera@greergalloway.com)

This notice issued February 6, 2024

Under the *Freedom of Information and Protection of Privacy Act* and the *Environmental Assessment Act*, unless otherwise stated in the submission, any personal information such as name, address, telephone

number and property location included in a submission will become part of the public record files for this project and will be released, if requested, to any person.

# New Highway 7 SPS Lindsay

## Legend

 Approximate Location of Proposed New SPS

 Approximate Location of Proposed New SPS

le Cemetery and Crematorium

 Kawartha Shawarma and Pizza

15

 The Little Sunflower Farm

Hwy 7

7

Google Earth

 Boyer Chevrolet 1500 ft



## **APPENDIX I: Public Information Centre**



The City of Kawartha Lakes

## NOTICE OF PUBLIC INFORMATION CENTER

### Highway 7 Sewage Pumping Station – Class Environmental Assessment

The City of Kawartha Lakes (City) is currently planning to upgrade the wastewater collection system for the community of Lindsay. The community of Lindsay is rapidly expanding with new developments and requires upgrades to the wastewater collection system to support the increasing needs of the residents of the community.

The project is being carried out with the requirements for a Schedule 'B' project under the terms of the Municipal Class Environmental Assessment (Class EA) process. As part of the class EA process for reviewing the upgrades to the wastewater collection system, public comment during the evaluation of alternatives will be requested.

The City is conducting a public information center on **Wednesday, May 22, 2024 from 5:00 pm to 7:00 pm**. This will be held at the **Victoria Room at City Hall**, located at **26 Francis St, Lindsay, ON K9V 5R8**. We are interested in hearing any comments or concerns that you may have about this project. A public database of comments will be maintained and, except for personal information, included in the study documentation made available for public review. Parties interested in providing input or that wish to obtain additional information at this stage of the study are asked to submit comments in writing to:

Marten Leclerc  
Senior Engineering Tech  
City of Kawartha Lakes  
26 Francis Street  
Lindsay, ON, K9V 5R8  
T: (705) 324 9411 x 1131  
Email: mleclerc@kawarthalakes.ca

Tony Guerrero, P.Eng.  
The Greer Galloway Group Inc.  
1620 Wallbridge Loyalist Road  
Belleville, ON K8N 4Z5  
T: (613) 966-3068  
F: (613) 966-3087  
Email: tguerrera@greergalloway.com

This notice issued May 8, 2024

Under the *Freedom of Information and Protection of Privacy Act* and the *Environmental Assessment Act*, unless otherwise stated in the submission, any personal information such as name, address, telephone number and property location included in a submission will become part of the public record files for this project and will be released, if requested, to any person.

# New Highway 7 SPS Lindsay

## Legend

 Approximate Location of Proposed New SPS

 Approximate Location of Proposed New SPS

le Cemetery and Crematorium

 Kawartha Shawarma and Pizza

15

 The Little Sunflower Farm

Hwy 7

7

Google Earth

 Boyer Chevrolet 1500 ft



# Public Information Centre

## New Highway 7 Sewage Pumping Station

May 22, 2024

Location:

Victoria Room – City Hall

Time:

5:00 pm – 7:00 pm



# Background Information

The City of Kawartha Lakes (City) is initiating a planning process to expand the wastewater collection system for the community of Lindsay. The community of Lindsay is rapidly expanding with new developments and requires upgrades to the wastewater collection system to support the increasing needs of the residents of the community.

One of the new developments is the Gateway Subdivision located on Highway 7 and Lindsay St. South. Upgrades to the wastewater collection system will be required to support the new homes to be built in the subdivision.

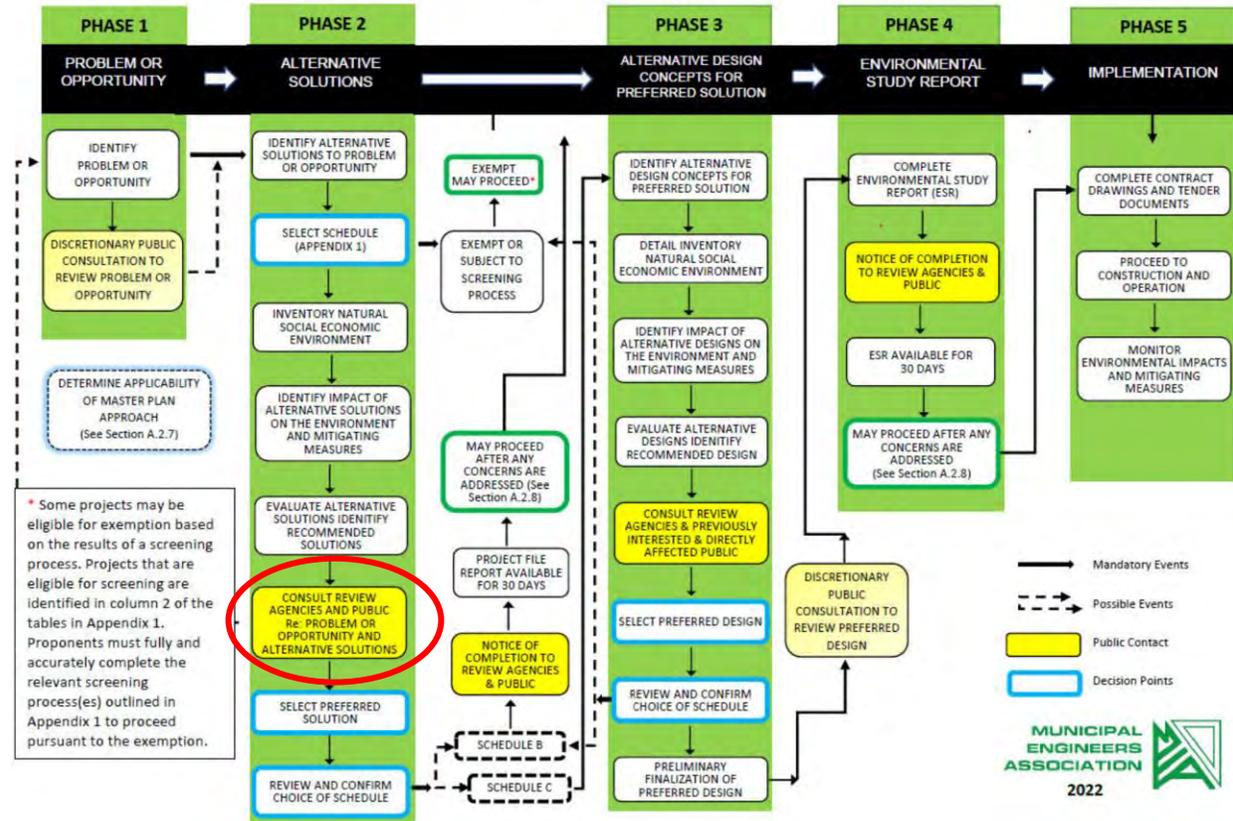
These upgrades and recommendations will be carried out as a Schedule 'B' project under the terms of the Municipal Class Environmental Assessment (Class EA) process, which is approved under the Environmental Assessment Act.

## Municipal Class EA Process

- Meets the requirements of Ontario's Environmental Assessment Act by ensuring that potential environmental impacts of projects are considered.
- Consultation with the public and interested stakeholders including government review agencies and First Nations is required to identify environmental impacts of alternative solutions, develop mitigating measures and identify a preferred solution.

EXHIBIT A.2. MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS

NOTE: This flow chart is to be read in conjunction with Part A of the MCEA



# Opportunity Statement

New and future developments within the community of Lindsay including the Gateway Subdivision, require upgrades to the capacity of the existing wastewater collection system.

## Alternatives

### **Do Nothing**

This alternative would have the lowest capital cost and would involve continuing to use the existing wastewater collection system without any changes. This alternative is not feasible as the current system will not be able to support future developments.

### **Gravity Sewer System for New Development**

This option involves servicing all new properties with gravity sewers. This is not a viable option because all properties will not meet the required elevations for gravity sewers to connect to the existing wastewater collection system.

### **New Sewage Pumping Station**

This alternative involves constructing a new sewage pumping station facility within the new Gateway Subdivision development site. A new wet well system of sufficient storage volume with submersible pumps to meet the flow requirements for the wastewater collection system is considered a viable option.

# Alternatives Evaluation Matrix

City of Kawartha Lakes Highway 7 Pumping Station							
Project No. 2337786							
Evaluation of Alternative Solutions							
Description/Elements	Weighing Factor	Alt. 1		Alt. 2		Alt. 3	
		Do Nothing		Gravity Sewer System for New Development		New Sewage Pumping Station	
		Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
Meet Flow Capacity Requirements	0.25	0	0	0	0	5	1.25
Site/Neighbourhood/Impact/Noise/Odour/Aesthetics	0.05	5	0.25	5	0.25	4	0.2
Property Acquisition/Availability	0.05	5	0.25	5	0.25	5	0.25
Expansion Potential	0.2	0	0	1	0.2	5	1
Ease of Integration/Constructability	0.05	5	0.25	2	0.1	4	0.2
Terrestrial Habitat/Wildlife	0.05	5	0.25	5	0.25	5	0.25
Archaeological Resources	0.05	5	0.25	5	0.25	5	0.25
Operability	0.1	0	0	0	0	5	0.5
Capital/Operating Costs	0.2	5	1	4	0.8	3	0.6
<b>Total Weighted Score</b>	<b>1</b>		<b>2.25</b>		<b>2.1</b>		<b>4.5</b>

\*Scoring: 5 is the highest (best). The highest scoring alternative reflects the preferred solution

# Preferred Alternative

- The preferred alternative is a new sewage pumping station located within the Gateway Subdivision.
- The new station is expected to be a wet well system with submersible pumps rated to provide 35 L/s of flow each, in a duty-standby configuration. The station will be equipped with emergency power systems with an outdoor generator to allow operations to continue if utility power is lost.
- The station is proposed to be in the designated Block 45 of the new Gateway Subdivision. The station property will be enclosed with a fence.
- The new forcemain will extend from the proposed station and travel north to connect to maintenance hole MH 331A. Sewage will be pumped from the new station to MH 331A, then travel by gravity sewer north to Logie St. SPS.
- The high-level cost estimate for construction of the station and forcemain, is \$2,975,000 excluding HST. Potential construction will be funded through development charges.

# New Highway 7 SPS

Servicing Areas

## Legend

-  Additional Properties Served by Pumping Station
-  Gateway Subdivision Served by Gravity Sewer
-  Gateway Subdivision Served by Pumping Station
-  Approximate Location of Proposed New SPS

Estimated wastewater flows from Gateway Subdivision	30.78 L/s
Estimated wastewater flows from additional serviced properties	3.5 L/s
Total wastewater flows	34.28 L/s
Pumping Station Design Flow	35 L/s

Gateway Subdivision Served by Gravity Sewer

Additional Properties Served by Pumping Station

Gateway Subdivision Served by Pumping Station

Approximate Location of Proposed New SPS

Lindsay Street S

Lindsay Street S

Highway 7

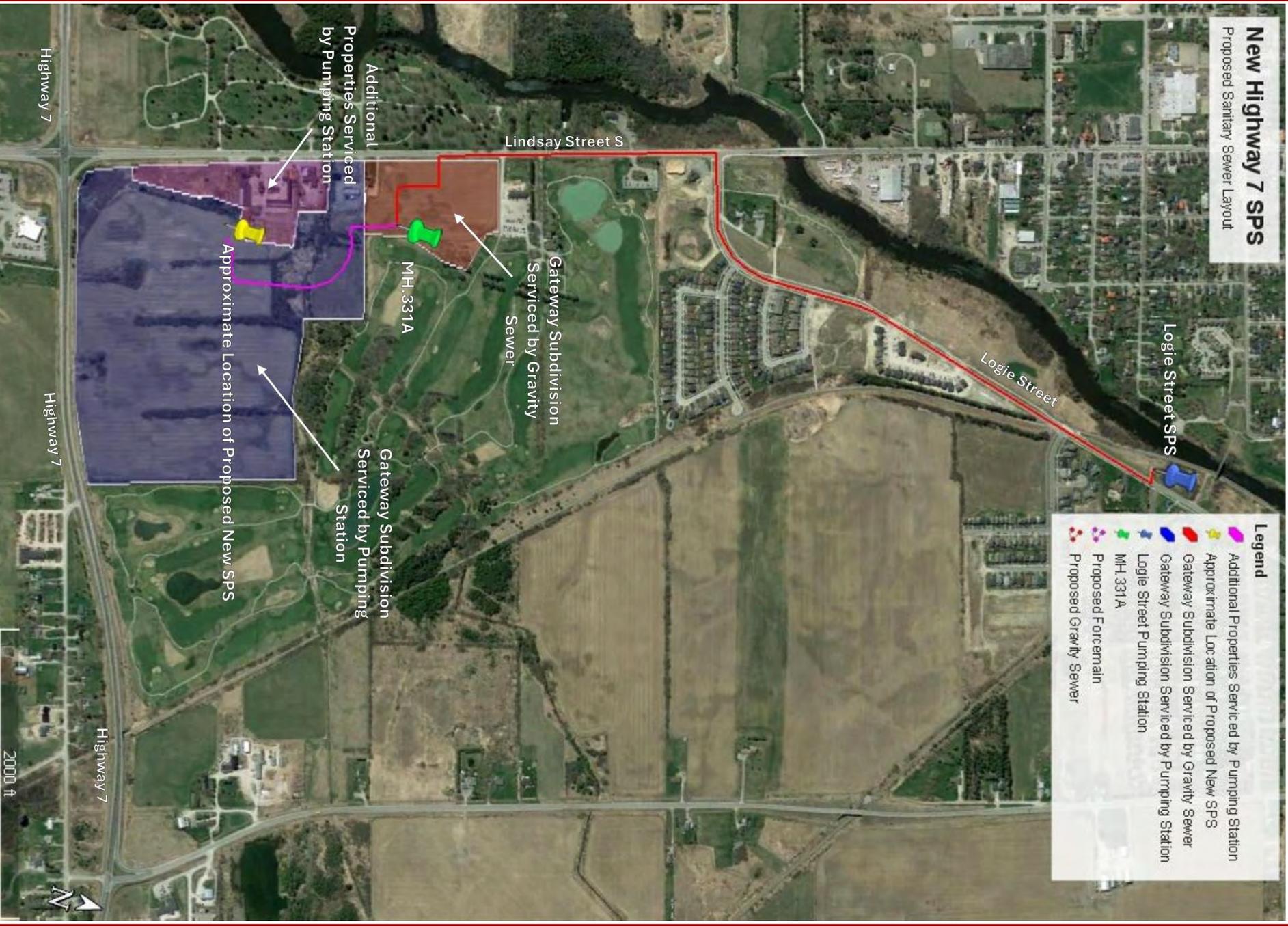
Highway 7

Golden Mile Rd

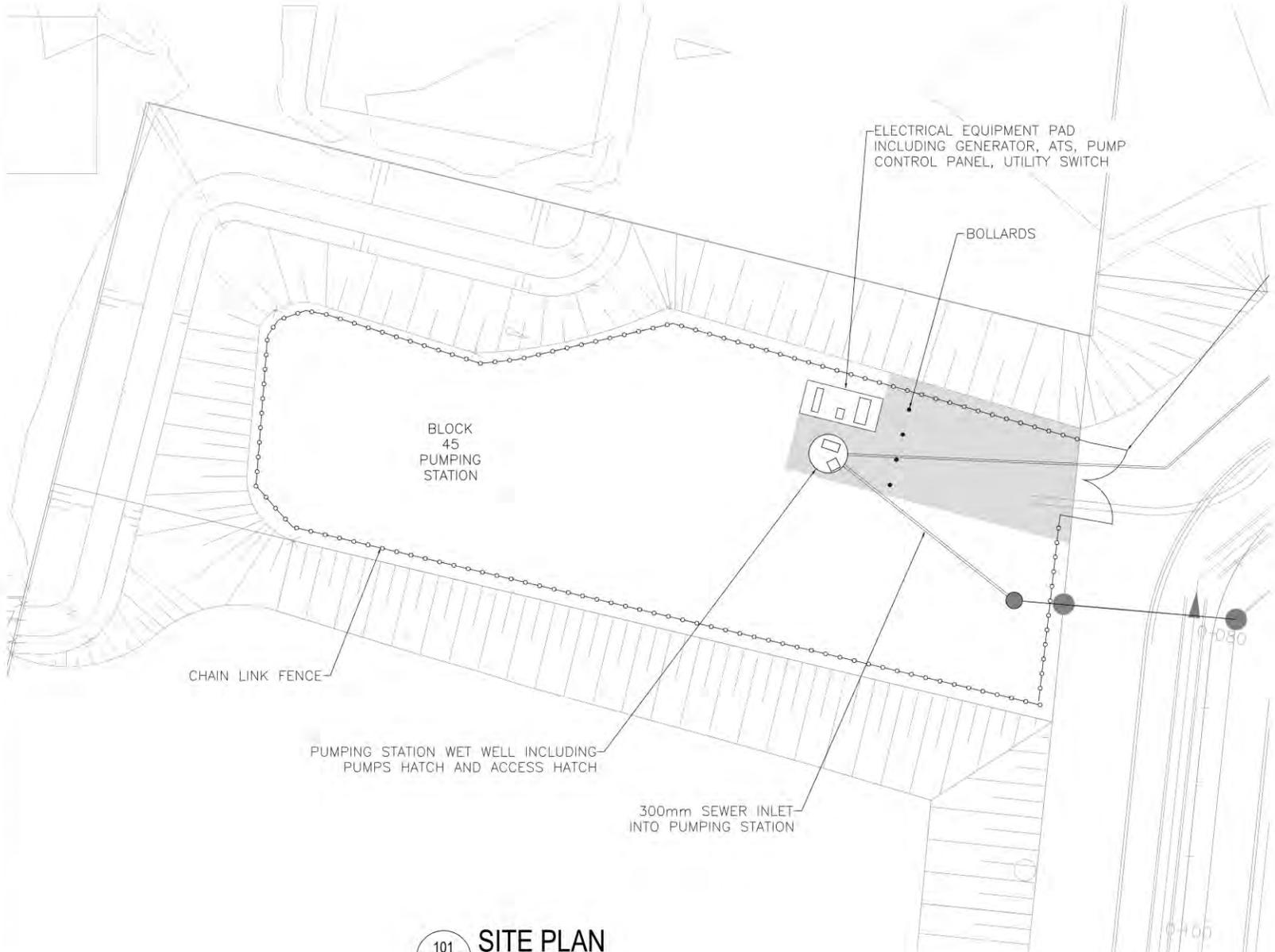


# New Highway 7 SPS

Proposed Sanitary Sewer Layout



BORDERS SIZE: ISO A1 (841mm x 594mm) DATE PLOTTED: 2024 / 04 / 30 @ 04:30 PM PLOT SCALE: 1:1 TEL: (519) 615-8888 Email: info@greer-galloway.com(519)798-0616 Unit 7 Parkway Station - 5th Floor, 4th Floor CAD PLOTTED: Tom Funari



**101**  
**S1A** **SITE PLAN**  
 SCALE: 1:250

**GREER GALLOWAY CONSULTING ENGINEERS**  
 PETERBOROUGH BELLEVILLE KINGSTON  
 1620 WALLERIDGE LOYALIST ROAD  
 BELLEVILLE, ONTARIO, K8N 4Z5  
 PHONE: 613-966-3068  
 FAX: 613-966-3087

**NOTES:**  
 1. ALL WORK SHALL BE IN ACCORDANCE WITH RELEVANT CODES AND GUIDELINES.  
 2. ALL DRAWINGS AND ADDENDA ARE TO BE READ AS, AND IN CONJUNCTION WITH THE SPECIFICATIONS.  
 3. ALL EQUIPMENT SHALL BE INSTALLED AS SPECIFIED OR APPROVED EQUIVALENT.  
 4. CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS BEFORE PROCEEDING WITH WORK AND BE RESPONSIBLE FOR SAME.  
 5. CONTRACTOR MUST REPORT ANY DISCREPANCIES TO ENGINEER FOR RESOLUTION BEFORE COMMENCING THE WORK.  
 6. ANY CHANGES MUST BE APPROVED BY THE ENGINEER.

A DETAIL NO.  
 B DRAWING NO. - WHERE DETAILED

01	ISSUED FOR REVIEW	24/03/21
REVISION	DESCRIPTION	DATE

NORTH

PROJECT  
**CKL HWY 7 PUMPING STATION**  
 LINDSAY, ONTARIO

DRAWING TITLE  
**SITE PLAN**

DESIGNED BY  
 J. SINNAKANDU

DRAWN BY  
 T. FUNARI/C. CLARK

REVIEWED BY  
 T. GUERRERA

APPROVED BY  
 T. GUERRERA

PROJECT DATE  
 2024/03/01 (YYYY/MM/SS)

PROJECT #  
 23-3-7786

DRAWING #  
 SP1A

DRAWING SCALE (ISO A1)  
 HOR: AS SHOWN  
 VER: AS SHOWN

SCALE 1:250

# Next Steps

- Review choice of preferred solution
- Identify alternative design concepts for preferred solution
- Finalize preferred design and proceed towards Project File Report
- Complete Contract Drawings and Tender Documents

## Project Contact Information

Marten Leclerc  
Senior Engineering Tech  
City of Kawartha Lakes  
26 Francis Street  
Lindsay, ON, K9V 5R8  
T: (705) 324 9411 x 1131  
Email: mleclerc@kawarthalakes.ca

Tony Guerrera, P. Eng  
The Greer Galloway Group Inc.  
1620 Wallbridge Loyalist Road  
Belleville, ON K8N 4Z5  
T: (613) 966-3068  
F: (613) 966-3087  
Email: tguerrera@greergalloway.com

Slides will be made available on the City of Kawartha Lakes website following the presentation.

# Thank you

*HIGHWAY 7 SEWAGE PUMPING STATION PROJECT*

Public Information Centre (PIC) – Sign-in Sheet

Date: May 22<sup>nd</sup>, 2024

Location: Victoria Room – City Hall, 26 Francis St, Lindsay, Ontario

PLEASE PRINT CLEARLY

NAME	TELEPHONE NUMBER	EMAIL ADDRESS
Conrad Gentry	[REDACTED]	[REDACTED]
Mivza Bing	[REDACTED]	[REDACTED]
Daniel Deveau		
Dave Medd	[REDACTED]	[REDACTED]
Peter Zourtas	[REDACTED]	[REDACTED]

**APPENDIX J: Project Contacts**

Stakeholder	Address	Number	Email	Attention	Comment
Mississaugas of Scugog Island First Nation	22521 Island Road, Port Perry, ON L9L 1B6		info@scugogfirstnation.com;	Dave Mowat, Community Consultation Specialist	For first nations also CC: inquiries@williamstreatiesfirstnations.ca;
Curve Lake First Nation	22 Winookeeda Road, Curve Lake, ON K0L 1R0		emilyw@curvelake.ca; juliek@curvelake.ca; kaitlinh@curvelake.ca;	Chief Emily Whetung, Julie Kapyrka, Lands Resource Consultation Liaison Kaitlin Hill, Lands Resource Consultation Liaison	
Mohawks of the Bay of Quinte	24 Meadow Drive, Tyendinaga Mohawk Territory, ON K0K 1X0		consultation@mbq-tmt.org; lisam@mbq-tmt.org; nicoles@mbq-tmt.org;	Charlotte Gurnsey, Consultation Coordinator	
Alderville First Nation	11696 Second Line, P.O. Box 46 Roseneath, ON K0K 2X0		consultation@alderville.ca;	Chief Dave Mowat	
Kawartha Nishnawbe		807.623.8228	kawarthanishnawbecouncil@outlook.com; CC: nodin.webb@hotmail.com; samgharvey@live.com;		
Hiawatha First Nation	123 Paudash Street R. R. #2	705-295-4421	chiefcarr@hiawathafn.ca ; tcowie@hiawathafn.ca; sdavison@hiawathafn.ca;	Chief Greg Cowie	
Chippewas of Georgina Island			jl.porte@georginaisland.com;		
Chippewas of Rama First Nation			evelynb@ramafirstnation.ca; shardayj@ramafirstnation.ca;		
Chippewas of Beausoleil First Nation			info@chimnissing.ca; jcopegog@chimnissing.ca;		
Kawartha Conservation	277 Kenrei Road Lindsay, ON K9V 4R1	705 328 2271	Email on website		

MECP - Eastern Region	1259 Gardiners Road, Unit 3 Kingston ON K7P 3J6	613 549 4000	Jacqueline.Fuller@ontario.ca; Jon.Orpana@ontario.ca; eanotification.eregion@ontario.ca;	Notices go the the specific notice email
Ministry of Heritage, Sport, Tourism and Culture Industries			Joseph.Harvey@ontario.ca; Karla.Barboza@ontario.ca;	Barboza, Karla Harvey, Joseph
Environment Canada, Public Works Canada	4900 Yonge St., Suite 1205 North York, ON M2N 6A6	416-952-0813	ONT.Web@pwgsc-tpsgc.gc.ca;	
Ministry of Citizenship and Multiculturalism	56 Wellesley Street West, 14th Floor Toronto, Ontario M7A 2E7	416 212 0036	Dan.Minkin@ontario.ca;	Dan Minkin
J.Stollar Construction Limited			martstol@rogers.com;	Martyn Stollar

## **APPENDIX K: Agency Correspondence**

## Gabriel Goad

---

**From:** Tony Guerrero  
**Sent:** Wednesday, February 21, 2024 3:51 PM  
**To:** Jeanorth Sinnakandu  
**Subject:** FW: Highway 7 Sewage Pumping Station Municipal Class EA  
**Attachments:** fjo\_NoticeofCommencementResponse\_City of Kawartha Lakes\_Hwy7SewagePumpingStation\_SchedB.pdf; Supporting Attachment - Proponent's Intro to Delegation of Procedural Aspects of Consultation with Aboriginal Communities.docx; Supporting Attachment - Species at Risk Proponents Guide to Preliminary Screening (Draft May 2019).pdf

---

**From:** Orpana, Jon (MECP) <Jon.Orpana@ontario.ca>  
**Sent:** Wednesday, February 21, 2024 3:48 PM  
**To:** mleclerc@kawarthalakes.ca  
**Cc:** Tony Guerrero <tguerrera@greergalloway.com>; Wielgos, Brittney (MECP) <Brittney.Wielgos@ontario.ca>  
**Subject:** Highway 7 Sewage Pumping Station Municipal Class EA

**CAUTION:** This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender, their email address, and know the content is safe.

Dear Marten Leclerc,

Please find MECP's preliminary comments on the above mentioned file.

Also included are the indigenous communities which at a minimum must be consulted with regarding your project and an assortment of reference materials and hyperlinks that you can refer to throughout the completion of your study - some of which will not be relevant to a scoped study such as yours.

Regards,

Jon

Jon K. Orpana [hear name](#)  
Regional Environmental Planner  
Environmental Assessment Branch  
Ministry of the Environment, Conservation and Parks  
Kingston Regional Office  
PO Box 22032, 1259 Gardiners Road  
Kingston, Ontario  
K7M 8S5

Phone: (613) 548-6918  
Fax: (613) 548-6908  
Email: [jon.orpana@ontario.ca](mailto:jon.orpana@ontario.ca)

**A PROPONENT’S INTRODUCTION TO THE DELEGATION OF PROCEDURAL ASPECTS OF CONSULTATION WITH ABORIGINAL COMMUNITIES**

**DEFINITIONS**

The following definitions are specific to this document and may not apply in other contexts:

**Aboriginal communities** – the First Nation or Métis communities identified by the Crown for the purpose of consultation.

**Consultation** – the Crown’s legal obligation to consult when the Crown has knowledge of an established or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. This is the type of consultation required pursuant to s. 35 of the *Constitution Act, 1982*. Note that this definition does not include consultation with Aboriginal communities for other reasons, such as regulatory requirements.

**Crown** – the Ontario Crown, acting through a particular ministry or ministries.

**Procedural aspects of consultation** – those portions of consultation related to the process of consultation, such as notifying an Aboriginal community about a project, providing information about the potential impacts of a project, responding to concerns raised by an Aboriginal community and proposing changes to the project to avoid negative impacts.

**Proponent** – the person or entity that wants to undertake a project and requires an Ontario Crown decision or approval for the project.

**I. PURPOSE**

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that may adversely impact that right. In outlining a framework for the duty to consult, the Supreme Court of Canada has stated that the Crown may delegate procedural aspects of consultation to third parties. This document provides general information about the Ontario Crown’s approach to delegation of the procedural aspects of consultation to proponents.

This document is not intended to instruct a proponent about an individual project, and it does not constitute legal advice.

**II. WHY IS IT NECESSARY TO CONSULT WITH ABORIGINAL COMMUNITIES?**

The objective of the modern law of Aboriginal and treaty rights is the *reconciliation* of Aboriginal peoples and non-Aboriginal peoples and their respective rights, claims and interests. Consultation is an important component of the reconciliation process.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. For example, the Crown’s duty to consult is triggered when it considers

issuing a permit, authorization or approval for a project which has the potential to adversely impact an Aboriginal right, such as the right to hunt, fish, or trap in a particular area.

The scope of consultation required in particular circumstances ranges across a spectrum depending on both the nature of the asserted or established right and the seriousness of the potential adverse impacts on that right.

Depending on the particular circumstances, the Crown may also need to take steps to accommodate the potentially impacted Aboriginal or treaty right. For example, the Crown may be required to avoid or minimize the potential adverse impacts of the project.

### **III. THE CROWN'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS**

The Crown has the responsibility for ensuring that the duty to consult, and accommodate where appropriate, is met. However, the Crown may delegate the procedural aspects of consultation to a proponent.

There are different ways in which the Crown may delegate the procedural aspects of consultation to a proponent, including through a letter, a memorandum of understanding, legislation, regulation, policy and codes of practice.

If the Crown decides to delegate procedural aspects of consultation, the Crown will generally:

- Ensure that the delegation of procedural aspects of consultation and the responsibilities of the proponent are clearly communicated to the proponent;
- Identify which Aboriginal communities must be consulted;
- Provide contact information for the Aboriginal communities;
- Revise, as necessary, the list of Aboriginal communities to be consulted as new information becomes available and is assessed by the Crown;
- Assess the scope of consultation owed to the Aboriginal communities;
- Maintain appropriate oversight of the actions taken by the proponent in fulfilling the procedural aspects of consultation;
- Assess the adequacy of consultation that is undertaken and any accommodation that may be required;
- Provide a contact within any responsible ministry in case issues arise that require direction from the Crown; and
- Participate in the consultation process as necessary and as determined by the Crown.

#### **IV. THE PROPONENT'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS**

Where aspects of the consultation process have been delegated to a proponent, the Crown, in meeting its duty to consult, will rely on the proponent's consultation activities and documentation of those activities. The consultation process informs the Crown's decision of whether or not to approve a proposed project or activity.

A proponent's role and responsibilities will vary depending on a variety of factors including the extent of consultation required in the circumstance and the procedural aspects of consultation the Crown has delegated to it. Proponents are often in a better position than the Crown to discuss a project and its potential impacts with Aboriginal communities and to determine ways to avoid or minimize the adverse impacts of a project.

A proponent can raise issues or questions with the Crown at any time during the consultation process. If issues or concerns arise during the consultation that cannot be addressed by the proponent, the proponent should contact the Crown.

##### **a) What might a proponent be required to do in carrying out the procedural aspects of consultation?**

Where the Crown delegates procedural aspects of consultation, it is often the proponent's responsibility to provide notice of the proposed project to the identified Aboriginal communities. The notice should indicate that the Crown has delegated the procedural aspects of consultation to the proponent and should include the following information:

- a description of the proposed project or activity;
- mapping;
- proposed timelines;
- details regarding anticipated environmental and other impacts;
- details regarding opportunities to comment; and
- any changes to the proposed project that have been made for seasonal conditions or other factors, where relevant.

Proponents should provide enough information and time to allow Aboriginal communities to provide meaningful feedback regarding the potential impacts of the project. Depending on the nature of consultation required for a project, a proponent also may be required to:

- provide the Crown with copies of any consultation plans prepared and an opportunity to review and comment;
- ensure that any necessary follow-up discussions with Aboriginal communities take place in a timely manner, including to confirm receipt of information, share and update information and to address questions or concerns that may arise;

- as appropriate, discuss with Aboriginal communities potential mitigation measures and/or changes to the project in response to concerns raised by Aboriginal communities;
- use language that is accessible and not overly technical, and translate material into Aboriginal languages where requested or appropriate;
- bear the reasonable costs associated with the consultation process such as, but not limited to, meeting hall rental, meal costs, document translation(s), or to address technical & capacity issues;
- provide the Crown with all the details about potential impacts on established or asserted Aboriginal or treaty rights, how these concerns have been considered and addressed by the proponent and the Aboriginal communities and any steps taken to mitigate the potential impacts;
- provide the Crown with complete and accurate documentation from these meetings and communications; and
- notify the Crown immediately if an Aboriginal community not identified by the Crown approaches the proponent seeking consultation opportunities.

#### **b) What documentation and reporting does the Crown need from the proponent?**

Proponents should keep records of all communications with the Aboriginal communities involved in the consultation process and any information provided to these Aboriginal communities.

As the Crown is required to assess the adequacy of consultation, it needs documentation to satisfy itself that the proponent has fulfilled the procedural aspects of consultation delegated to it. The documentation required would typically include:

- the date of meetings, the agendas, any materials distributed, those in attendance and copies of any minutes prepared;
- the description of the proposed project that was shared at the meeting;
- any and all concerns or other feedback provided by the communities;
- any information that was shared by a community in relation to its asserted or established Aboriginal or treaty rights and any potential adverse impacts of the proposed activity, approval or disposition on such rights;
- any proposed project changes or mitigation measures that were discussed, and feedback from Aboriginal communities about the proposed changes and measures;
- any commitments made by the proponent in response to any concerns raised, and feedback from Aboriginal communities on those commitments;
- copies of correspondence to or from Aboriginal communities, and any materials distributed electronically or by mail;

- information regarding any financial assistance provided by the proponent to enable participation by Aboriginal communities in the consultation;
- periodic consultation progress reports or copies of meeting notes if requested by the Crown;
- a summary of how the delegated aspects of consultation were carried out and the results; and
- a summary of issues raised by the Aboriginal communities, how the issues were addressed and any outstanding issues.

In certain circumstances, the Crown may share and discuss the proponent's consultation record with an Aboriginal community to ensure that it is an accurate reflection of the consultation process.

**c) Will the Crown require a proponent to provide information about its commercial arrangements with Aboriginal communities?**

The Crown may require a proponent to share information about aspects of commercial arrangements between the proponent and Aboriginal communities where the arrangements:

- include elements that are directed at mitigating or otherwise addressing impacts of the project;
- include securing an Aboriginal community's support for the project; or
- may potentially affect the obligations of the Crown to the Aboriginal communities.

The proponent should make every reasonable effort to exempt the Crown from confidentiality provisions in commercial arrangements with Aboriginal communities to the extent necessary to allow this information to be shared with the Crown.

The Crown cannot guarantee that information shared with the Crown will remain confidential. Confidential commercial information should not be provided to the Crown as part of the consultation record if it is not relevant to the duty to consult or otherwise required to be submitted to the Crown as part of the regulatory process.

**V. WHAT ARE THE ROLES AND RESPONSIBILITIES OF ABORIGINAL COMMUNITIES' IN THE CONSULTATION PROCESS?**

Like the Crown, Aboriginal communities are expected to engage in consultation in good faith. This includes:

- responding to the consultation notice;
- engaging in the proposed consultation process;
- providing relevant documentation;

- clearly articulating the potential impacts of the proposed project on Aboriginal or treaty rights; and
- discussing ways to mitigate any adverse impacts.

Some Aboriginal communities have developed tools, such as consultation protocols, policies or processes that provide guidance on how they would prefer to be consulted. Although not legally binding, proponents are encouraged to respect these community processes where it is reasonable to do so. Please note that there is no obligation for a proponent to pay a fee to an Aboriginal community in order to enter into a consultation process.

To ensure that the Crown is aware of existing community consultation protocols, proponents should contact the relevant Crown ministry when presented with a consultation protocol by an Aboriginal community or anyone purporting to be a representative of an Aboriginal community.

## **VI. WHAT IF MORE THAN ONE PROVINCIAL CROWN MINISTRY IS INVOLVED IN APPROVING A PROPONENT'S PROJECT?**

Depending on the project and the required permits or approvals, one or more ministries may delegate procedural aspects of the Crown's duty to consult to the proponent. The proponent may contact individual ministries for guidance related to the delegation of procedural aspects of consultation for ministry-specific permits/approvals required for the project in question. Proponents are encouraged to seek input from all involved Crown ministries sooner rather than later.

**Ministry of the Environment,  
Conservation and Parks**

**Ministère de l'Environnement,  
de la Protection de la nature  
et des Parcs**

Environmental Assessment  
Branch

Direction des évaluations  
environnementales

1<sup>st</sup> Floor  
135 St. Clair Avenue W  
Toronto ON M4V 1P5  
**Tel.:** 416 314-8001  
**Fax.:** 416 314-8452

Rez-de-chaussée  
135, avenue St. Clair Ouest  
Toronto ON M4V 1P5  
**Tél. :** 416 314-8001  
**Télééc. :** 416 314-8452

February 21, 2024

BY EMAIL ONLY

City of Kawartha Lakes

Attention: Marten Leclerc, Senior Engineering Tech  
General Manager,  
Email: [mleclerc@kawarthalakes.ca](mailto:mleclerc@kawarthalakes.ca)

Reg: **City of Kawartha Lakes**  
**Highway 7 Sewage Pumping Station – Class Environmental Assessment, Schedule B**  
**Response to Notice of Commencement**

Dear Marten Leclerc,

This letter is in response to the Notice of Commencement issued February 6, 2024, for the above noted project. The Ministry of the Environment, Conservation and Parks (MECP) acknowledges that the proponent has indicated that the study is following the approved environmental planning process for a Schedule B project under the Municipal Class Environmental Assessment (Class EA), 2023 as amended.

## Background

The City of Kawartha Lakes (City) is initiating a planning process to expand the wastewater collection system for the community of Lindsay. The community of Lindsay is rapidly expanding with new developments and requires upgrades to the wastewater collection system to support the increasing needs of the residents of the community. The project is being carried out with the requirements for a Schedule 'B' project under the terms of the Municipal Class Environmental Assessment (Class EA) process. A keymap is attached showing the location of the proposed construction of a new Sewage Pumping Station as part of the development of the Gateway Subdivision. The Class EA process includes:

- Consultation with the public, review agencies, and other stakeholders
- Field investigations
- Evaluation of viable alternative solutions
- Assessment of the impacts of the alternative solutions and identification of measures to mitigate any adverse environmental, social, cultural, and economic impacts
- Selection of a preferred solution

The **updated (August 2022)** attached "Areas of Interest" document provides guidance regarding the ministry's interests with respect to the Class EA process. Please address all areas of interest in the EA documentation at an appropriate level for the EA study. Proponents who address all the applicable areas of interest can minimize potential delays to the project schedule. **Further information is provided at the end of the Areas of Interest document relating to recent changes to the Environmental Assessment Act through Bill 197, Covid-19 Economic Recovery Act 2020.**

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before authorizing this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the consultation process.

The proposed project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to the proposed project, **the MECP is delegating the procedural aspects of rights-based consultation to the proponent through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.

Based on information provided to date and the Crown's preliminary assessment the proponent is required to consult with the following communities who have been identified as potentially affected by the proposed project:

- Chippewas of Georgina Island First Nation
- Chippewas of Rama First Nation
- Beausoleil First Nation
- Curve Lake First Nation
- Hiawatha First Nation
- Mississaugas of Scugog Island First Nation
- Alderville First Nation

- Huron-Wendat- should be engaged if there is an anticipated impact to Archaeological resources-

- Kawartha Nishnawbe

Steps that the proponent may need to take in relation to Aboriginal consultation for the proposed project are outlined in the [“Code of Practice for Consultation in Ontario’s Environmental Assessment Process”](#). Additional information related to Ontario’s Environmental Assessment Act is available online at: [www.ontario.ca/environmentalassessments](http://www.ontario.ca/environmentalassessments).

**Please also refer to the attached document “A Proponent’s Introduction to the Delegation of Procedural Aspects of consultation with Aboriginal Communities” for further information, including the MECP’s expectations for EA report documentation related to consultation with communities.**

The proponent must contact the Director of Environmental Assessment Branch (EABDirector@ontario.ca) under the following circumstances subsequent to initial discussions with the communities identified by the MECP:

- Aboriginal or treaty rights impacts are identified to you by the communities;
- You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right;
- Consultation with Indigenous communities or other stakeholders has reached an impasse; or
- A Section 16 Order request is expected on the basis of impacts to Aboriginal or treaty rights

The MECP will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

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**A draft copy of the report should be sent directly to me prior to the filing of the final report, allowing a minimum of 30 days for the ministry’s technical reviewers to provide comments.**

**Please also ensure a copy of the final notice is sent to the ministry's Eastern Region EA notification email account ([eanotification.eregion@ontario.ca](mailto:eanotification.eregion@ontario.ca)) after the draft report is reviewed and finalized.**

Should you or any members of your project team have any questions regarding the material above, please contact me at [jon.orpana@ontario.ca](mailto:jon.orpana@ontario.ca).

Sincerely,



Jon K. Orpana

Regional Environmental Planner – Eastern Region

Cc:

Brittney Wielgos, (A)Water Compliance Supervisor, Peterborough District Office, MECP  
Email: [brittney.wielgos@ontario.ca](mailto:brittney.wielgos@ontario.ca)

Tony Guerra, P. Eng.  
The Greer Galloway Group Inc.  
Email: [tuerrera@greergalloway.com](mailto:tuerrera@greergalloway.com)

Encl. Areas of Interest

## AREAS OF INTEREST (v. August 2022)

*It is suggested that you check off each section after you have considered / addressed it.*

### Planning and Policy

- Applicable plans and policies should be identified in the report, and the proponent should describe how the proposed project adheres to the relevant policies in these plans.
  - Projects located in MECP Central, Eastern or West Central Region may be subject to [A Place to Grow: Growth Plan for the Greater Golden Horseshoe](#) (2020).
  - Projects located in MECP Central or Eastern Region may be subject to the [Oak Ridges Moraine Conservation Plan](#) (2017) or the [Lake Simcoe Protection Plan](#) (2014).
  - Projects located in MECP Central, Southwest or West Central Region may be subject to the [Niagara Escarpment Plan](#) (2017).
  - Projects located in MECP Central, Eastern, Southwest or West Central Region may be subject to the [Greenbelt Plan](#) (2017).
  - Projects located in MECP Northern Region may be subject to the [Growth Plan for Northern Ontario](#) (2011).
- The [Provincial Policy Statement](#) (2020) contains policies that protect Ontario's natural heritage and water resources. Applicable policies should be referenced in the report, and the proponent should describe how the proposed project is consistent with these policies.
- In addition to the provincial planning and policy level, the report should also discuss the planning context at the municipal and federal levels, as appropriate.

### Source Water Protection

The *Clean Water Act, 2006* (CWA) aims to protect existing and future sources of drinking water. To achieve this, several types of vulnerable areas have been delineated around surface water intakes and wellheads for every municipal residential drinking water system that is located in a source protection area. These vulnerable areas are known as a Wellhead Protection Areas (WHPAs) and surface water Intake Protection Zones (IPZs). Other vulnerable areas that have been delineated under the CWA include Highly Vulnerable Aquifers (HVAs), Significant Groundwater Recharge Areas (SGRAs), Event-based modelling areas (EBAs), and Issues Contributing Areas (ICAs). Source protection plans have been developed that include policies to address existing and future risks to sources of municipal drinking water within these vulnerable areas.

Projects that are subject to the Environmental Assessment Act that fall under a Class EA, or one of the Regulations, have the potential to impact sources of drinking water if they occur in

designated vulnerable areas or in the vicinity of other at-risk drinking water systems (i.e. systems that are not municipal residential systems). MEA Class EA projects may include activities that, if located in a vulnerable area, could be a threat to sources of drinking water (i.e. have the potential to adversely affect the quality or quantity of drinking water sources) and the activity could therefore be subject to policies in a source protection plan. Where an activity poses a risk to drinking water, policies in the local source protection plan may impact how or where that activity is undertaken. Policies may prohibit certain activities, or they may require risk management measures for these activities. Municipal Official Plans, planning decisions, Class EA projects (where the project includes an activity that is a threat to drinking water) and prescribed instruments must conform with policies that address significant risks to drinking water and must have regard for policies that address moderate or low risks.

- The proponent should identify the source protection area and should clearly document how the proximity of the project to sources of drinking water (municipal or other) and any delineated vulnerable areas was considered and assessed. Specifically, the report should discuss whether or not the project is located in a vulnerable area and provide applicable details about the area.
- If located in a vulnerable area, proponents should document whether any project activities are prescribed drinking water threats and thus pose a risk to drinking water (this should be consulted on with the appropriate Source Protection Authority). Where an activity poses a risk to drinking water, the proponent must document and discuss in the report how the project adheres to or has regard to applicable policies in the local source protection plan. This section should then be used to inform and be reflected in other sections of the report, such as the identification of net positive/negative effects of alternatives, mitigation measures, evaluation of alternatives etc.
- While most source protection plans focused on including policies for significant drinking water threats in the WHPAs and IPZs it should be noted that even though source protection plan policies may not apply in HVAs, these are areas where aquifers are sensitive and at risk to impacts and within these areas, activities may impact the quality of sources of drinking water for systems other than municipal residential systems.
- In order to determine if this project is occurring within a vulnerable area, proponents can use this mapping tool: <http://www.applications.ene.gov.on.ca/swp/en/index.php>. Note that various layers (including WHPAs, WHPA-Q1 and WHPA-Q2, IPZs, HVAs, SGRAs, EBAs, ICAs) can be turned on through the “Map Legend” bar on the left. The mapping tool will also provide a link to the appropriate source protection plan in order to identify what policies may be applicable in the vulnerable area.
- For further information on the maps or source protection plan policies which may relate to their project, proponents must contact the appropriate source protection authority. Please consult with the local source protection authority to discuss potential impacts on

drinking water. Please document the results of that consultation within the report and include all communication documents/correspondence.

#### More Information

For more information on the *Clean Water Act*, source protection areas and plans, including specific information on the vulnerable areas and drinking water threats, please refer to [Conservation Ontario's website](#) where you will also find links to the local source protection plan/assessment report.

A list of the prescribed drinking water threats can be found in [section 1.1 of Ontario Regulation 287/07](#) made under the *Clean Water Act*. In addition to prescribed drinking water threats, some source protection plans may include policies to address additional "local" threat activities, as approved by the MECP.

#### Climate Change

The document "[Considering Climate Change in the Environmental Assessment Process](#)" (Guide) is now a part of the Environmental Assessment program's Guides and Codes of Practice. The Guide sets out the MECP's expectation for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. The guide provides examples, approaches, resources, and references to assist proponents with consideration of climate change in EA. Proponents should review this Guide in detail.

- The MECP expects proponents of projects under a Class EA or EA Act Regulation to:
  1. Consider during the assessment of alternative solutions and alternative designs, the following:
    - a. the project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation); and
    - b. resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation).
  2. Include a discrete section in the report detailing how climate change was considered in the EA.

How climate change is considered can be qualitative or quantitative in nature and should be scaled to the project's level of environmental effect. In all instances, both a project's impacts on climate change (mitigation) and impacts of climate change on a project (adaptation) should be considered.

- The MECP has also prepared another guide to support provincial land use planning direction related to the completion of energy and emission plans. The "[Community Emissions Reduction Planning: A Guide for Municipalities](#)" document is designed to educate stakeholders on the municipal opportunities to reduce energy and greenhouse gas emissions, and to provide guidance on methods and techniques to incorporate

consideration of energy and greenhouse gas emissions into municipal activities of all types. We encourage you to review the Guide for information.

□ Air Quality, Dust and Noise

- If there are sensitive receptors in the surrounding area of this project, a quantitative air quality/odour impact assessment will be useful to evaluate alternatives, determine impacts and identify appropriate mitigation measures. The scope of the assessment can be determined based on the potential effects of the proposed alternatives, and typically includes source and receptor characterization and a quantification of local air quality impacts on the sensitive receptors and the environment in the study area. The assessment will compare to all applicable standards or guidelines for all contaminants of concern.
- If a quantitative Air Quality Impact Assessment is not required for the project, the MECP expects that the report contain a qualitative assessment which includes:
  - A discussion of local air quality including existing activities/sources that significantly impact local air quality and how the project may impact existing conditions;
  - A discussion of the nearby sensitive receptors and the project's potential air quality impacts on present and future sensitive receptors;
  - A discussion of local air quality impacts that could arise from this project during both construction and operation; and
  - A discussion of potential mitigation measures.
- Dust and noise control measures should be addressed and included in the construction plans to ensure that nearby residential and other sensitive land uses within the study area are not adversely affected during construction activities.
- The MECP recommends that non-chloride dust-suppressants be applied. For a comprehensive list of fugitive dust prevention and control measures that could be applied, refer to [Cheminfo Services Inc. Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities](#) report prepared for Environment Canada. March 2005.
- The report should consider the potential impacts of increased noise levels during the operation of the completed project. The proponent should explore all potential measures to mitigate significant noise impacts during the assessment of alternatives.
- Noise associated with a proposed transformer station should be evaluated. Note that any noise monitoring and assessment should be conducted in accordance with the

requirements of MECP guidelines, such as MECP Publication NPC-233, *“Information to be Submitted for Approval of Stationary Sources of Sound”*.

- In order to address potential noise impacts of the transformer station, it may be necessary to first monitor ambient noise levels prior to the installation of the transformer station, and to then conduct a noise assessment after the transformer station is installed and operational. Depending on the results of these studies and the proximity to sensitive receptors, remedial measures may be needed to address noise generated by the transformer station.
  
- Ecosystem Protection and Restoration
  
- Any impacts to ecosystem form and function must be avoided where possible. The report should describe any proposed mitigation measures and how project planning will protect and enhance the local ecosystem.
  
- Natural heritage and hydrologic features should be identified and described in detail to assess potential impacts and to develop appropriate mitigation measures. The following sensitive environmental features may be located within or adjacent to the study area:
  - Key Natural Heritage Features: Habitat of endangered species and threatened species, fish habitat, wetlands, areas of natural and scientific interest (ANSIs), significant valleylands, significant woodlands; significant wildlife habitat (including habitat of special concern species); sand barrens, savannahs, and tallgrass prairies; and alvars.
  - Key Hydrologic Features: Permanent streams, intermittent streams, inland lakes and their littoral zones, seepage areas and springs, and wetlands.
  - Other natural heritage features and areas such as: vegetation communities, rare species of flora or fauna, Environmentally Sensitive Areas, Environmentally Sensitive Policy Areas, federal and provincial parks and conservation reserves, Greenland systems etc.

We recommend consulting with the Ministry of Natural Resources and Forestry (MNRF), Fisheries and Oceans Canada (DFO) and your local conservation authority to determine if special measures or additional studies will be necessary to preserve and protect these sensitive features.

- Species at Risk
  
- The Ministry of the Environment, Conservation and Parks has now assumed responsibility of Ontario’s Species at Risk program. Information, standards, guidelines, reference materials and technical resources to assist you are found at <https://www.ontario.ca/page/species-risk>.

- The Client's Guide to Preliminary Screening for Species at Risk (Draft May 2019) has been attached to the covering email for your reference and use. Please review this document for next steps.
- For any questions related to subsequent permit requirements, SAR Considerations etc., proponents / consultants should contact [SAROntario@ontario.ca](mailto:SAROntario@ontario.ca).

□ Surface Water

- The report must include enough information to demonstrate that there will be no negative impacts on the natural features or ecological functions of any watercourses within the study area. Measures should be included in the planning and design process to ensure that any impacts to watercourses from construction or operational activities (e.g. spills, erosion, pollution) are mitigated as part of the proposed undertaking.
- Additional stormwater runoff from new pavement can impact receiving watercourses and flood conditions. Quality and quantity control measures to treat stormwater runoff should be considered for all new impervious areas and, where possible, existing surfaces. The ministry's [Stormwater Management Planning and Design Manual \(2003\)](#) should be referenced in the report and utilized when designing stormwater control methods.
- A Stormwater Management Plan prepared as part of the Class EA process should include:
  - Strategies to address potential water quantity and erosion impacts related to stormwater draining into streams or other sensitive environmental features, and to ensure that adequate (enhanced) water quality is maintained
  - Watershed information, drainage conditions, and other relevant background information
  - Future drainage conditions, stormwater management options, information on erosion and sediment control during construction, and other details of the proposed works
  - Information on maintenance and monitoring commitments.
- Any potential approval requirements for surface water taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, except for certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the [Water Taking User Guide for EASR](#) for more information. Additionally, an Environmental Compliance Approval under the OWRA is required for municipal stormwater management work.

□ Groundwater

- The status of, and potential impacts to any well water supplies should be addressed. If the project involves groundwater takings or changes to drainage patterns, the quantity and quality of groundwater may be affected due to drawdown effects or the redirection of existing contamination flows. In addition, project activities may infringe on existing wells such that they must be reconstructed or sealed and abandoned. Appropriate information to define existing groundwater conditions should be included in the report.
- If the potential construction or decommissioning of water wells is identified as an issue, the report should refer to Ontario Regulation 903, Wells, under the OWRA.
- Potential impacts to groundwater-dependent natural features should be addressed. Any changes to groundwater flow or quality from groundwater taking may interfere with the ecological processes of streams, wetlands or other surficial features. In addition, discharging contaminated or high volumes of groundwater to these features may have direct impacts on their function. Any potential effects should be identified, and appropriate mitigation measures should be recommended. The level of detail required will be dependent on the significance of the potential impacts. For example, where construction of transmission towers is proposed, any pile driving into the subsurface that is required for steel pile type tower foundations, particularly to the bedrock surface at depth, may have an adverse effect on local groundwater resources.
- Any potential approval requirements for groundwater taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, with the exception of certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the [Water Taking User Guide for EASR](#) for more information.
- Consultation with the railroad authorities is necessary wherever there is a plan to use construction dewatering in the vicinity of railroad lines or where the zone of influence of the construction dewatering potentially intercepts railroad lines.
- Groundwater should be protected from the potential for spills, dewatering and wood pole preservative during construction. A plan should be in place for preventing and dealing with spills. All spills that could potentially cause damage to the environment should be reported to the Spills Action Centre of the Ministry of the Environment, Conservation and Parks at 1-800-268-6060.

□ Excess Materials Management

- In December 2019, MECP released a new regulation under the Environmental Protection Act, titled “[On-Site and Excess Soil Management](#)” (O. Reg. 406/19) to support improved management of excess construction soil. This regulation is a key step to support proper management of excess soils, ensuring valuable resources don’t go to waste and to provide clear rules on managing and reusing excess soil. New risk-based standards referenced by this regulation help to facilitate local beneficial reuse which in turn will reduce greenhouse gas emissions from soil transportation, while ensuring strong protection of human health and the environment. The new regulation is being phased in over time, with the first phase in effect on January 1, 2021. For more information, please visit <https://www.ontario.ca/page/handling-excess-soil>.
- The report should reference that activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and the MECP’s current guidance document titled “[Management of Excess Soil – A Guide for Best Management Practices](#)” (2014).
- All waste generated during construction must be disposed of in accordance with ministry requirements.

□ Contaminated Sites

- Any current or historical waste disposal sites should be identified in the report. The status of these sites should be determined to confirm whether approval pursuant to Section 46 of the EPA may be required for land uses on former disposal sites. We recommend referring to the [MECP’s D-4 guideline](#) for land use considerations near landfills and dumps.
- Resources available may include regional/local municipal official plans and data; provincial data on [large landfill sites](#) and [small landfill sites](#); Environmental Compliance Approval information for waste disposal sites on [Access Environment](#).
- Other known contaminated sites (local, provincial, federal) in the study area should also be identified in the report (Note – information on federal contaminated sites is found on the Government of Canada’s [website](#)).
- The location of any underground storage tanks should be investigated in the report. Measures should be identified to ensure the integrity of these tanks and to ensure an appropriate response in the event of a spill. The ministry’s Spills Action Centre must be contacted in such an event.
- Since the removal or movement of soils may be required, appropriate tests to determine contaminant levels from previous land uses or dumping should be

undertaken. If the soils are contaminated, you must determine how and where they are to be disposed of, consistent with *Part XV.1 of the Environmental Protection Act (EPA)* and Ontario Regulation 153/04, Records of Site Condition, which details the new requirements related to site assessment and clean up. Consideration of potential environmental contamination should be given following regulatory guidance where the project involves decommissioning of facilities. Please contact the appropriate MECP District Office for further consultation if contaminated sites are present.

- Where poles are being removed that have been chemically treated, we recommend that the proponent consider soil testing to determine the extent of any related soil contamination. Soil testing may be contingent on factors such as proximity to water bodies or wetlands, proximity to wells, locations where poles are being removed but not replaced, and the treatment chemicals used (i.e. chromated copper arsenate (CCA) or creosote). In the case of poles which have been treated with CCA or creosote, testing for arsenic, copper and creosote should be completed.

Servicing, Utilities and Facilities

- The report should identify any above or underground utilities in the study area such as transmission lines, telephone/internet, oil/gas etc. The owners should be consulted to discuss impacts to this infrastructure, including potential spills.
- The report should identify any servicing infrastructure in the study area such as wastewater, water, stormwater that may potentially be impacted by the project.
- 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 an Environmental Compliance Approval (ECA) before it can operate lawfully. Please consult with MECP's Environmental Permissions Branch to determine whether a new or amended ECA will be required for any proposed infrastructure.
- We recommend referring to the ministry's [environmental land use planning guides](#) to ensure that any potential land use conflicts are considered when planning for any infrastructure or facilities related to wastewater, pipelines, landfills or industrial uses.

Mitigation and Monitoring

- Contractors must be made aware of all environmental considerations so that all environmental standards and commitments for both construction and operation are met. Mitigation measures should be clearly referenced in the report and regularly monitored during the construction stage of the project. In addition, we encourage

proponents to conduct post-construction monitoring to ensure all mitigation measures have been effective and are functioning properly.

- Design and construction reports and plans should be based on a best management approach that centres on the prevention of impacts, protection of the existing environment, and opportunities for rehabilitation and enhancement of any impacted areas.
- The proponent's construction and post-construction effects monitoring strategies and programs must be documented in the report.
- The proponent must consider cumulative effects when planning projects. The assessment will include the proposed undertaking and any other proposed undertakings in the immediate project area where documentation is available (e.g. other environmental assessments).

Consultation

- The report must demonstrate how the consultation provisions of the Class EA have been fulfilled, including documentation of all stakeholder consultation efforts undertaken during the planning process. This includes a discussion in the report that identifies concerns that were raised and describes how they have been addressed by the proponent throughout the planning process. The report should also include copies of comments submitted on the project by interested stakeholders, and the proponent's responses to these comments (as directed by the Guide to Environmental Assessment Requirements for Electricity Projects to include full documentation).
- Please include the full stakeholder distribution/consultation list in the documentation.

Class EA Process

- The report should provide clear and complete documentation of the planning process in order to allow for transparency in decision-making.
- The Class EA requires the consideration of the effects of each alternative on all aspects of the environment (including planning, natural, social, cultural, economic, technical). The report should include a level of detail (e.g. hydrogeological investigations, terrestrial and aquatic assessments, cultural heritage assessments) such that all potential impacts can be identified, and appropriate mitigation measures can be developed. Any supporting studies conducted during the Class EA process should be referenced and included as part of the report.

- Please include in the report a list of all subsequent permits or approvals that may be required for the implementation of the preferred alternative, including but not limited to, MECP's PTTW, EASR Registrations and ECAs, conservation authority permits, species at risk permits, MTO permits and approvals under the *Impact Assessment Act*, 2019.
- Ministry guidelines and other information related to the issues above are available at <http://www.ontario.ca/environment-and-energy/environment-and-energy>. We encourage you to review all the available guides and to reference any relevant information in the report.

#### Amendments to the EAA through the Covid-19 Economic Recovery Act, 2020

Once the report is finalized, the proponent must issue a Notice of Completion providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the proponent. The Notice of Completion must be sent to the appropriate MECP Regional Office email address (for projects in MECP Southwest Region, the email is [eanotification.swregion@ontario.ca](mailto:eanotification.swregion@ontario.ca)).

The public has the ability to request a higher level of assessment on a project if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights. In addition, the Minister may issue an order on his or her own initiative within a specified time period. The Director (of the Environmental Assessment Branch) will issue a Notice of Proposed Order to the proponent if the Minister is considering an order for the project within 30 days after the conclusion of the comment period on the Notice of Completion. At this time, the Director may request additional information from the proponent. Once the requested information has been received, the Minister will have 30 days within which to make a decision or impose conditions on your project.

Therefore, the proponent cannot proceed with the project until at least 30 days after the end of the comment period provided for in the Notice of Completion. Further, the proponent may not proceed after this time if:

- a Section 16 Order request has been submitted to the ministry regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, or
- the Director has issued a Notice of Proposed order regarding the project.

Please ensure that the Notice of Completion advises that outstanding concerns are to be directed to the proponent for a response, and that in the event there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, Section 16 Order requests on those matters should be addressed in writing to:

Minister  
Ministry of Environment, Conservation and Parks  
777 Bay Street, 5th Floor  
Toronto ON M7A 2J3  
[minister.mecp@ontario.ca](mailto:minister.mecp@ontario.ca)

and

Director, Environmental Assessment Branch  
Ministry of Environment, Conservation and Parks  
135 St. Clair Ave. W, 1st Floor  
Toronto ON, M4V 1P5  
EABDirector@ontario.ca

***Client's Guide to Preliminary Screening for Species at Risk***

***Ministry of the Environment, Conservation and Parks  
Species at Risk Branch, Permissions and Compliance***

***DRAFT - May 2019***

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## 1.0 Purpose, Scope, Background and Context

### 1.1 Purpose of this Guide

This guide has been created to:

- help clients better understand their obligation to gather information and complete a preliminary screening for species at risk before contacting the ministry,
- outline guidance and advice clients can expect to receive from the ministry at the preliminary screening stage,
- help clients understand how they can gather information about species at risk by accessing publicly available information housed by the Government of Ontario, and
- provide a list of other potential sources of species at risk information that exist outside the Government of Ontario.

It remains the client's responsibility to:

- carry out a preliminary screening for their projects,
- obtain best available information from all applicable information sources,
- conduct any necessary field studies or inventories to identify and confirm the presence or absence of species at risk or their habitat,
- consider any potential impacts to species at risk that a proposed activity might cause, and
- comply with the *Endangered Species Act (ESA)*.

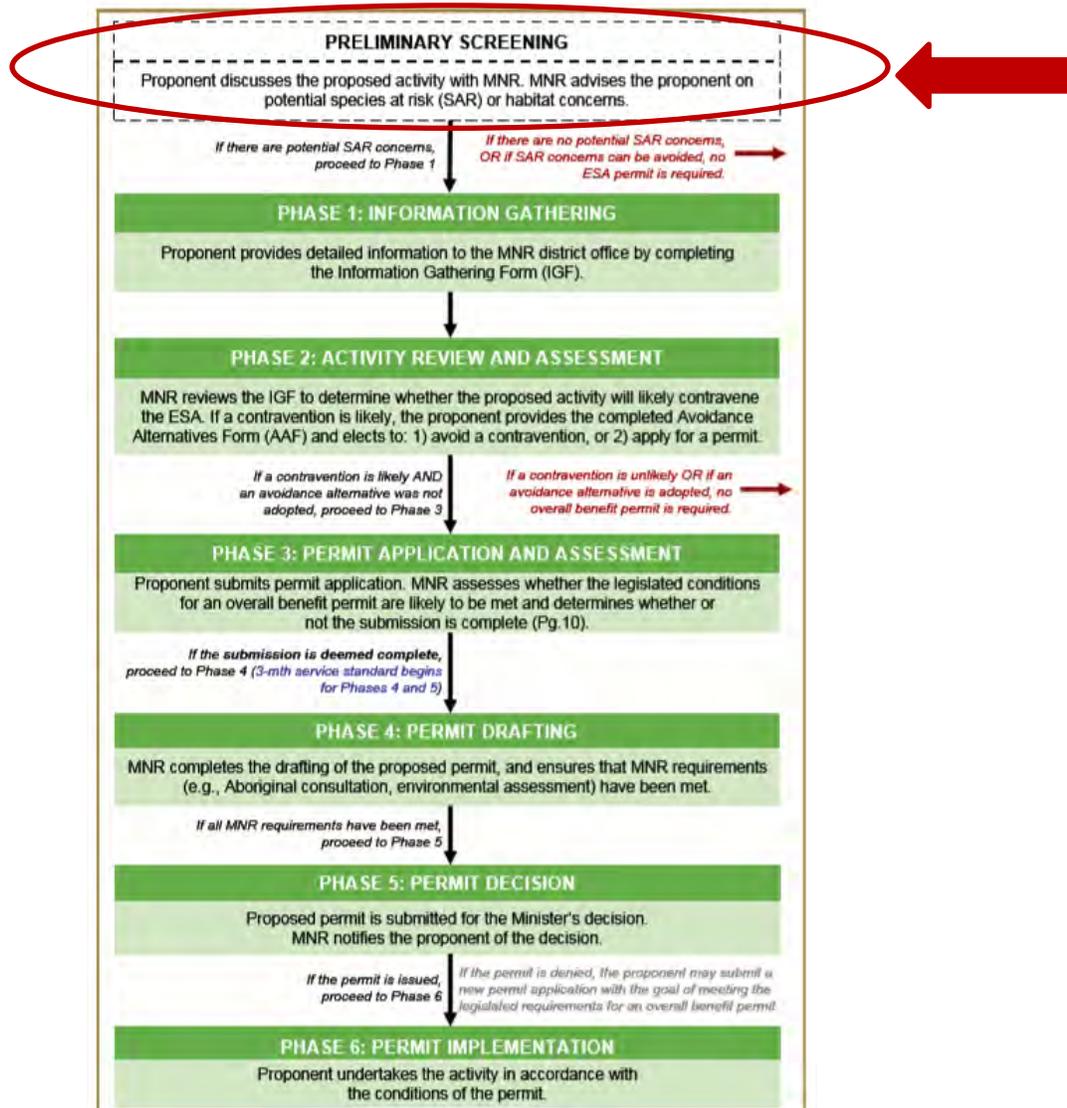
**To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide, at a minimum, prior to contacting Government of Ontario ministry offices for further information or advice.**

### 1.2 Scope

This guide is a resource for clients seeking to understand if their activity is likely to impact species at risk or if they are likely to trigger the need for an authorization under the ESA. It is not intended to circumvent any detailed site surveys that may be necessary to document species at risk or their habitat nor to circumvent the need to assess the impacts of a proposed activity on species at risk or their habitat. This guide is not an exhaustive list of available information sources for any given area as the availability of information on species at risk and their habitat varies across the province. This guide is intended to support projects and activities carried out on Crown and private land, by private landowners, businesses, other provincial ministries and agencies, or municipal government.

### 1.3 Background and Context

To receive advice on their proposed activity, clients must first determine whether any species at risk or their habitat exist or are likely to exist at or near their proposed activity, and whether their proposed activity is likely to contravene the ESA. Once this step is complete, clients may contact the ministry at [SAROntario@ontario.ca](mailto:SAROntario@ontario.ca) to discuss the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. At this stage, the ministry can provide advice and guidance to the client about potential species at risk or habitat concerns, measures that the client is considering to avoid adverse effects on species at risk or their habitat and whether additional field surveys are advisable. This is referred to as the “Preliminary Screening” stage. For more information on additional phases in the diagram below, please refer to the *Endangered Species Act Submission Standards for Activity Review and 17(2)(c) Overall Benefit Permits* policy available online at <https://www.ontario.ca/page/species-risk-overall-benefit-permits>



## 2.0 Roles and Responsibilities

To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide prior to contacting Government of Ontario ministry offices for further information or advice.

**Step 1:** Client seeks information regarding species at risk or their habitat that exist, or are likely to exist, at or near their proposed activity by referring to all applicable information sources identified in this guide.

**Step 2:** Client reviews and consider guidance on whether their proposed activity is likely to contravene the ESA (see section 3.4 of this guide for guidance on what to consider).

**Step 3:** Client gathers information identified in the checklist in section 4 of this guide.

**Step 4:** Client contacts the ministry at [SAROntario@ontario.ca](mailto:SAROntario@ontario.ca) to discuss their preliminary screening. Ministry staff will ask the client questions about the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. Ministry staff will also ask the client for their interpretation of the impacts of their activity on species at risk or their habitat as well as measures the client has considered to avoid any adverse impacts.

**Step 5:** Ministry staff will provide advice on next steps.

**Option A:** Ministry staff may advise the client they can proceed with their activity without an authorization under the ESA where the ministry is confident that:

- no protected species at risk or habitats are likely to be present at or near the proposed location of the activity; or
- protected species at risk or habitats are known to be present but the activity is not likely to contravene the ESA; or
- through the adoption of avoidance measures, the modified activity is not likely to contravene the ESA.

**Option B:** Ministry staff may advise the client to proceed to Phase 1 of the overall benefit permitting process (i.e. Information Gathering in the previous diagram), where:

- there is uncertainty as to whether any protected species at risk or habitats are present at or near the proposed location of the activity; or
- the potential impacts of the proposed activity are uncertain; or
- ministry staff anticipate the proposed activity is likely to contravene the ESA.

### 3.0 Information Sources

Land Information Ontario (LIO) and the Natural Heritage Information Centre (NHIC) maintain and provide information about species at risk, as well as related information about fisheries, wildlife, crown lands, protected lands and more. This information is made available to organizations, private individuals, consultants, and developers through online sources and is often considered under various pieces of legislation or as part of regulatory approvals and planning processes.

The information available from LIO or NHIC and the sources listed in this guide should not be considered as a substitute for site visits and appropriate field surveys. Generally, this information can be regarded as a starting point from which to conduct further field surveys, if needed. While this data represents best available current information, it is important to note that a lack of information for a site does not mean that species at risk or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in more remote parts of the province. The absence of species at risk location data at or near your site does not necessarily mean no species at risk are present at that location. On-site assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats.

Information on the location (i.e. observations and occurrences) of species at risk is considered sensitive and therefore publicly available only on a 1km square grid as opposed to as a detailed point on a map. This generalized information can help you understand which species at risk are in the general vicinity of your proposed activity and can help inform field level studies you may want to undertake to confirm the presence, or absence of species at risk at or near your site.

Should you require specific and detailed information pertaining to species at risk observations and occurrences at or near your site on a finer geographic scale; you will be required to demonstrate your need to access this information, to complete data sensitivity training and to obtain a Sensitive Data Use License from the NHIC. Information on how to obtain a license can be found online at <https://www.ontario.ca/page/get-natural-heritage-information>.

Many organizations (e.g. other Ontario ministries, municipalities, conservation authorities) have ongoing licensing to access this data so be sure to check if your organization has this access and consult this data as part of your preliminary screening if your organization already has a license.

### 3.1 Make a Map: Natural Heritage Areas

The Make a Natural Heritage Area Map (available online at [http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR\\_NHLUPS\\_NaturalHeritage&viewer=NaturalHeritage&locale=en-US](http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US)) provides public access to natural heritage information, including species at risk, without the user needing to have Geographic Information System (GIS) capability. It allows users to view and identify generalized species at risk information, mark areas of interest, and create and print a custom map directly from the web application. The tool also shows topographic information such as roads, rivers, contours and municipal boundaries.

Users are advised that sensitive information has been removed from the natural areas dataset and the occurrences of species at risk has been generalized to a 1-kilometre grid to mitigate the risks to the species (e.g. illegal harvest, habitat disturbance, poaching).

The web-based mapping tool displays natural heritage data, including:

- Generalized Species at risk occurrence data (based on a 1-km square grid),
- Natural Heritage Information Centre data.

Data cannot be downloaded directly from this web map; however, information included in this application is available digitally through Land Information Ontario (LIO) at <https://www.ontario.ca/page/land-information-ontario>.

### 3.2 Land Information Ontario (LIO)

Most natural heritage data is publicly available. This data is managed in a large provincial corporate database called the LIO Warehouse and can be accessed online through the LIO Metadata Management Tool at <https://www.javacoeapp.lrc.gov.on.ca/geonetwork/srv/en/main.home>. This tool provides descriptive information about the characteristics, quality and context of the data. Publicly available geospatial data can be downloaded directly from this site.

While most data are publicly available, some data may be considered highly sensitive (i.e. nursery areas for fish, species at risk observations) and as such, access to some data maybe restricted.

### 3.3 Additional Species at Risk Information Sources

- The Breeding Bird Atlas can be accessed online at <http://www.birdsontario.org/atlas/index.jsp?lang=en>
- eBird can be accessed online at <https://ebird.org/home>
- iNaturalist can be accessed online at <https://www.inaturalist.org/>
- The Ontario Reptile and Amphibian Atlas can be accessed online at <https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas>
- Your local Conservation Authority. Information to help you find your local Conservation Authority can be accessed online at <https://conservationontario.ca/conservation-authorities/find-a-conservation-authority/>

Local naturalist groups or other similar community-based organizations

- Local Indigenous communities
- Local land trusts or other similar Environmental Non-Government Organizations
- Field level studies to identify if species at risk, or their habitat, are likely present or absent at or near the site.
- When an activity is proposed within one of the continuous caribou ranges, please be sure to consider the caribou Range Management Policy. This policy includes figures and maps of the continuous caribou range, can be found online at <https://www.ontario.ca/page/range-management-policy-support-woodland-caribou-conservation-and-recovery>

### 3.4 Information Sources to Support Impact Assessments

- Guidance to help you understand if your activity is likely to adversely impact species at risk or their habitat can be found online at <https://www.ontario.ca/page/policy-guidance-harm-and-harass-under-endangered-species-act> and <https://www.ontario.ca/page/categorizing-and-protecting-habitat-under-endangered-species-act>
- A list of species at risk in Ontario is available online at <https://www.ontario.ca/page/species-risk-ontario>. On this webpage, you can find out more about each species, including where it lives, what threatens it and any specific habitat protections that apply to it by clicking on the photo of the species.

## 4.0 Check-List

Please feel free to use the check list below to help you confirm you have explored all applicable information sources and to support your discussion with Ministry staff at the preliminary screening stage.

- ✓ Land Information Ontario (LIO)
- ✓ Natural Heritage Information Centre (NHIC)
- ✓ The Breeding Bird Atlas
- ✓ eBird
- ✓ iNaturalist
- ✓ Ontario Reptile and Amphibian Atlas
- ✓ List Conservation Authorities you contacted: \_\_\_\_\_  
\_\_\_\_\_
- ✓ List local naturalist groups you contacted: \_\_\_\_\_  
\_\_\_\_\_
- ✓ List local Indigenous communities you contacted: \_\_\_\_\_  
\_\_\_\_\_
- ✓ List any other local land trusts or Environmental Non-Government Organizations you contacted: \_\_\_\_\_  
\_\_\_\_\_
- ✓ List and field studies that were conducted to identify species at risk, or their habitat, likely to be present or absent at or near the site: \_\_\_\_\_  
\_\_\_\_\_
- ✓ List what you think the likely impacts of your activity are on species at risk and their habitat (e.g. damage or destruction of habitat, killing, harming or harassing species at risk): \_\_\_\_\_  
\_\_\_\_\_

## Gabriel Goad

---

**From:** Leclerc, Erika (MCM) <erika.leclerc@ontario.ca>  
**Sent:** Tuesday, March 19, 2024 10:55 AM  
**To:** Jeanorth Sinnakandu  
**Cc:** Tony Guerrero; mleclerc@kawarthalakes.ca; Barboza, Karla (She/Her) (MCM)  
**Subject:** MCM Response - Notice of Commencement - Highway 7 Sewage Pumping Station, City of Kawartha Lakes  
**Attachments:** 2024-03-19 Hwy7SewagePS\_KawarthaLakes\_MCMInitialLetter.pdf

**CAUTION:** This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender, their email address, and know the content is safe.

Dear Jeanorth Sinnakandu,

Thank you for sending the Notice of Commencement for the above-mentioned project to the Ministry of Citizenship and Multiculturalism (MCM). Please find attached MCM's initial letter on this project.

Please do not hesitate to contact us if you have any questions.

Kind regards,

**Erika Leclerc**

Heritage Planner | Heritage Branch | Citizenship, Inclusion and Heritage Division  
Ministry of Citizenship and Multiculturalism | Ontario Public Service  
416-305-0757 | [erika.leclerc@ontario.ca](mailto:erika.leclerc@ontario.ca)



*Taking pride in strengthening Ontario, its places and its people*

---

**From:** Jeanorth Sinnakandu <[jsinnakandu@greergalloway.com](mailto:jsinnakandu@greergalloway.com)>  
**Sent:** February 21, 2024 11:56 AM  
**To:** Harvey, Joseph (MCM) <[Joseph.Harvey@ontario.ca](mailto:Joseph.Harvey@ontario.ca)>; Barboza, Karla (She/Her) (MCM) <[Karla.Barboza@ontario.ca](mailto:Karla.Barboza@ontario.ca)>; [info@scugogfirstnation.com](mailto:info@scugogfirstnation.com); [emilyw@curvelake.ca](mailto:emilyw@curvelake.ca); [juliek@curvelake.ca](mailto:juliek@curvelake.ca); [kaitlinh@curvelake.ca](mailto:kaitlinh@curvelake.ca); [consultation@mbq-tmt.org](mailto:consultation@mbq-tmt.org); [lisam@mbq-tmt.org](mailto:lisam@mbq-tmt.org); Nicole Storms <[nicoles@mbq-tmt.org](mailto:nicoles@mbq-tmt.org)>; [consultation@alderville.ca](mailto:consultation@alderville.ca); [kawarthanishnawbecouncil@outlook.com](mailto:kawarthanishnawbecouncil@outlook.com); [chiefcarr@hiawathafn.ca](mailto:chiefcarr@hiawathafn.ca); Tom Cowie <[tcowie@hiawathafn.ca](mailto:tcowie@hiawathafn.ca)>; Sean Davison <[sdavison@hiawathafn.ca](mailto:sdavison@hiawathafn.ca)>; [jl.porte@georginaisland.com](mailto:jl.porte@georginaisland.com); [evelynb@ramafirstnation.ca](mailto:evelynb@ramafirstnation.ca); [shardayj@ramafirstnation.ca](mailto:shardayj@ramafirstnation.ca); [info@chimnissing.ca](mailto:info@chimnissing.ca); [jcopegog@chimnissing.ca](mailto:jcopegog@chimnissing.ca); [ONT.Web@pwgsc-tpsgc.gc.ca](mailto:ONT.Web@pwgsc-tpsgc.gc.ca); Fuller, Jacqueline (MECP) <[Jacqueline.Fuller@ontario.ca](mailto:Jacqueline.Fuller@ontario.ca)>; Orpana, Jon (MECP) <[Jon.Orpana@ontario.ca](mailto:Jon.Orpana@ontario.ca)>; Minkin, Dan (MCM) <[Dan.Minkin@ontario.ca](mailto:Dan.Minkin@ontario.ca)>  
**Cc:** [inquiries@williamstreatiesfirstnations.ca](mailto:inquiries@williamstreatiesfirstnations.ca); [nodin.webb@hotmail.com](mailto:nodin.webb@hotmail.com); [samgharvey@live.com](mailto:samgharvey@live.com); Tony Guerrero <[tguerrera@greergalloway.com](mailto:tguerrera@greergalloway.com)>  
**Subject:** Notice of Commencement - Highway 7 Sewage Pumping Station, City of Kawartha Lakes

**CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.**

Hello,

Please find attached the Notice of Commencement for the Highway 7 Sewage Pumping Station EA project in Kawartha Lakes, ON.

This Notice was published by the City of Kawartha Lakes on February 6, 2024. The link is below:

<https://www.kawarthalakes.ca/en/news/notice-of-commencement-highway-7-sewage-pumping-station-class-environmental-assessment.aspx>

Please contact us if you have any questions or comments.

Thank you.

Regards,

Jeanorth Sinnakandu, P.Eng.



1620 Wallbridge Loyalist Road, Belleville ON K8N 4Z5  
Tel: (613) 966-3068 Ext: 392; Fax: (613) 966-3087  
Cell: (647) 680-4973  
Web Site: [www.greergalloway.com](http://www.greergalloway.com)  
E-Mail: [jsinnakandu@greergalloway.com](mailto:jsinnakandu@greergalloway.com)

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**Ministry of Citizenship  
and Multiculturalism**

Heritage Planning Unit  
Heritage Branch  
Citizenship, Inclusion and  
Heritage Division  
5th Flr, 400 University Ave  
Tel.: 416-305-0757

**Ministère des Affaires civiques  
et du Multiculturalisme**

Unité de la planification relative au  
patrimoine  
Direction du patrimoine  
Division des affaires civiques, de  
l'inclusion et du patrimoine  
Tél.: 416-305-0757



March 19, 2024

EMAIL ONLY

Marten Leclerc  
Senior Engineering Tech  
City of Kawartha Lakes  
26 Francis Street  
Lindsay, ON K9V 5R8  
[mleclerc@kawarthalakes.ca](mailto:mleclerc@kawarthalakes.ca)

**MCM File** : **0021066**  
**Proponent** : **City of Kawartha Lakes**  
**Subject** : **Municipal Class Environmental Assessment – Schedule B – Notice of Commencement**  
**Project** : **Highway 7 Sewage Pumping Station**  
**Location** : **Community of Lindsay, City of Kawartha Lakes**

---

Dear Marten Leclerc:

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Notice of Commencement for the above-referenced project.

MCM's interest in this project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- archaeological resources, including land and marine;
- built heritage resources, including bridges and monuments; and
- cultural heritage landscapes.

Under the Environmental Assessment (EA) process, the proponent is required to determine a project's potential impact on known (previously recognized) and potential cultural heritage resources.

**Project Summary**

The City of Kawartha Lakes is initiating a planning process to expand the wastewater collection system for the community of Lindsay. The community of Lindsay is rapidly expanding with new developments and requires upgrades to the wastewater collection system to support the increasing needs of the residents of the community. The project is being carried out with the requirements for a Schedule 'B' project under the terms of the Municipal Class EA process.

## Identifying Cultural Heritage Resources

While some cultural heritage resources may have already been formally identified, others may be identified through screening and evaluation.

## Archaeological Resources

This EA project may impact archaeological resources and should be screened using the Ministry's [Criteria for Evaluating Archaeological Potential](#) and [Criteria for Evaluating Marine Archaeological Potential](#) (if shoreline or in-water works are proposed) to determine if an archaeological assessment is needed. MCM archaeological sites data are available at [archaeology@ontario.ca](mailto:archaeology@ontario.ca).

If the EA project area exhibits archaeological potential, then an archaeological assessment (AA) shall be undertaken by an archaeologist licenced under the *Ontario Heritage Act* (OHA), who is responsible for submitting the report directly to MCM for review.

## Built Heritage Resources and Cultural Heritage Landscapes

The Ministry's [Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes](#) should be completed to help determine whether this EA project may impact known or potential built heritage resources and/or cultural heritage landscapes.

If there is potential for built heritage resources and/or cultural heritage landscapes on the property or within the project area, a Cultural Heritage Evaluation Report (CHER) should be undertaken by a qualified person to determine the cultural heritage value or interest of the property (or project area). If the property (or project area) is determined to be of cultural heritage value or interest and alterations or development is proposed, MCM recommends that a Heritage Impact Assessment (HIA), prepared by a qualified consultant, be completed to assess potential project impacts. Please send the HIA to MCM for review and comment and make it available to local organizations or individuals who have expressed interest in review.

Community input should be sought to identify locally recognized and potential cultural heritage resources. Sources include, but are not limited to, municipal heritage committees, historical societies and other local heritage organizations.

Cultural heritage resources are often of critical importance to Indigenous communities. Indigenous communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Indigenous communities includes a discussion about known or potential cultural heritage resources that are of value to them.

## Environmental Assessment Reporting

All technical cultural heritage studies and their recommendations are to be addressed and incorporated into EA projects. Please advise MCM whether any technical cultural heritage studies will be completed for this EA project and provide them to MCM before issuing a Notice of Completion or commencing any work on the site. If screening has identified no known or potential cultural heritage resources, or no impacts to these resources, please include the completed checklists and supporting documentation in the EA report or file.

Please note that the responsibility for administration of the *Ontario Heritage Act* and matters related to cultural heritage have been transferred from the Ministry of Tourism, Culture and Sport (MTCS) to the Ministry of Citizenship and Multiculturalism (MCM). Individual staff roles and contact information remain unchanged. Please continue to send any notices, report and/or documentation **via email only** to both Karla Barboza and myself.

- Karla Barboza, Team Lead - Heritage | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-660-1027 | [karla.barboza@ontario.ca](mailto:karla.barboza@ontario.ca)
- Erika Leclerc, Heritage Planner | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-305-0757 | [erika.leclerc@ontario.ca](mailto:erika.leclerc@ontario.ca)

Thank you for consulting MCM on this project and please continue to do so throughout the EA process. If you have any questions or require clarification, please do not hesitate to contact me.

Sincerely,

Erika Leclerc  
Heritage Planner  
[Erika.leclerc@ontario.ca](mailto:Erika.leclerc@ontario.ca)

Copied to: Tony Guerrero, The Greer Galloway Group Inc.  
Jeanorth Sinnakandu, The Greer Galloway Group Inc.  
Karla Barboza, Team Lead – Heritage Planning, MCM

It is the sole responsibility of proponents to ensure that any information and documentation submitted as part of their EA report or file is accurate. The Ministry of Citizenship and Multiculturalism (MCM) makes no representation or warranty as to the completeness, accuracy or quality of the any checklists, reports or supporting documentation submitted as part of the EA process, and in no way shall MCM be liable for any harm, damages, costs, expenses, losses, claims or actions that may result if any checklists, reports or supporting documents are discovered to be inaccurate, incomplete, misleading or fraudulent.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33* requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with *Ontario Regulation 30/11* the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at [archaeology@ontario.ca](mailto:archaeology@ontario.ca)) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

## **APPENDIX L: First Nations Correspondence**

## Gabriel Goad

---

**From:** Julie Kapyrka <jkapyrka@alderville.ca>  
**Sent:** Tuesday, May 7, 2024 2:16 PM  
**To:** Jeanorth Sinnakandu  
**Cc:** Tony Guerrero  
**Subject:** RE: Notice of Commencement - Highway 7 Sewage Pumping Station, City of Kawartha Lakes  
**Attachments:** Notice of Commencement - Highway 7 Sewage Pumping Station Class Environmental Assessment Feb 2024.pdf

**CAUTION:** This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender, their email address, and know the content is safe.

Aaniin Jeanorth,

Thank you for your e-mail.

Can you please confirm that the filing fee (\$300) for this project has been submitted to Alderville First Nation? As per the guidance in the letter above that was sent out in Feb 2024.

I cannot find anything in my records.

Miigwech.  
All the best,

**Dr. Julie Kapyrka**  
**Consultation Coordinator**



**Administration Office**  
**11696 Second Line Rd.**  
**Roseneath, ON K0K 2X0**  
**Office: 905-352-2662**  
[jkapyrka@alderville.ca](mailto:jkapyrka@alderville.ca)

---

**From:** Jeanorth Sinnakandu <jsinnakandu@greergalloway.com>  
**Sent:** Wednesday, April 10, 2024 4:45 PM  
**To:** Julie Kapyrka <jkapyrka@alderville.ca>  
**Cc:** Tony Guerrero <tguerrera@greergalloway.com>  
**Subject:** RE: Notice of Commencement - Highway 7 Sewage Pumping Station, City of Kawartha Lakes

Hello Julie,

We are currently working on the Schedule B Class EA for the construction of a new sewage pumping station in Lindsay, ON as noted in the below email. A stage 1 and 2 archaeological assessment, environmental assessment, and tree impact assessment were completed for the site of the proposed sewage pumping station. I have attached these documents for your review as part of the EA. Please let us know if you have any questions. Thank you.

Regards,

Jeanorth Sinnakandu, P.Eng.



1620 Wallbridge Loyalist Road, Belleville ON K8N 4Z5  
Tel: (613) 966-3068 Ext: 392; Fax: (613) 966-3087  
Cell: (647) 680-4973  
Web Site: [www.greergalloway.com](http://www.greergalloway.com)  
E-Mail: [jsinnakandu@greergalloway.com](mailto:jsinnakandu@greergalloway.com)

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---

**From:** Jeanorth Sinnakandu

**Sent:** Wednesday, February 21, 2024 11:56 AM

**To:** Harvey, Joseph (MCM) <[Joseph.Harvey@ontario.ca](mailto:Joseph.Harvey@ontario.ca)>; Barboza, Karla (MCM) <[Karla.Barboza@ontario.ca](mailto:Karla.Barboza@ontario.ca)>; [info@scugogfirstnation.com](mailto:info@scugogfirstnation.com); [emilyw@curvelake.ca](mailto:emilyw@curvelake.ca); [juliek@curvelake.ca](mailto:juliek@curvelake.ca); [kaitlinh@curvelake.ca](mailto:kaitlinh@curvelake.ca); [consultation@mbq-tmt.org](mailto:consultation@mbq-tmt.org); [lisam@mbq-tmt.org](mailto:lisam@mbq-tmt.org); Nicole Storms <[nicoles@mbq-tmt.org](mailto:nicoles@mbq-tmt.org)>; [consultation@alderville.ca](mailto:consultation@alderville.ca); [kawarthanishnawbecouncil@outlook.com](mailto:kawarthanishnawbecouncil@outlook.com); [chiefcarr@hiawathafn.ca](mailto:chiefcarr@hiawathafn.ca); Tom Cowie <[tcowie@hiawathafn.ca](mailto:tcowie@hiawathafn.ca)>; Sean Davison <[sdavison@hiawathafn.ca](mailto:sdavison@hiawathafn.ca)>; [jl.porte@georginaisland.com](mailto:jl.porte@georginaisland.com); [evelynb@ramafirstnation.ca](mailto:evelynb@ramafirstnation.ca); [shardayj@ramafirstnation.ca](mailto:shardayj@ramafirstnation.ca); [info@chimnissing.ca](mailto:info@chimnissing.ca); [jcopegog@chimnissing.ca](mailto:jcopegog@chimnissing.ca); [ONT.Web@pwgsc-tpsgc.gc.ca](mailto:ONT.Web@pwgsc-tpsgc.gc.ca); Fuller, Jacqueline (MECP) <[Jacqueline.Fuller@ontario.ca](mailto:Jacqueline.Fuller@ontario.ca)>; Orpana, Jon (MECP) <[Jon.Orpana@ontario.ca](mailto:Jon.Orpana@ontario.ca)>; Minkin, Dan (MCM) <[Dan.Minkin@ontario.ca](mailto:Dan.Minkin@ontario.ca)>

**Cc:** [inquiries@williamstreatiesfirstnations.ca](mailto:inquiries@williamstreatiesfirstnations.ca); [nodin.webb@hotmail.com](mailto:nodin.webb@hotmail.com); [samgharvey@live.com](mailto:samgharvey@live.com); Tony Guerrero <[tguerrera@greergalloway.com](mailto:tguerrera@greergalloway.com)>

**Subject:** Notice of Commencement - Highway 7 Sewage Pumping Station, City of Kawartha Lakes

Hello,

Please find attached the Notice of Commencement for the Highway 7 Sewage Pumping Station EA project in Kawartha Lakes, ON.

This Notice was published by the City of Kawartha Lakes on February 6, 2024. The link is below:

<https://www.kawarthalakes.ca/en/news/notice-of-commencement-highway-7-sewage-pumping-station-class-environmental-assessment.aspx>

Please contact us if you have any questions or comments.

Thank you.

Regards,

Jeanorth Sinnakandu, P.Eng.



1620 Wallbridge Loyalist Road, Belleville ON K8N 4Z5  
Tel: (613) 966-3068 Ext: 392; Fax: (613) 966-3087

Cell: (647) 680-4973

Web Site: [www.greergalloway.com](http://www.greergalloway.com)

E-Mail: [jsinnakandu@greergalloway.com](mailto:jsinnakandu@greergalloway.com)

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# ALDERVILLE FIRST NATION



11696 Second Line Road  
Roseneath, Ontario K0K 2X0  
Phone: (905) 352-2011  
Fax: (905) 352-3242  
www.alderville.ca

Chief: Taynar Simpson  
Councillor: Dawn Marie Kelly  
Councillor: Lisa McDonald  
Councillor: Nora Sawyer  
Councillor: Jason Marsden

VIA E-MAIL

February 28, 2024

Marten Leclerc  
Senior Engineering Tech .  
City of Kawartha Lakes  
26 Francis Street  
Lindsay, ON, K9V 5R8  
[mleclerc@kawarthalakes.ca](mailto:mleclerc@kawarthalakes.ca)

Dear Marten Leclerc,

**RE: Notice of Commencement - Highway 7 Sewage Pumping Station – Class Environmental Assessment**

I would like to acknowledge receipt of your correspondence, which was received February 21<sup>st</sup>, 2024, regarding the above noted project.

As you may be aware, the area in which this project is proposed is situated within the Traditional Territory of Alderville First Nation. Our First Nation's Territory is incorporated within the Williams Treaties Territory and was the subject of a claim under Canada's Specific Claims Policy, which has now been settled. All 7 First Nations within the Williams Treaties have had their harvesting rights legally re-affirmed and recognized through this settlement (2018).

In addition to Aboriginal title, Alderville First Nation rights in its Reserve and Traditional Territory and/or Treaty Territory include rights to hunt, fish and trap, to harvest plants for food and medicine, to protect and honour burial sites and other significant sites, to sustain and strengthen its spiritual and cultural connection to the land, to protect the Environment that supports its survival, to govern itself, sustain itself and prosper including deriving revenues from its lands and resources, and to participate in all governance and operational decisions about how the land and resources will be managed, used and protected.

Alderville First Nation is requiring a File Fee for this project in the amount of \$300.00. This Fee includes administration, an initial meeting, project updates as well as review of standard material and project overviews. Depending on the number of documents to be reviewed by the Consultation Department, additional fees may apply. **Please make this payment to Alderville First Nation and please indicate the project name or number on the cheque.**

*Proudly working together to build a prosperous and healthy environment that promotes independence, honours and respects our values, and enhances our way of life.*

If you do not have a copy of Alderville First Nation's Consultation Protocol, it is available at: [alderville.ca/wp-content/uploads/2017/02/AFNProtocol2.pdf](http://alderville.ca/wp-content/uploads/2017/02/AFNProtocol2.pdf). Please note that the mapping in this document needs updating to reflect the Williams Treaties First Nations Settlement Agreement 2018.

In order to assist us in providing you with timely input, please provide us with a Notice of Request to Consult containing relevant information and material facts in sufficient form and detail to assist Alderville First Nation to understand the matter in order to prepare a meaningful response. Guidance for giving notice can be found on pages 11-12 of our Consultation Protocol. Based on the information that you have provided us with respect to the **Notice of Commencement - Highway 7 Sewage Pumping Station – Class Environmental Assessment**, Alderville First Nation may require a mutual agreement to establish a special consultation process for this project. After the information is reviewed it is expected that you or a representative will be in contact to discuss this matter in more detail and possibly set up a date and time to meet with Alderville First Nation in person or virtually.

Although we have not conducted exhaustive research nor do we have the resources to do so, there may be the presence of burial or archaeological sites in your proposed project area. Please note, that we have particular concern for the remains of our ancestors. Should excavation unearth bones, remains, or other such evidence of a native burial site or any other archaeological findings, we must be notified without delay. In the case of a burial site, Council reminds you of your obligations under the *Cemeteries Act* to notify the nearest First Nation Government or other community of Aboriginal people which is willing to act as a representative and whose members have a close cultural affinity to the interred person. As I am sure you are aware, the regulations further state that the representative is needed before the remains and associated artifacts can be removed. Should such a find occur, we request that you contact our First Nation immediately.

Furthermore, Alderville First Nation also has available, trained Archaeological Liaisons who can actively participate in the archaeological assessment process as a member of a field crew, the cost of which shall be borne by the proponent. Alderville First Nation expects engagement at Stage 1 of an archaeological assessment, so that we may include Indigenous Knowledge of the land in the process. We insist that at least one of our Archaeological Liaisons be involved in any Stage 2-4 assessments, including test pitting, and/or pedestrian surveys, to full excavation.

Although we may not always have representation at all stakeholders' and rights holders' meetings, it is our wish to be kept apprised throughout all phases of this project.

Should you have further questions or if you wish to hire a liaison for a project, please feel free to contact Julie Kapyrka, Consultation Coordinator, at 905-352-2662 or via email at [jkapyrka@alderville.ca](mailto:jkapyrka@alderville.ca).

Yours sincerely,



Chief Taynar Simpson  
Alderville First Nation

## **APPENDIX M: Public Correspondence**

## Gabriel Goad

---

**From:** Marten Leclerc <mleclerc@kawarthalakes.ca>  
**Sent:** Friday, May 10, 2024 2:53 PM  
**To:** [REDACTED]lindsaygolf@gmail.com'; [REDACTED]lindsaygolf@gmail.com';  
[REDACTED]lindsaygolf@bellnet.ca'  
**Cc:** Nafiur Rahman; Corby Purdy; Tony Guerrero; Jeanorth Sinnakandu  
**Subject:** Highway 7 Sewage Pump Station PIC  
**Attachments:** Notice of PIC - Highway 7 SPS + Keymap.pdf

**CAUTION:** This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender, their email address, and know the content is safe.

Hello,

Please see the attached notice of PIC for the Highway 7 Sewage Pump Station. If you have any questions, please let me know.

### **Marten Leclerc**

Senior Engineering Tech  
Engineering & Corporate Assets, City of Kawartha Lakes  
(705) 324 9411 ext. 1131  
<http://www.kawarthalakes.ca/>



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The City of Kawartha Lakes

## NOTICE OF PUBLIC INFORMATION CENTER

### Highway 7 Sewage Pumping Station – Class Environmental Assessment

The City of Kawartha Lakes (City) is currently planning to upgrade the wastewater collection system for the community of Lindsay. The community of Lindsay is rapidly expanding with new developments and requires upgrades to the wastewater collection system to support the increasing needs of the residents of the community.

The project is being carried out with the requirements for a Schedule 'B' project under the terms of the Municipal Class Environmental Assessment (Class EA) process. As part of the class EA process for reviewing the upgrades to the wastewater collection system, public comment during the evaluation of alternatives will be requested.

The City is conducting a public information center on **Wednesday, May 22, 2024 from 5:00 pm to 7:00 pm**. This will be held at the **Victoria Room at City Hall**, located at **26 Francis St, Lindsay, ON K9V 5R8**. We are interested in hearing any comments or concerns that you may have about this project. A public database of comments will be maintained and, except for personal information, included in the study documentation made available for public review. Parties interested in providing input or that wish to obtain additional information at this stage of the study are asked to submit comments in writing to:

Marten Leclerc  
Senior Engineering Tech  
City of Kawartha Lakes  
26 Francis Street  
Lindsay, ON, K9V 5R8  
T: (705) 324 9411 x 1131  
Email: mleclerc@kawarthalakes.ca

Tony Guerrero, P.Eng.  
The Greer Galloway Group Inc.  
1620 Wallbridge Loyalist Road  
Belleville, ON K8N 4Z5  
T: (613) 966-3068  
F: (613) 966-3087  
Email: tguerrera@greergalloway.com

This notice issued May 8, 2024

Under the *Freedom of Information and Protection of Privacy Act* and the *Environmental Assessment Act*, unless otherwise stated in the submission, any personal information such as name, address, telephone number and property location included in a submission will become part of the public record files for this project and will be released, if requested, to any person.

# New Highway 7 SPS Lindsay

## Legend

 Approximate Location of Proposed New SPS

 Approximate Location of Proposed New SPS

le Cemetery and Crematorium

 Kawartha Shawarma and Pizza

15

 The Little Sunflower Farm

Hwy 7

7

Google Earth

 Boyer Chevrolet 1500 ft



## Gabriel Goad

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**From:** Marten Leclerc <mleclerc@kawarthalakes.ca>  
**Sent:** Friday, May 17, 2024 3:58 PM  
**To:** 'John Sale'  
**Cc:** Nafiur Rahman; Tony Guerrero; Jeanorth Sinnakandu  
**Subject:** RE: New Sewage Pump House off Highway 35

**CAUTION:** This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender, their email address, and know the content is safe.

Hi John,

Currently the Lindsay Wastewater Treatment Plant is operating at approximately 57% of its rated capacity. The Lindsay Wastewater Treatment plant has sufficient capacity to handle the additional proposed flow from the Highway 7 sewage pumping station. However, the City is currently undertaking the water and wastewater servicing master plan study which will assess the capacity of all facilities and determine the infrastructure needs due to the overall projected future growth within the community of Lindsay.

If you have any other questions or would like to be added to the project contact list, please let me know.

### **Marten Leclerc**

Senior Engineering Tech  
Engineering & Corporate Assets, City of Kawartha Lakes  
(705) 324 9411 ext. 1131  
<http://www.kawarthalakes.ca/>



**From:** John Sale [REDACTED]  
**Sent:** Tuesday, May 14, 2024 3:03 PM  
**To:** Marten Leclerc <mleclerc@kawarthalakes.ca>  
**Subject:** New Sewage Pump House off Highway 35

Dear Sir,

I appreciate the need to handle the additional waste water from the sizable housing developments to the North West of Lindsay.

My question is whether the existing treatment plant, with an outflow to Sturgeon Lake, is of adequate capacity to satisfactorily deal with the additional volume; or is an additional treatment facility part of the future plans ? I could ask the same question about hospital and doctors, but this is not your personal area of concern !

Regards,  
John

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## Gabriel Goad

---

**From:** Marten Leclerc <mleclerc@kawarthalakes.ca>  
**Sent:** Wednesday, June 26, 2024 2:27 PM  
**To:** 'Dave Medd'; Tony Guerrero  
**Cc:** Nafiur Rahman; Jeanorth Sinnakandu  
**Subject:** RE: Questions for Public information meeting for the Highway 7 Sewage Pumping Station.  
**Attachments:** 2014-255 Consolidated Mandatory Connection to Water and Wastewater Systems By-law(3).docx

**CAUTION:** This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender, their email address, and know the content is safe.

Hi David,

My apologies for the delay in responding.

1. The proposed location was selected to minimize the pumping needs for the entire subdivision as a part of the subdivision will be serviced by gravity only.
2. Please see attached zoning bylaw regarding connections for properties that will be newly serviced.
3. The station will be designed in accordance with Ministry of Environment standards, including all reasonable redundancy measures. These will include level measurement, alarms to operations staff, stand-by pumps, stand-by power, and a valve system that facilitates bypass pumping in the event of an emergency. The Municipality will own and operate the station.
4. Construction is expected to begin early in 2025 pending Council approval of construction funds and other required regulatory approvals, and last approximately eight to twelve months.
5. Some dewatering is likely be required during construction. Most of this will be from shallow excavations and will not affect private wells in the area. Some short-term dewatering will be required for the installation of the new wet well. This is unlikely to affect private wells due to the relatively shallow depth of excavation, and the short duration. However, the extent of dewatering requirement and the mitigation measures if required will be evaluated and considered during the detailed design and permit process.

### Marten Leclerc

Senior Engineering Tech  
Engineering & Corporate Assets, City of Kawartha Lakes  
(705) 324 9411 ext. 1131  
<http://www.kawarthalakes.ca/>



**From:** Dave Medd [REDACTED]  
**Sent:** Wednesday, May 22, 2024 7:13 AM  
**To:** Marten Leclerc <mleclerc@kawarthalakes.ca>; tguerrera@greergalloway.com  
**Subject:** Questions for Public information meeting for the Highway 7 Sewage Pumping Station.

1. How was the location of the pumping station determined? Under what criteria was this location selected?
2. Are local businesses required to tie into new municipal water system? If this is mandatory, will the municipality be covering the cost?
3. The current proposed location of the pumping station is adjacent to a gas station, hotel and proposed senior's home, should there be any sewage breakouts or leakages, what contingencies are in place to handle the malfunction? What responsibility will the municipality assume should leakages affects the health and safety of customers, guests and residents of these properties?
4. When will construction commence? How long will it last?
5. During the construction period, what contingencies are in place should current water table be affected? Who is responsible for resolution of such issues?

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# The Corporation of The City of Kawartha Lakes

## Office Consolidation of By-Law 2014-255

Consolidated on January 31, 2023

Passed by Council on September 9, 2014

Amendments:

1) By-law 2017-181	September 12, 2017	Sections 2.00
2) By-law 2019-007	January 15, 2019	Sections 2.00
3) By-law 2019-188	December 10, 2019	Sections 2.06
4) By-law 2023-004	January 31, 2023	Section 2.05

Note: This consolidation is prepared for convenience only. For accurate reference the original by-laws should be reviewed.

## The Corporation of the City of Kawartha Lakes

### By-Law 2014-255

#### **A By-Law To Require Owners of Buildings To Connect Such Buildings To Drinking Water Systems and/or Wastewater Collection Systems in The City of Kawartha Lakes**

##### **Recitals**

1. Council authorizes the passage of a mandatory connection by-law through resolution number CR2014-853.
2. The Municipal Act, 2001, S.O. 2001, c.25, as amended (the "Municipal Act, 2001") sections 8 and 10 provide authority to municipalities to pass by-laws regarding public utilities, including water and wastewater services, and mandatory connection thereto.
3. Section 425 of the Municipal Act, 2001 provides the authority for a municipality to create an offence for failure to comply with a by-law. Section 426 of the Municipal Act, 2001 provides for the offence of obstruction. Section 429 provides the authority for the municipality to create a system of fines.
4. Pursuant to section 445 (1) of the Municipal Act 2001, if a municipality is satisfied that a contravention of a by-law of the municipality has occurred, the municipality may make an order requiring the person who contravened the by-law to do work to correct the contravention. Section 446 of the Municipal Act, 2001 provides the authority for a municipality to create a by-law that allows the municipality to enter and conduct work where the owner fails to do so, and to recover the costs in the same manner as property taxes.

Accordingly, the Council of The Corporation of the City of Kawartha Lakes enacts this By-law 2014-255.

## Section 1.00: Definitions and Interpretation

1.01 **Definitions:** In this by-law,

**“appurtenances”** means the apparatus or equipment that is an accessory to the drinking water system and/or wastewater collection system including municipal sanitary laterals and/or water services and their components; or an accessory to private sanitary laterals; or to private water services and/or sewage collection systems.

**“Building”** means and includes but is not limited to any building, trailer, or other covering or structure with a water supply which is located on a parcel of land abutting a public highway or street or right of way in front of which a water distribution main and/or wastewater collection main is located or a parcel of land not more than one foot from a public highway or street in which a water distribution main and/or wastewater collection main is located, and

- i. Contains, or is required by this or any other by-law, regulation or statute to contain, any sleeping, eating or food preparation facilities, or
- ii. Contains or is required by this or any other by-law, regulation or statute to contain, any washing or toilet or cleaning facilities, or
- iii. Is connected, or is required by this or any other by-law, regulation or statute to be connected, to a water supply or drinking water system, or
- iv. Is connected or is required by this or any other by-law, regulation or statute to be connected, to a drain or wastewater collection system or
- v. Which is a source of sewage

Other than a barn used for agricultural purposes and which contains no sleeping accommodation for humans.

**“City”, “City of Kawartha Lakes” or “Kawartha Lakes”** means The Corporation of the City of Kawartha Lakes and includes its entire geographic area.

**“City Clerk”** means the person appointed by Council to carry out the duties of the clerk described in section 228 of the Municipal Act, 2001;

**“Connect” (or “connected”, or “connecting” or “connects, or “connections”)** means to install a sanitary sewer lateral and/or water service including associated appurtenances.

**“Cost”** includes but is not limited to the cost of restoring any property disturbed or damaged in the course of making a connection and the cost of design, if any, materials, labour and supervision of the connection incurred after the date of sending a notice and includes the amount of

expense charged by the City to the owner when the municipality makes a connection at the expense of the owner.

**“Council” or “City Council”** means the municipal council for the City.

**“Director”** means the person who holds the position of Director of Public Works and his or her delegate(s) or, in the event of organizational changes, another person designated by Council;

**“Drinking Water System”** means any works for the production, treatment, storage, supply and distribution of water, or any part of such works, according to the Safe Drinking Water Act, 2002, but does not include plumbing to which the Building Code Act, 1992 applies.

**“Municipal Sanitary Lateral”** means the pipes and appurtenances of a municipal sewer system located within the right-of-way and situated between the wastewater collection main and the property line; or up to but not including the inspection tee.

**“Municipal Law Enforcement Officer”** is the person duly appointed within the City’s administration to enforce the by-laws of the City.

**“Municipal Water Service”** means the portion of the water service from the water distribution main to the property line or up to and including the curb stop.

**“Notice”** means a notice given pursuant to this by-law requiring a connection to be made.

**“Owner”** means the registered owner of a lot or parcel of land on which a building is located.

**“Private Sanitary Lateral”** means the portion of the sanitary sewer lateral from the building to the property line or up to and including the inspection tee.

**“Private Water Service”** means the portion of the water service from the building to the property line or up to and not including the curb stop.

**“Wastewater Collection System”** means any works for the collection, pumping, storage, or any part of such works, but does not include plumbing to which the Building Code Act, 1992 applies.

**“Wastewater Collection Main”** means a collection and transmittal pipe or main of the wastewater collection system excluding municipal and/or private sanitary laterals.

**“Water Distribution Main”** means any transmittal pipe or main of the drinking water system excluding municipal and/or private water services.

## 1.02 Interpretation Rules:

(a) The Appendix attached to this by-law forms part of the by-law.

- (b) The words “include” and “including” are not to be read as limiting the meaning of a word or term to the phrases or descriptions that follow.
  - (c) In this by-law, municipal water or wastewater service shall be deemed to be available if the City would be obliged to supply such service or services on request under section 86 (1) of the Municipal Act, 2001.
- 1.03 **Statutes:** References to laws in this by-law are meant to refer to the statutes, as amended from time to time, that are applicable within the Province of Ontario.
- 1.04 **Severability:** If a court or tribunal of competent jurisdiction declares any portion of this by-law to be illegal or unenforceable, that portion of this by-law shall be considered to be severed from the balance of the by-law, which shall continue to operate in full force and effect.

## **Section 2.00: Mandatory Connection**

2.01 Subject to section 2.02 herein the owner of any Building as defined herein where such service or services have capacity, shall be responsible for the physical installation of a private sanitary lateral and/or private water service at the Owners expense and shall be responsible for the payment of all fees and charges payable to the Municipality for the installation and connection of a municipal sanitary lateral and/or water service in accordance with the provisions of this By-law and any and all by-laws governing connections to municipal drinking water systems and wastewater collection systems upon failure and/or need for replacement of their existing private water supply and/or sewage/septic disposal system(s). For further explanation refer to Appendix 1: Connection Diagram.

2019-007 Effective January 15, 2019

2.02 Subject to section 2.01, in the event that water and/or wastewater services become available after the date of passage of this by-law, persons described in section 2.01 shall connect their premises directly to the services in accordance with section 2.01 upon failure of their private water and/or sewage/septic disposal system(s).

2019-007 Effective January 15, 2019

2.03 Notwithstanding sections 2.01 and 2.02, in the event that:

- i. the non-municipal source of potable water for a premises described in Section 2.01 or 2.02 is or may be contaminated or otherwise unsuitable for drinking water as determined by the Medical Officer of Health under the Health Protection and Promotion Act. R.S.O 1990. C.H.7, as amended; or
- ii. the private sanitary sewage septic system servicing a premises described in Section 2.01 or 2.02 is or may contravene the Environmental Protection Act, R.S.O. 1990, c.E.19 or the Building Code Act, 1992, S.O. 1992, c. 23; then

the owner of the premises shall connect the premises to the services immediately.

2019-007 Effective January 15, 2019

- 2.04 Section 2.04 to By-law 2014-255 is deleted in its entirety and replaced with the following:

2019-007 Effective January 15, 2019

- 2.05 Any appeals or requests for exemptions from sections 2.01, 2.02 and 2.03 of this By-law shall be forwarded to Council for consideration.

2019-007 Effective January 15, 2019

2023-004 Effective January 31, 2023

- 2.06 Subject to section 2.01, 2.02 or 2.03 of this by-law any Owner of a building on land that meet the requirements to connect to the municipal water and/or wastewater services shall be billed the Mandatory Connect Fee – Water and/or Mandatory Connect Fee – Sewer as per the provisions of the By-law to Regulate Water and Wastewater Services in the City of Kawartha Lakes (By-law 2018-039, as amended) and the consolidated fees By-law 2018-234, as amended commencing January 1, 2020.

2017-181 Effective September 12, 2017

2019-007 Effective January 15, 2019

2019-188 Effective December 10, 2019

- 2.07 If the Owner fails to make a connection required by the conditions set out in this By-law, the City may make the connection at the sole expense of the Owner and for this purpose may enter into and upon the property of the Owner in accordance with section 435 to 439 inclusive of the Municipal Act, 2001. Failure to connect within a reasonable time from failure shall constitute an offence.

2019-007 Effective January 15, 2019

### **Section 3.00: Decommissioning and Disconnection of Private Services**

- 3.01 **Private Well and/or Water Supply Disconnection:** Upon connection to the municipal drinking water system and upon obtaining a building permit under the Building Code Act to do so, all plumbing from private wells shall be disconnected from the building and maintained in accordance with O. Reg. 903, as amended, to the Ontario Water Resources Act, R.S.O. 1990, c. O.40.

- 3.02 **Failure to Disconnect Private Well and/or Water Supply:** In the event that a private well is to be disconnected from the building at the time the new municipal drinking water supply is connected, the City has the right to enter the property and inspect and perform works to ensure the plumbing for the private well or water supply is disconnected and decommissioned at the Owner's expense in accordance with sections 435 to 439 inclusive, and section 446 of the Municipal Act, 2001, as amended.

- 3.03 **Septic and/or Sewage Disposal System Disconnection:** All septic systems or any other sewage disposal system upon obtaining a permit under the Building Code Act to do so, shall be decommissioned after

connection to the municipal wastewater collection system at the Owner's expense.

- 3.04 **Failure to Disconnect Septic and/or Sewage Disposal System:** In the event that a septic and/or sewage disposal system is not decommissioned in accordance with this by-law, the City has the right to enter the property and inspect and perform works to decommissioned private septic and/or sewage disposal systems at the Owner's expense in accordance with sections 435 to 439 inclusive, and section 446 of the Municipal Act, 2001, as amended.

#### **Section 4.00: Failure to Connect**

- 4.01 If the Owner fails to make a connection required by a Notice within the eighteen (18) month period, the City may make the connection at the sole expense of the Owner and for this purpose may enter into and upon the property of the Owner in accordance with sections 435 to 439 inclusive of the Municipal Act, 2001. Failure to connect by the date set out in the Notice shall constitute an offence.
- 4.02 If the Owner fails to decommission in accordance with this by-law, the City may undertake the works at the sole expense of the Owner and for this purpose may enter into and upon the property of the Owner in accordance with sections 435 to 439 inclusive of the Municipal Act, 2001. Failure of the Owner to decommission the private well and/or water supply by the date set out in the Notice shall constitute an offence.
- 4.03 The City may, at any reasonable time, enter land and/or building in accordance with section 436 of the Municipal Act, 2001 for the purpose of carrying out an inspection in accordance with this by-law, at the Owner's expense.
- 4.04 All persons exercising power of entry to carry out works under this by-law shall be accompanied by an employee or agent of the City and show identification as required by section 435 of the Municipal Act, 2001.
- 4.05 No person shall hinder or obstruct, or attempt to hinder or obstruct, any person exercising a power or performing a duty under this By-law.
- 4.06 The cost of work undertaken by the City in accordance with this by-law shall be added to the tax roll for the property by the Treasurer and be collected in the same manner as municipal taxes or in like manner, in accordance with the Municipal Act, 2001, sections 398 (2), 446 (3) and(5).

#### **Section 5.00: Orders, Enforcement and Penalties**

- 5.01 **Authority:** All authority pursuant to section 445 (1) of the Municipal Act, 2001 to issue Orders requiring persons who have contravened this by-law shall be and is hereby delegated to a Municipal law Enforcement Officer. Any and all authority delegated under this section may only be exercised in accordance with section 445 of the Municipal Act, 2001.

- 5.02 **Offence:** Every person who contravenes any provision of this by-law is guilty of an offence and upon conviction is liable to a fine as provided for by the Provincial Offences Act, R.S.O.1990, Chapter P.33, as amended.
- 5.03 **Offences:** Any person who contravenes any provision of this by-law is guilty of an offence, and upon conviction, is liable to a maximum fine of not more than \$100,000.00, as provided for by section 429 of the Municipal Act, 2001, as amended.
- 5.04 **Corporation:** A director or officer of a corporation who knowingly concurs in the violation or contravention by the corporation of any provision of this by-law is guilty of an offence and upon conviction, is liable to a maximum fine of not more than \$100,000.00, as provided for by Section 429 of the Municipal Act, 2001, as amended.
- 5.05 **Enforcement:** This by-law may be enforced by Municipal Law Enforcement Officers and police officers.

## **Section 6.00: Administration and Effective Date**

- 6.01 **Administration of the By-law:** The Director is responsible for the administration of this by-law.
- 6.02 **Effective Date:** This By-law shall come into force on the date it is finally passed.

By-law read a first, second and third time, and finally passed, this 9<sup>th</sup> day of September, 2014.

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Ric McGee, Mayor

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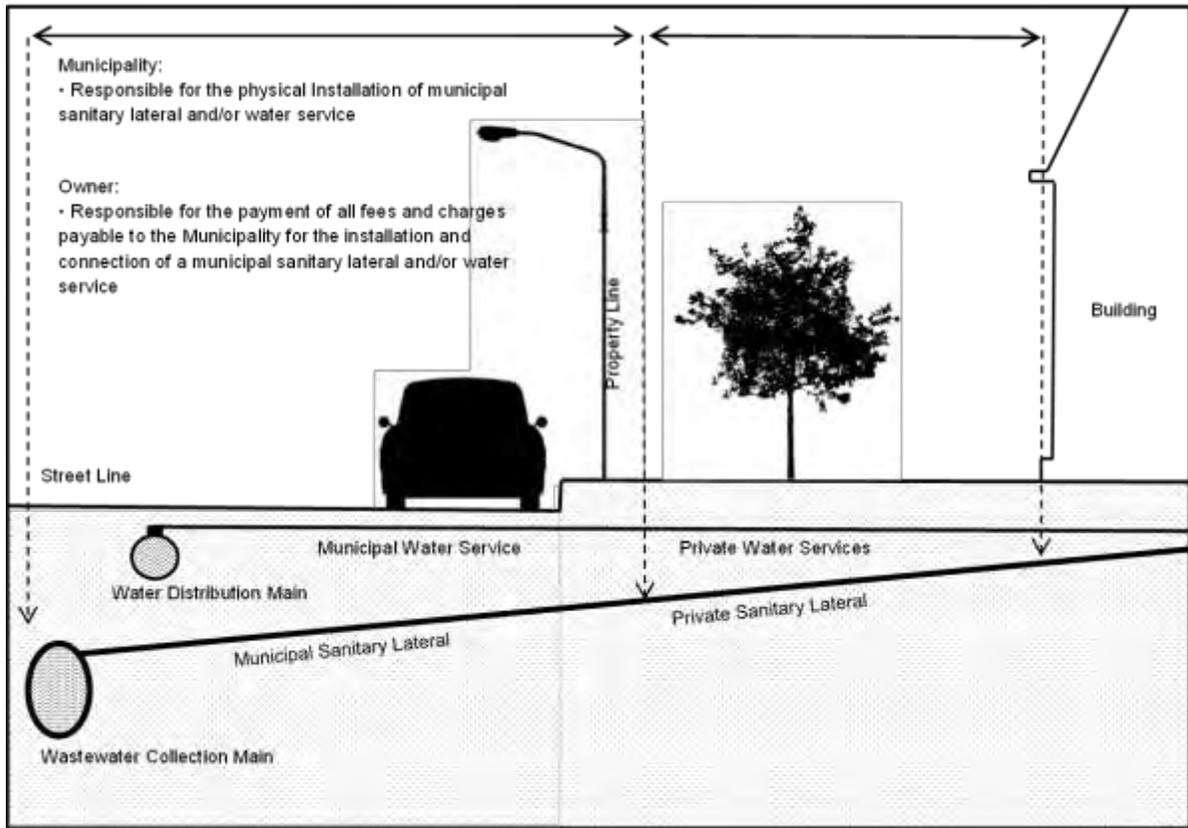
Judy Currins, City Clerk



2014-255 Set  
Fines.pdf

# Appendix 1 – Connection Diagram

Appendix 1: Connection diagram



**APPENDIX N: Notice of Completion**



City of Kawartha Lakes  
**NOTICE OF STUDY COMPLETION**

**New Highway 7 Sewage Pumping Station – Class Environmental Assessment**

The City of Kawartha Lakes (City) has completed a Municipal Class Environmental Assessment (EA) study to determine the preferred solution to expand the wastewater collection system for the community of Lindsay. The City intends to construct a new sewage pumping station and associated forcemain located within the new Gateway Subdivision.

This study was carried out in accordance with the requirements for a Schedule “B” Municipal Class Environmental Assessment. The planning and decision-making process which includes consultation with public, first nations, and review agencies, assessment of environmental impacts of alternative solutions, and identification of the preferred solution has been completed. The project report is available for viewing on-line on the Municipality website.

The 30-day public review period will commence on **September 2, 2024**. For more information or to provide comments please email one of the following project contacts by August 2, 2024:

Marten Leclerc  
Senior Engineering Tech  
City of Kawartha Lakes  
26 Francis Street  
Lindsay, ON K9V 5R8  
T: 705-324-9411 x 1131  
Email: [mleclerc@kawarthalakes.ca](mailto:mleclerc@kawarthalakes.ca)

Tony Guerrero, P. Eng  
The Greer Galloway Group Inc.  
1620 Wallbridge Loyalist Road,  
Belleville, ON K8N 4Z5  
T: (613) 966-3068  
F: (613) 966-3087  
Email: [tguerrera@greergalloway.com](mailto:tguerrera@greergalloway.com)

The public has the ability to request a higher level of assessment on a project if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights. Additionally, the minister may issue an order on his or her own initiative within a specified time period. The director (of the Environmental Assessment Branch) will issue a Notice of Proposed Order to the proponent if the minister is considering an order for the project within 30 days after the conclusion of the comment period provided in the Notice of Completion. Further, the proponent may not proceed after this time if:

- a Section 16 Order request has been submitted to the ministry regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, or
- the Director has issued a Notice of Proposed Order regarding the project.

Members of the public must ensure that concerns are directed to the proponent for a response, and that in the event there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, Section 16 Order requests on those matters should be addressed in writing to:

**Minister, Ministry of the Environment,  
Conservation and Parks**  
777 Bay Street, 5<sup>th</sup> Floor,  
Toronto ON, M7A 2J3  
[Minister.mecp@ontario.ca](mailto:Minister.mecp@ontario.ca)

AND

**Director, Environmental Assessment Branch  
Ministry of Environment, Conservation and Parks**  
135 St. Clair Ave. W, 1<sup>st</sup> Floor,  
Toronto ON, M4V 1P5  
[EABDirector@ontario.ca](mailto:EABDirector@ontario.ca)

For more information on requests for orders under Section 16 of the Environmental Assessment Act visit:  
<https://www.ontario.ca/page/class-environmental-assessments-section-16-order>.

This notice issued September 2, 2024.

Under the *Freedom of Information and Protection of Privacy Act* and the *Environmental Assessment Act*, unless otherwise stated in the submission, any personal information such as name, address, telephone number and property location included in a submission will become part of the public records files for this project and will be released, if requested, to any person.

**APPENDIX O: Site Plan Drawing**

- NOTES:
1. ALL WORK SHALL BE IN ACCORDANCE WITH RELEVANT CODES AND GUIDELINES.
  2. ALL DRAWINGS AND ADDENDA ARE TO BE READ AS, AND IN CONJUNCTION WITH THE SPECIFICATIONS.
  3. ALL EQUIPMENT SHALL BE INSTALLED AS SPECIFIED OR APPROVED EQUIVALENT.
  4. CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS BEFORE PROCEEDING WITH WORK AND BE RESPONSIBLE FOR SAME.
  5. CONTRACTOR MUST REPORT ANY DISCREPANCIES TO ENGINEER FOR RESOLUTION BEFORE COMMENCING THE WORK.
  6. ANY CHANGES MUST BE APPROVED BY THE ENGINEER.

A A DETAIL NO.  
B B DRAWING NO. - WHERE DETAILED

CAD PLOTTER: Tom Funari  
 FILE PATH: P:\Belleville Project\7000\2337786 CKL Hwy 7 Pumping Station Drawings\2337786 CKL Hwy 7 Pumping Station - Site Plan.dwg  
 DATE PLOTTED: 2024 / 08 / 01 @ 01:13 PM  
 PLOT SCALE: 1:1  
 BORDER SIZE: ISO A1 (841mm x 594mm)



101 SITE PLAN  
SCALE: 1:300

SCALE 1:300 5m 0 5m 10m

01	ISSUED FOR REVIEW	24/05/17
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REVISION	DESCRIPTION	DATE

NORTH

PROJECT  
CKL HWY 7  
PUMPING STATION  
LINDSAY, ONTARIO

DRAWING TITLE  
SITE PLAN

DESIGNED BY  
J. SINNAKANDU

DRAWN BY  
T. FUNARI/C. CLARK

REVIEWED BY  
T. GUERRERA

APPROVED BY  
T. GUERRERA

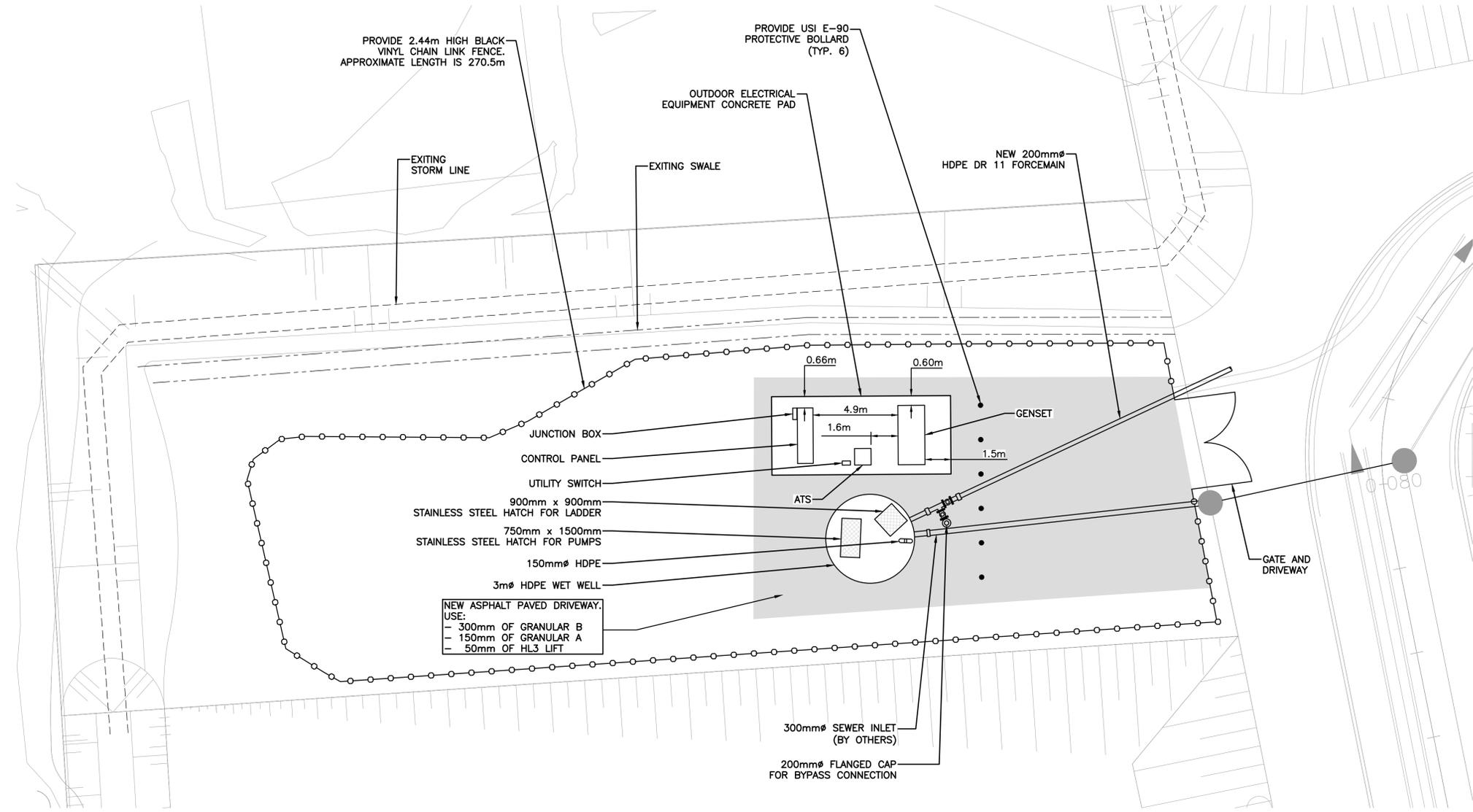
PROJECT DATE  
2024/03/01 (yyy/mm/dd)

PROJECT #  
23-3-7786

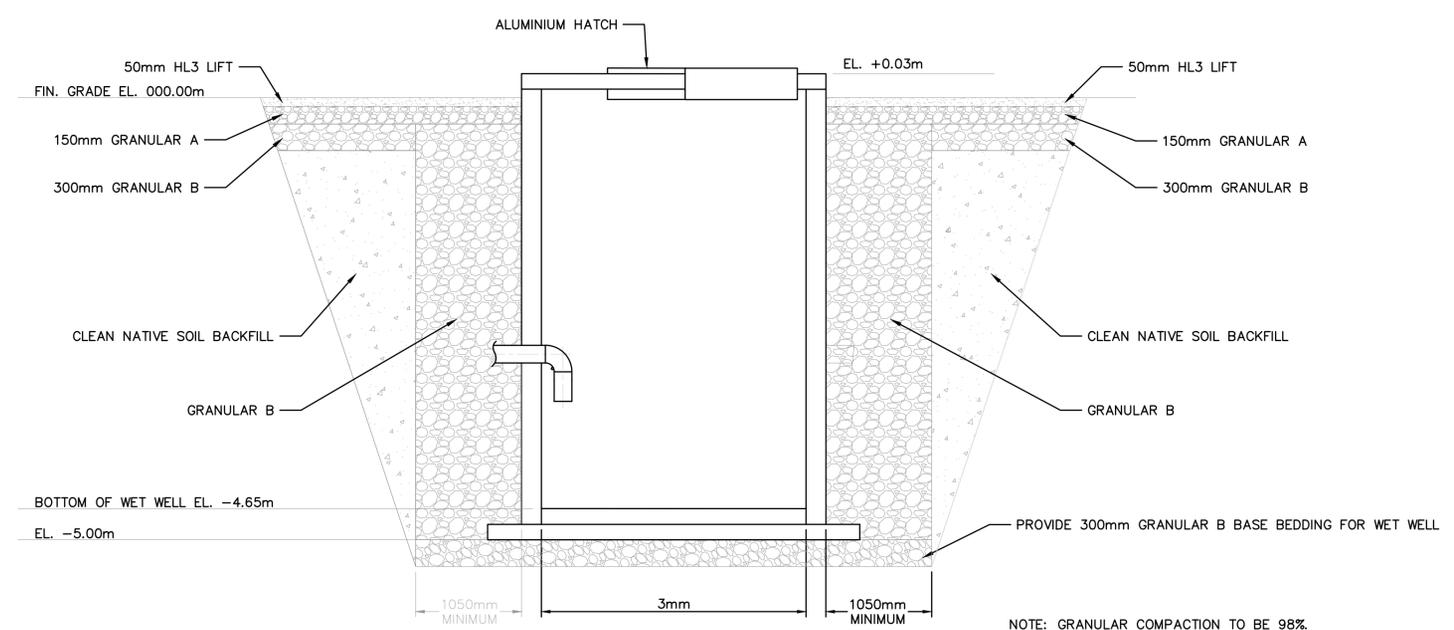
DRAWING #  
SP1

DRAWING SCALE (ISO A1)  
HOR: AS SHOWN  
VER: AS SHOWN

- NOTES:
1. ALL WORK SHALL BE IN ACCORDANCE WITH RELEVANT CODES AND GUIDELINES.
  2. ALL DRAWINGS AND ADDENDA ARE TO BE READ AS, AND IN CONJUNCTION WITH THE SPECIFICATIONS.
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  6. ANY CHANGES MUST BE APPROVED BY THE ENGINEER.
- A A DETAIL NO.  
B B DRAWING NO. - WHERE DETAILED



103 S2 PUMPING STATION - SECTION SCALE: 1:150



103 S2 PUMPING STATION - SECTION SCALE: NTS

01	ISSUED FOR REVIEW	24/05/17
REVISION	DESCRIPTION	DATE

NORTH

STAMP

PROJECT  
CKL HWY 7  
PUMPING STATION  
LINDSAY, ONTARIO

DRAWING TITLE  
DETAILS

DESIGNED BY  
J. SINNAKANDU

DRAWN BY  
T. FUNARI/C. CLARK

REVIEWED BY  
T. GUERRERA

APPROVED BY  
T. GUERRERA

PROJECT DATE  
2024/03/01 (yyy/mm/dd)

PROJECT #  
23-3-7786

DRAWING #  
SP2

DRAWING SCALE (ISO A1)  
HOR: AS SHOWN  
VER: AS SHOWN

CAD PLOTTER: Tom Funari  
 FILE PATH: P:\Belleville Project\7000\2337786 CKL Hwy 7 Pumping Station - Site Plan.dwg  
 DATE PLOTTED: 2024 / 08 / 01 @ 01:13 PM  
 BORDER SIZE: ISO A1 (841mm x 594mm)

**APPENDIX P: Lindsay Sewage Collection System – Environmental Compliance  
Approval**

## ENVIRONMENTAL COMPLIANCE APPROVAL For a Municipal Sewage Collection System

**ECA Number: 141-W601**

**Issue Number: 1**

Pursuant to the *Environmental Protection Act*, R.S.O 1990, c. E. 19 (EPA), and the regulations made thereunder and subject to the limitations thereof, this environmental compliance approval is issued under section 20.3 of Part II.1 of the EPA to:

**Kawartha Lakes, The Corporation of the City of**

**322 Kent St P.O. Box 9000  
Lindsay, ON K9V 5R8**

For the following Sewage Works:

### **City of Kawartha Lakes Wastewater Collection System**

This Environmental Compliance Approval (ECA) includes the following:

<b>Schedule</b>	<b>Description</b>
Schedule A	System Information
Schedule B	Municipal Sewage Collection System Description
Schedule C	List of Notices of Amendment to this ECA: Additional Approved Works
Schedule D	General
Schedule E	Operating Conditions
Schedule F	Residue Management

All prior ECAs, or portions thereof, issued by the Director for Sewage Works described in section 1 of Schedule B are revoked and replaced by this Approval.

DATED at TORONTO this 12th day of October, 2022

Signature



Aziz Ahmed, P.Eng.  
Director, Part II.1, *Environmental Protection Act*

## Schedule A: System Information

System Owner	<b>Kawartha Lakes, The Corporation of the City of</b>
ECA Number	<b>141-W601</b>
System Name	<b>City of Kawartha Lakes Wastewater Collection System</b>
ECA Issue Date	<b>October 12th, 2022</b>

### 1.0 ECA Information and Mandatory Review Date

ECA Issue Date	October 12th, 2022
Application for ECA Review Due Date	October 15, 2026

1.1 Pursuant to section 20.12 of the EPA, the Owner shall submit an application for review of the Approval no later than the Application for ECA Review Date indicated above.

### 2.0 Related Documents

2.1 STPs, Satellite Treatment Facilities, and Pumping Stations connected to the Authorized System that are not part of the Authorized System:

System/Facility Name	Wastewater System Number	Location	ECA Number	Issue Date
Bobcaygeon Water Pollution Control Plant	110002498	127 Boyd Street, Bobcaygeon, ON	3028-AEUKDQ	April 10, 2017
Coboconk Sewage Lagoons	120002353	6688 Highway 35, Coboconk, Kawartha Lakes, ON	9527-AHVRDY	March 17, 2017
Coboconk Sewage Pumping Station 4	120002353	6688 Highway 35, Coboconk, Kawartha Lakes, ON	9527-AHVRDY	March 17, 2017
Fenelon Falls Water Pollution Control Plant	110001612	216 Ellice Street S, Fenelon Falls, ON	3688-BW3RGB	Jan 15, 2021
King's Bay Environmental Centre	110003665	233 South crest Drive,	7037-A77JLP	Feb 16, 2016

		City of Kawartha Lakes, ON		
Lindsay Water Pollution Control Plant	110000383	48 Lagoon Road, Lindsay, ON	1696-BPLL4R	June 29, 2020
Lindsay Sewage Pumping Station - Lindsay St N Leachate	110000383	350 Lindsay St. N, Lindsay, ON	N/A	N/A
Lindsay Sewage Pumping Station - North Leachate	110000383	48 Lagoon St, Lindsay, ON	8668-92MTK7	December 19, 2012
Lindsay Sewage Pumping Station - Middle Leachate	110000383	48 Lagoon St, Lindsay, ON	8668-92MTK7	December 19, 2012
Lindsay Sewage Pumping Station - South Leachate	110000383	48 Lagoon St, Lindsay, ON	8668-92MTK7	December 19, 2012
Omemee Sewage Lagoon	110001630	267 Beaver Rd, City of Kawartha Lakes, ON	2737-B4DH46	Sept 28, 2018

## 2.2 Other Documents

Document Title	Version
Design Criteria for Sanitary Sewers, Storm Sewers, and Force mains for Alterations Authorized under Environmental Compliance Approval	v.1.1 (Jul 28, 2022)

## 3.0 Asset Management Plan

Document Title	Version
City of Kawartha Lakes Asset Management Plan	v.1 (May 2017)

## 4.0 Pollution Prevention and Control Plan (if applicable)

Document Title	Version
N/A	

## 5.0 Operating Authority

Wastewater Collection System or Operational Subsystems	Operating Authority
<p><b><u>Linear/Horizontal Wastewater Infrastructure:</u></b></p> <p>Bobcaygeon Wastewater Collection System  Coboconk Wastewater Collection System  Fenelon Falls Wastewater Collection System  King's Bay Wastewater Collection System  Lindsay Wastewater Collection System  Omeme Wastewater Collection System</p>	<p>City of Kawartha Lakes</p>
<p><b><u>Vertical Wastewater Infrastructure:</u></b></p> <p>Bobcaygeon Sewage Pumping Station 1 – Need St.  Bobcaygeon Sewage Pumping Station 2 – Lance St.  Bobcaygeon Sewage Pumping Station 3 – Bolton St.  Bobcaygeon Sewage Pumping Station 4 – Main St.  Bobcaygeon Sewage Pumping Station 5 – Front St.  Bobcaygeon Sewage Pumping Station 6 – Anne St.  Bobcaygeon Sewage Pumping Station 7 – 8 Navigators Trail  Bobcaygeon Sewage Pumping Station 8 – 54 Navigators Trail  Bobcaygeon Sewage Pumping Station 9 – Mill St.  Bobcaygeon Sewage Pumping Station 10 – Little Bob Dr.  Bobcaygeon Sewage Pumping Station 11 – Riverside Dr.  Coboconk Sewage Pumping Station 1 – South Water St.  Coboconk Sewage Pumping Station 2 – Water St.  Coboconk Sewage Pumping Station 3 – Hwy 35  Fenelon Falls Sewage Pumping Station 1 – Ellice St.  Fenelon Falls Sewage Pumping Station 2 – Colborne St.  Fenelon Falls Sewage Pumping Station 3 – Francis St. E.  Lindsay Sewage Pumping Station – Fairgrounds  Lindsay Sewage Pumping Station – Wellington St.  Lindsay Sewage Pumping Station – Rivera Park  Lindsay Sewage Pumping Station – Jennings Creek  Lindsay Sewage Pumping Station – Mary Street E.  Lindsay Sewage Pumping Station – Logie St.  Lindsay Sewage Pumping Station – Ridout St.  Lindsay Sewage Pumping Station – Riverview  Lindsay Sewage Pumping Station – Lindsay St. N.  Omeme Wastewater Collection System 1 – Church St.  Omeme Wastewater Collection System 2 – Sturgeon Rd.</p>	<p>Ontario Clean Water Agency</p>

## Schedule B: Municipal Sewage Collection System Description

System Owner	<b>Kawartha Lakes, The Corporation of the City of</b>
ECA Number	<b>141-W601</b>
System Name	<b>City of Kawartha Lakes Wastewater System</b>
ECA Issue Date	<b>October 12th, 2022</b>

### 1.0 System Description

- 1.1 The following is a summary description of the Sewage Works comprising the Municipal Sewage Collection System:

#### Overview

The City of Kawartha Lakes Wastewater Collection System consists of works for the collection and transmission of sewage for 6 subsystems located throughout the municipality. In total there is approximately 170 km of sanitary sewer piping and twenty-eight [28] sewage pumping stations. Wastewater collection flows will discharge to six [6] wastewater treatment facilities. Each wastewater subsystem description is included below

#### Wastewater Subsystems:

The Bobcaygeon Sewage Collection System consists of works for the collection and transmission of sewage, consisting of approximately 25 km in total linear length of gravity sewers discharging to one of eleven sewage pumping stations, eventually leading to Bobcaygeon Water Pollution Control Plant.

The Coboconk Sewage Collection System consists of works for the collection and transmission of sewage, consisting of 3.5 km of sanitary sewer piping, three sewage pumping stations that eventually discharges into the Coboconk Sewage Lagoons.

The Fenelon Falls Sewage Collection System consists of works for the collection and transmission of sewage, comprising of approximately 13.4 km in total linear length of gravity sewers discharging to three sewage pumping stations, eventually leading to the Fenelon Falls Water Pollution Control Plant.

The King's Bay Environmental Sewage Collection System consists of works for the collection and transmission of sewage, comprising of approximately 1.5 km of sanitary sewer piping that discharges to the King's Bay Environmental Centre.

The Lindsay Sewage Collection System consists of works for the collection and transmission of sanitary sewage, comprising of approximately 117 km in total linear length of gravity sewers and 9 sewage pumping stations that eventually discharge to the Lindsay Water Pollution Control Plant.

The Omemee Sewage Collection System consists of works for the collection and transmission of sewage, comprising approximately 8.2 km in total linear length of gravity sewers discharging to two sewage pumping stations, eventually leading to the Omemee Sewage Lagoon.

## Sewage Collection System

1.2 The Authorized System comprises:

1.2.1 The Sewage Works described and depicted in each document or file identified in column 1 of Table B1.

<b>Table B1: Infrastructure Map</b>	
Column 1 Document or File Name	Column 2 Date
Bobcaygenon_Sanitary_Sewer_System_Map_Sept_2021_1	September 2021
Coboconk_Sanitary_Sewer_Syetem_Map_Sept_2021_1	September 2021
Fenelon_Sanitary_Sewer_System_Map_Sept_2021_1	September 2021
KingsBay_Sanitary_Sewer_System_Map_Sept_2021_1	September 2021
Lindsay_Sanitary_Sewer_System_Map_Sept_2021_1	September 2021
Omemee_Sanitary_Sewer_System_TileMaps	September 29, 2021

1.2.2 Sewers, forcemains, pumping stations and other Sewage Works that have been added, modified, replaced, or extended through authorization provided in a Schedule C Notice respecting this Approval, where Completion occurs on or after the date identified in column 2 of Table B1 for each document or file identified in column 1.

1.2.3 Sewers, forcemains, pumping stations and other Sewage Works that have been added, modified, replaced, or extended through authorization provided in Schedule D of this Approval, where Completion occurs on or after the date identified in column 2 of Table B1 for each document or file identified in column 1.

1.2.4 Any Sewage Works described in conditions 1.3, through 1.7 below.

## Sewage Pumping Stations

1.3 The following are Sewage pumping stations in the Authorized System:

### Bobcaygeon Sewage Pumping Station 1

Asset ID and Name	Bobcaygeon Sewage Pumping Station 1 – Need St
Site Location	0 Need St, Bobcaygeon, City of Kawartha Lakes, ON
Latitude and Longitude	44.5387040, -78.541356
Coordinates (optional)	Not available
Description	Sewage pumping station with a 3.2 m x 3.4 m x 7.8 m SWD wet well
Pumping Station Capacity	Not Available
Equipment	Equipped with three (3) 20 hp submersible pumps (2 duty, 1 standby), each rated at 17.8 L/s. The station is connected to a 970 m long 200 mm diameter forcemain along Boyd Street complete with 3 check valves, 4 gate valves, 1 level sensor, and 1 level meter. Station discharges to the Bobcaygeon Water Pollution Control Plant Station also has a 100 mm diameter bypass connection to provide external pumping to the forcemain.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms control by communications system sent to Bobcaygeon WPCP
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	N/A
Standby Power	Standby power supplied by generator at Bobcaygeon WPCP.
Notes	N/A

### Bobcaygeon Sewage Pumping Station 2

Asset ID and Name	Bobcaygeon Sewage Pumping Station 2 – Lance St
Site Location	0 Lance St, Bobcaygeon, City of Kawartha Lakes, ON
Latitude and Longitude	44.533150, -78.550940
Coordinates (optional)	Not available
Description	Sewage pumping station with a 2.4 m diameter 6.7 m SWD wet well
Pumping Station Capacity	Not Available
Equipment	Equipped with two (2) 7.5 hp submersible pumps (one duty, one standby), each rated at 13.9 L/s. Station complete with 2 check valves, 3 gate valves, 1 level sensor, and 1 level meter. The station is connected to a 170 m 150 mm diameter forcemain along King Street, discharging to Manhole 135 to

	Bobcaygeon Sewage Pumping Station 1 – Need St and then to Bobcaygeon WPCP. Station also has a 100 mm diameter bypass connection to provide external pumping to the forcemain.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms control by communications system sent to Bobcaygeon WPCP
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Standby power supplied by a 45-kW diesel generator set with a 910L fuel tank.
Notes	Not applicable

### Bobcaygeon Sewage Pumping Station 3

Asset ID and Name	Bobcaygeon Sewage Pumping Station 3 – Bolton St
Site Location	11 Bolton St, Bobcaygeon, City of Kawartha Lakes, ON
Latitude and Longitude	44.53798, -78.54608
Coordinates (optional)	Not available
Description	Sewage pumping station with a 3.0 m diameter 6.6 m SWD wet well
Pumping Station Capacity	Not Available
Equipment	Equipped with two (2) 10 hp submersible pumps (one duty, one standby), each rated at 6.7 L/s at 15.8 m TDH, 2 Check valves, 2 gate valves, and 1 level sensor. The station is connected to a 190 m long 100 mm diameter forcemain along Main Street, discharging to Manhole 187 and from there to Bobcaygeon Sewage Pumping Station 4 – Main St. Station also has a 100 mm diameter bypass connection to provide external pumping to the forcemain.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms control by communications system sent to Bobcaygeon WPCP
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Standby power supplied by generator at the Bobcaygeon Water Treatment Plant.
Notes	Not applicable

**Bobcaygeon Sewage Pumping Station 4**

Asset ID and Name	Bobcaygeon Sewage Pumping Station 4 – Main St
Site Location	0 Main St, Bobcaygeon, City of Kawartha Lakes, ON
Latitude and Longitude	44.539842, -78.546735
Coordinates (optional)	Not available
Description	Sewage pumping station with a 2.1 m diameter 5.6 m SWD wet well
Pumping Station Capacity	Not Available
Equipment	Equipped with two (2) 2.4 hp submersible pumps (one duty, one standby), each rated at 6.3 L/s, 2 check valves, 3 gate valves, 1 level sensor, and 1 level meter. Station connected to 100 mm diameter forcemain along Main Street that is 80 m long, discharging to Manhole 91 and from there to Bobcaygeon Sewage Pumping Station No. 6 and then to Bobcaygeon WPCP
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms control by communications system sent to Bobcaygeon WPCP
Sewage Pumping Station – Collection System Overflow	200 mm diameter emergency overflow to the Big Bob River
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Standby power supplied by generator at the Bobcaygeon Water Treatment Plant.
Notes	Not applicable

**Bobcaygeon Sewage Pumping Station 5**

Asset ID and Name	Bobcaygeon Sewage Pumping Station 5 – Front St
Site Location	190 Front St W, Bobcaygeon, City of Kawartha Lakes, ON
Latitude and Longitude	44.536587, -78.555552
Coordinates (optional)	Not available
Description	Sewage pumping station with a 2.4 m diameter 7.5 m SWD wet well
Pumping Station Capacity	Not Available
Equipment	Equipped with two (2) 3 hp submersible pumps (one standby, one standby), each rated at 13.9 L/s at 8.1 m TDH, 2 check valves, 2 gate valves, 1 level sensor, and 1 level meter. Station connected to 150 mm diameter forcemain that is 240 m in length, along Front Street, discharging to Manhole 100 and from there to Bobcaygeon Sewage Pumping Station 6 – Anne St and then to Bobcaygeon WPCP
Emergency Storage	Not applicable
Equipment: Associated	System controls and indicator alarms control by

controls and Appurtenances	communications system sent to Bobcaygeon WPCP
Sewage Pumping Station – Collection System Overflow	N/A
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Not applicable
Notes	Not applicable

### Bobcaygeon Sewage Pumping Station 6

Asset ID and Name	Bobcaygeon Sewage Pumping Station 6 – Anne St
Site Location	47 Anne St, Bobcaygeon, City of Kawartha Lakes, ON
Latitude and Longitude	44.542418, -78541170
Coordinates (optional)	Not available
Description	Sewage pumping station with a 4.0 m x 4.1 m x 7.5 m SWD wet well
Pumping Station Capacity	Not Available
Equipment	Equipped with three (3) 20 hp submersible pumps (two duty, one standby), each rated at 30.5 L/s, 3 check valves, 3 gate valves, 1 level sensor, and 1 level meter. Station connected to a 300 mm diameter forcemain along East Street 1160 m long, discharging to the Bobcaygeon WPCP. Station also has a 100 mm diameter bypass connection to provide external pumping to the forcemain.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms control by communications system sent to Bobcaygeon WPCP
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Standby power supplied by a 100-kW diesel generator with a 910L fuel tank
Notes	Not applicable

### Bobcaygeon Sewage Pumping Station 7

Asset ID and Name	Bobcaygeon Sewage Pumping Station 7 – 8 Navigators Trail
Site Location	8 Navigators Trail, Bobcaygeon, City of Kawartha Lakes, ON
Latitude and Longitude	44.539818, -78.535243
Coordinates (optional)	Not available

Description	Sewage pumping station with one 3.0 m diameter x 5.4 m SWD wet well style located across from #9 Navigators Trail (between #6 & #22)
Pumping Station Capacity	Not Available
Equipment	Equipped with three (3) 20 hp submersible pumps (two duty, one standby), each rated at 42.0 L/s, 2 check valves, 3 gate valves, 1 level sensor, and 1 level meter. Station connection to 250 mm diameter forcemain that is 140 m long along Navigators Trail, discharging to a 300 mm diameter forcemain on Boyd Street and there to the Bobcaygeon WPCP. Station also has a 100 mm diameter bypass connection to provide external pumping to forcemain.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms control by communications system sent to Bobcaygeon WPCP
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Standby power supplied by generator at Bobcaygeon WPCP
Notes	Not applicable

### Bobcaygeon Sewage Pumping Station 8

Asset ID and Name	Bobcaygeon Sewage Pumping Station 8 – 54 Navigators Trail
Site Location	54 Navigators Trail, Bobcaygeon, City of Kawartha Lakes, ON
Latitude and Longitude	44.540616, -78.530163
Coordinates (optional)	Not available
Description	Sewage pumping station with a 2.4 m diameter 4.0 m SWD wet well
Pumping Station Capacity	Not Available
Equipment	Equipped with two (2) 5 hp submersible pumps (one duty, one standby), each rated at 18.9 L/s, 2 check valves, 3 gate valves, 1 level sensor, and 1 level meter. Station connected to 150 mm diameter forcemain that is 380 m long along Navigators Trail, discharging to a Manhole 35P1 to Bobcaygeon Sewage Pumping Station 7 – 8 Navigators Trail and then to Bobcaygeon WPCP. Station also has a 100 mm diameter bypass connection to provide external pumping to the forcemain.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms control by communications system sent to Bobcaygeon WPCP
Sewage Pumping Station –	Not applicable

Collection System Overflow	
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Standby power supplied by generator at Bobcaygeon WPCP
Notes	Not applicable

### Bobcaygeon Sewage Pumping Station 9

Asset ID and Name	Bobcaygeon Sewage Pumping Station 9 – Mill St
Site Location	0 Mill St, Bobcaygeon, City of Kawartha Lakes, ON
Latitude and Longitude	44.534405, -78.532662
Coordinates (optional)	Not available
Description	Sewage pumping station with a 2.4 m diameter 5.2 m SWD wet well
Pumping Station Capacity	Not Available
Equipment	Equipped with two (2) 5 hp submersible pumps (one duty, one standby), each rated at 18.9 L/s, 2 check valves, 3 gate valves, 1 level sensor, and 1 level meter. Station connection to 150 mm diameter forcemain that is 360 m long along Mill Street, discharging to Manhole 42P2 and from there to Bobcaygeon Sewage Pumping Station 7 – 8 Navigator Trail. Station also has a 100 mm diameter bypass connection to provide external pumping to the forcemain.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms control by communications system sent to Bobcaygeon WPCP
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Standby power supplied by generator at Bobcaygeon WPCP
Notes	Not applicable

### Bobcaygeon Sewage Pumping Station 10

Asset ID and Name	Bobcaygeon Sewage Pumping Station 10 – Little Bob Dr
Site Location	39 Little Bob Drive, Bobcaygeon, City of Kawartha Lakes, ON
Latitude and Longitude	44.530977, -78.533202
Coordinates (optional)	Not available
Description	Sewage pumping station with a 2.0 m diameter 6.8 m SWD wet

	well
Pumping Station Capacity	Not Available
Equipment	Equipped with two (2) 5 hp submersible pumps (one duty, one standby) each rated at 15.0 L/s, 2 check valves, 2 plug valves, 3 gate valves, 1 level sensor, and 1 level meter. Station connected to 60 m long 150 mm diameter forcemain along Little Bob Drive, discharging to Manhole 441, to Bobcaygeon Sewage Pumping Station 1 – Need St and then to Bobcaygeon WPCP. Station also has a 100 mm diameter bypass connection to provide external pumping to the forcemain.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms control by communications system sent to Bobcaygeon WPCP
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Standby power supplied by a 25 kW diesel generator set with a 910L fuel tank.
Notes	Not applicable

### Bobcaygeon Sewage Pumping Station 11

Asset ID and Name	Bobcaygeon Sewage Pumping Station 11 – Riverside Dr
Site Location	179 Riverside Drive, Bobcaygeon, City of Kawartha Lakes, ON
Latitude and Longitude	44.546852, -78.534343
Coordinates (optional)	Not available
Description	Sewage pumping station with a 2.0 m diameter 7.2 m SWD wet well
Pumping Station Capacity	Not Available
Equipment	Equipped with two (2) 5 hp submersible pumps (one standby), each rated at 14.1 L/s, 2 check valves, 2 plug valves, 2 gate valves, 1 level sensor, and 1 level meter. Station connected to 150 mm diameter forcemain that is 800 m long along Riverside Drive, discharging to Manhole 433 to Bobcaygeon Sewage Pumping Station 6 – Anne St and then to Bobcaygeon WPCP. Station also has a 100 mm diameter bypass connection to provide external pumping to the forcemain.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System relay controls and indicator alarms control by communications system sent to Bobcaygeon WPCP

Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Standby power supplied by the 100-kW diesel generator at Sewage Pumping Station No. 6
Notes	Not applicable

### Coboconk Sewage Pumping Station 1

Asset ID and Name	Coboconk Sewage Pumping Station 1 – South Water St
Site Location	South Water Street, Coboconk, City of Kawartha Lakes, ON
Latitude and Longitude	44.656849, -78.797769
Coordinates (optional)	N/A
Description	Sewage Pumping Station 1 with 2.4 m diameter concrete wet well, located on S Water Street and approximately 80 m southwest of Queen St, beside 19 Water St.
Pumping Station Capacity	13.96 L/s (from design brief)
Equipment	2 Submersible pumps (1 duty, 1 standby), each rated at 8.19 L/s at a total dynamic head of 10.7 m. The station is connected to 260 m of 100 mm diameter forcemain complete with 2 gate valves, 2 check valves, level meter, level sensor, internal piping, and electrical system.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms controlled by local PLC which communicates with Coboconk Sewage Pumping Station 3 – Hwy 35
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Standby power supply provided by 125 kW diesel generator with 1135 L capacity fuel tank attached to SPS 3
Notes	Not applicable

### Coboconk Sewage Pumping Station 2

Asset ID and Name	Coboconk Sewage Pumping Station 2 – Water St
Site Location	3 Water St., Coboconk, City of Kawartha Lakes, ON
Latitude and Longitude	44.658556, -78.797488
Coordinates (optional)	Not available
Description	Sewage pumping station 2 with 3 m diameter concrete wet

	well, located approximate 30 m southwest of Cameron Street.
Pumping Station Capacity	22.42L/s (from design brief)
Equipment	2 Submersible pumps (1 duty, 1 standby), each rated at 8.19 L/s at a total dynamic head of 10.7 m. The station is connected to 260 m of 100 mm diameter forcemain complete with 2 gate valves, 2 check valves, level meter, level sensor, internal piping, and electrical system.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms controlled by local PLC which communicates with Coboconk SPS 3
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Standby power supply provided by 125 kW diesel generator with 1135 L capacity fuel tank attached to Coboconk Sewage Pumping Station 3 – Hwy 35
Notes	Not applicable

### Coboconk Sewage Pumping Station 3

Asset ID and Name	Coboconk Sewage Pumping Station 3 – Hwy 35
Site Location	Highway 35, Coboconk, City of Kawartha Lakes, ON
Latitude and Longitude	44.66058, -78.79922
Coordinates (optional)	Not available
Description	Sewage Pumping Station 3 with 3.6 m diameter concrete wet well, located on Main Street (Highway 35), approximately 75 m southeast of Grandy Road.
Pumping Station Capacity	Not Available
Equipment	2 Submersible pumps (1 duty, 1 standby), each rated at 19.5 L/s at a total dynamic head of 28.3 m. The station discharges to 1.1 km of 150 mm diameter forcemain complete with 2 gate valves, 2 check valves, 1 magnetic flow meter, 1 level meter, 1 level sensor, internal piping, and electrical system.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms controlled by local PLC which communicates to Coboconk Service Centre.
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Standby power supply provided by 125 kW diesel generator with 1135 L capacity fuel tank

Notes	Contains a continuous phosphorous removal system consisting of 2 metering pumps with a 22,600 L capacity chemical storage tank. Attached to the 150 mm diameter forcemain. Discharges to the lagoon.
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### Fenelon Falls Sewage Pumping Station 1

Asset ID and Name	Fenelon Falls Sewage Pumping Station 1 – Ellice St
Site Location	61 Ellice St, Fenelon Falls, City of Kawartha Lakes, ON
Latitude and Longitude	44.529968, -78.733943
Coordinates (optional)	Not available
Description	Sewage pumping station 1 with a 14.4 m <sup>3</sup> wet well/drywell type located on the east side of Ellice Street between Juniper Street and Wychwood Crescent
Pumping Station Capacity	Not Available
Equipment	Contains three (3) variable speed pumps (two duty, one standby), each rated at 60 L/s at 21 m TDH; complete with 4 plug valves, 3 check valves, 1 level meter, level sensor, internal piping, and electrical system. The station is connected to 644 m long, 200 mm diameter forcemain along Ellice Street, eventually discharging to Fenelon Falls Water Pollution Control Plant.
Emergency Storage	Equipped with a 24 m x 6.25 m x 6.57 m depth wet weather flow detention tank with a 400 mm diameter inlet pipe connected to wet well and a 300 mm diameter outlet pipe connected to the existing pump suction.
Equipment: Associated controls and Appurtenances	System controls and indicator alarms controlled by local PLC which communicates with Fenelon Falls Water Pollution Control Plant
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	One (1) 75 kW diesel generator set with 935 L fuel tank
Notes	Not applicable

### Fenelon Falls Sewage Pumping Station 2

Asset ID and Name	Fenelon Falls Sewage Pumping Station 2 – Colborne St
Site Location	1 Colborne St, Fenelon Falls, City of Kawartha Lakes, ON
Latitude and Longitude	44.535925, -78.736196
Coordinates (optional)	Not available
Description	Sewage pumping station with a 38.7 m <sup>3</sup> wet well located on the extension of Oak Street, approximately 76 m east of

	Colborne St.
Pumping Station Capacity	Not Available
Equipment	Equipped with 2 Submersible pumps (1 duty, 1 standby), each rated at 50 L/s at a total dynamic head of 13 m, complete with 2 gate valves, 2 check valves, 1 magnetic flow meter, 1 level meter, 1 level sensor, internal piping, and electrical system. The station is connected to 278 m of 200 mm diameter forcemain along Colborne Street. Discharges to a sanitary manhole at the intersection of Lindsay Street and Helen Street.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms controlled by local PLC which communicates with Fenelon Falls Water Pollution Control Plant
Sewage Pumping Station – Collection System Overflow	200 mm diameter emergency overflow from the wet well to Fenelon River
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	One (1) 80 kW diesel generator set with fuel tank
Notes	Not applicable

### Fenelon Falls Sewage Pumping Station 3

Asset ID and Name	Fenelon Falls Sewage Pumping Station 3 – Francis St E
Site Location	170 Francis St E, Fenelon Falls, City of Kawartha Lakes, ON
Latitude and Longitude	44.531371, -78.727577
Coordinates (optional)	Not available
Description	Sewage pumping station with an 18m <sup>3</sup> wet well on the south side of Francis Street, approximately 120 m west of Concession Street
Pumping Station Capacity	Not Available
Equipment	Equipped with two (2) submersible pumps (one duty, one standby), each rated at 6.2 L/s at 15.2 TDH, complete with 2 gate valves, 2 check valves, level meter, level sensor, internal piping, and electrical system. The station is connected to 566 m long 100 mm diameter forcemain along Francis Street and discharges to a manhole 40 m east of Clifton Street
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms controlled by local PLC which communicates with Fenelon Falls Water Pollution Control Plant
Sewage Pumping Station – Collection System Overflow	200 mm diameter emergency overflow from the wet well to Fenelon River
Receiving Stations (if applicable)	Not applicable

Odour Control Units	Not applicable
Standby Power	Provided by portable generator
Notes	Not applicable

### Lindsay Sewage Pumping Station - Fairgrounds

Asset ID and Name	Lindsay Sewage Pumping Station - Fairgrounds
Site Location	The Lindsay Fairgrounds - 354 Angeline Street South, City of Kawartha Lakes, ON (located at northeast of the intersection of Highway No. 7 and Angeline Street)
Latitude and Longitude	44.32929, -78.73751
Coordinates (optional)	Not available
Description	Sewage pumping station with a 4.0 m square precast concrete wet well
Pumping Station Capacity	Not Available
Equipment	Equipped with two (2) submersible pumps, each rated at 18 L/sec at 22 m TDH, 2 gate valves, 2 check valves, 1 flow meter, and connected to a 150 mm diameter sanitary forcemain on Angeline St S to MH1584 to MH 1512 then to gravity sewer.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms controlled by local PLC which communicates with Lindsay WPCP
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	One (1) 60 kW diesel generator set with 488L fuel tank
Notes	Not applicable

### Lindsay Sewage Pumping Station – Wellington St

Asset ID and Name	Lindsay Sewage Pumping Station – Wellington St
Site Location	0 Wellington St, Lindsay, City of Kawartha Lakes, ON
Latitude and Longitude	44.35785, -78.73705
Coordinates (optional)	Not available
Description	Sewage pumping station with wet well
Pumping Station Capacity	Not Available
Equipment	Equipped with two 2.4 Hp submersible pumps (1 duty and 1 standby), complete with 2 gate valves, 2 check valves, 1 level indicator and all necessary piping and electrical for operations.

	The SPS pumps into the forcemain on Wellington St, to the gravity sewer on Lindsay St N.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	Alarm level indicator sent to Lindsay WPCP
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Not applicable
Notes	Not applicable

### Lindsay Sewage Pumping Station – Rivera Park

Asset ID and Name	Lindsay Sewage Pumping Station – Rivera Park
Site Location	95 Lindsay St N., Lindsay, City of Kawartha Lakes, ON
Latitude and Longitude	44.36074, -78.73691
Coordinates (optional)	Not available
Description	Sewage pumping station with a 11 m x 1.65 m x 12 m deep wet well
Pumping Station Capacity	Firm rated pumping capacity is 637 l/s
Equipment	Concrete inlet manhole (2.4 m diameter, 11.5 m deep). Concrete wet well consisting of one (1) inlet/splitter chamber (11 m x 1.65 m x 12 m deep) and two (2) wet well pumping cells (5.2 m x 6.0 m x 14.5 m deep) with two (2) submersible pumps installed in each cell (3 duty & 1 standby) rated at a total pumping capacity of 701 L/s with associated process piping and valves. Control building (12 m x 12 m - single story) housing station control. The common discharge header splits the flow between two (2) forcemains through which sewage is pumped to the St. David Street sanitary trunksewer at Needham Street.
Emergency Storage	
Equipment: Associated controls and Appurtenances	System controls and indicator alarms controlled by local PLC which communicates with Lindsay WPCP
Sewage Pumping Station – Collection System Overflow	375 mm pipe overflows to Scugog River
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Odour control system located in Control building
Standby Power	One (1) 600 kW diesel generator set with 2,270 L fuel tank
Notes	Not applicable

**Lindsay Sewage Pumping Station – Jennings Creek**

Asset ID and Name	Lindsay Sewage Pumping Station - Jennings Creek
Site Location	Part 7, Lot 22, Concession 4, City of Kawartha Lakes, ON (3124 Hwy 35, Lindsay, City of Kawartha Lakes, ON)
Latitude and Longitude	44.35962, -78.76754
Coordinates (optional)	Not available
Description	Sewage pumping station with a 3.9 m x 3.9 m wet well
Pumping Station Capacity	Designed for a peak flow of 275 L/s
Equipment	Equipped with three (3) submersible pumps, two for duty and one for standby, each pump pair has a rated capacity of 275 L/s at a total dynamic head of 46 m, complete with electrical and electronic control systems, ultrasonic level transmitters with back-up float switches, all connected to the control panel, discharge piping, ventilation system, valves, 450mm by-pass piping to the forcemain, a standby generator set, and all other appurtenances. The SPS pumps directly to the WPCP through the 450mm Northwest Trunk Forcemain
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	Not applicable
Sewage Pumping Station – Collection System Overflow	525 mm overflow pipe to drainage ditch then flows in Jennings Creek
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	One (1) 400 kW diesel generator set with 935L fuel tank
Notes	Not applicable

**Lindsay Sewage Pumping Station – Mary St E**

Asset ID and Name	Lindsay Sewage Pumping Station - Mary Street E
Site Location	33 Mary Street East, Lindsay, City of Kawartha Lakes, ON
Latitude and Longitude	44.34773, -78.72764
Coordinates (optional)	Not available
Description	Sewage pumping station located at 33 Mary Street East
Pumping Station Capacity	Not Available
Equipment	Equipped with two (2) submersible pumps (one duty, one standby), one rated at 28 L/s and one at 30 L/s, complete with 2 gate valves, 2 check valves, level meter, level sensor, 2 flow meters (one attached to each pumps effluent line) and internal piping. SPS pumps wastewater to 6" forcemain on George St.
Emergency Storage	Not applicable

Equipment: Associated controls and Appurtenances	System controls and indicator alarms controlled by local PLC which communicates with Lindsay Water Treatment Plant.
Sewage Pumping Station – Collection System Overflow	250 mm pipe overflows to Scugog River
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	Provided by 650 kW diesel generator across the street at Lindsay Water Treatment Plant.
Notes	Not applicable

### Lindsay Sewage Pumping Station – Logie St

Asset ID and Name	Lindsay Sewage Pumping Station – Logie St
Site Location	Lot 18, Concession 6, City of Kawartha Lakes, ON (0 George St. West, Lindsay, City of Kawartha Lakes, ON)
Latitude and Longitude	44.35070, -78.72361
Coordinates (optional)	Not available
Description	Sewage pumping station with inground concrete wet well, approximately 30 m west from Logie Street. SPS discharges through 525mm forcemain to MH2639 then gravity fed to MH 2638 and 200mm forcemain.
Pumping Station Capacity	Not Available
Equipment	Equipped with two (2) submersible pumps each rated with capacity of 30 L/s at a TDH of 6.7 m (one duty and one standby), liquid level float control system with 2 check valves, 2 gate valves, lockable access hatchway, two (2) goosenecked vents with bird screens, and benching
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms controlled by local PLC which communicates with Lindsay WPCP
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	80 kW diesel generator on site with 417 L fuel tank
Notes	Not applicable

### Lindsay Sewage Pumping Station – Ridout St

Asset ID and Name	Lindsay Sewage Pumping Station – Ridout St
Site Location	74 Ridout St., Lindsay, City of Kawartha Lakes, ON
Latitude and Longitude	44.35719, -78.72730

Coordinates (optional)	Not available
Description	Sewage pumping station with wet well
Pumping Station Capacity	Not Available
Equipment	Station equipped with 3 submersible pumps (two duty, 1 standby) with a rated capacity of 180 L/s at 29 m TDH, complete with 3 check valves, 6 gate valves, 1 flow meter and all necessary piping and electrical for operations. SPS discharges through 500mm forcemain to the St David St forcemain.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms controlled by local PLC which communicates with Lindsay WPCP
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	One (1) 275 kW diesel generator set with 935L fuel tank
Notes	Not applicable

### Lindsay Sewage Pumping Station - Riverview

Asset ID and Name	Lindsay Sewage Pumping Station – Riverview
Site Location	0 Barron Blvd. Lindsay, City of Kawartha Lakes, ON
Latitude and Longitude	44.37782, -78.73905
Coordinates (optional)	N/A
Description	Sewage pumping station with wet well
Pumping Station Capacity	Not Available
Equipment	Two (2) submersible pumps (one duty, 1 standby) with a rated capacity of 8.4 L/s at 13.6 TDH, complete with 2 check valves, 2 gate valves, and all necessary piping and electrical for operations. SPS discharges to forcemain until MH 1076 then gravity fed to WPCP.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	Level indicator alarm sent to Lindsay WPCP
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	35 kW diesel generator on site with 448L fuel tank.
Notes	Not applicable

**Lindsay Sewage Pumping Station – Lindsay St N**

Asset ID and Name	Lindsay Sewage Pumping Station – Lindsay St N
Site Location	350 Lindsay St. N, Lindsay, City of Kawartha Lakes, ON
Latitude and Longitude	44.37582, -78.74449
Coordinates (optional)	Not available
Description	Sewage pumping station with wet well. Receives leachate from leachate collection system attached to Lindsay SPS 10 (Lindsay Street North – Leachate) from Lindsay Street North Landfill (closed).
Pumping Station Capacity	Not Available
Equipment	Equipped with three submersible pumps (2 duty and 1 standby) each rated for 345 L/s at 35 m TDH, complete with 3 check valves, 6 gate valves, and all necessary piping and electrical for operations. Discharges to existing forcemain with 400 mm forcemain. Connected through a 900 mm sanitary sewer connection from existing sewer on Lindsay Street.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarm relayed by communications system sent to Lindsay WPCP
Sewage Pumping Station – Collection System Overflow	600 mm overflow pipe to Scugog River
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	600 kW diesel generator on site with 2,270L fuel tank.
Notes	Not applicable

**Omemee Sewage Pumping Station 1**

Asset ID and Name	Omemee Sewage Pumping Station 1 – Church St
Site Location	Sturgeon Rd and Church St, Lot 7, Concession 3 and Part 2, Village of Omemee, City of Kawartha Lakes, ON
Latitude and Longitude	44.300280, -78.556219
Coordinates (optional)	Not available
Description	Precast concrete wet well sewage pumping station
Pumping Station Capacity	Rated capacity of 64 L/s with two pumps running
Equipment	Equipped with two (2) submersible pumps (with the provision of future third pump), each pump rated at 45 l/s at 12.2 m TDH, complete with a safety platform, ultrasonic liquid level indicator, float controls, plug valves, check valves and a 75 mm diameter combination vacuum/air release valve, dual 200 mm diameter stainless steel vent pipes with gooseneck and insect screen, a valved flowmeter by-pass chamber located within the wet well. Station is connected to approximately 160 m of 250 mm diameter forcemain along Church Street.

Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms controlled by local PLC which communicates with Sturgeon Road SPS.
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	a 50-kW diesel engine generator on-site
Notes	Not applicable

### Omemee Sewage Pumping Station 2

Asset ID and Name	Omemee Sewage Pumping Station 2 – Sturgeon Rd
Site Location	Sturgeon Rd and Church St, Lot 7, Concession 3 and Part 2 Village of Omemee, City of Kawartha Lakes, ON
Latitude and Longitude	44.297953, -78.559520
Coordinates (optional)	Not available
Description	Precast concrete wet well sewage pumping station
Pumping Station Capacity	Capacity of 122 L/s with two pumps in operation
Equipment	Equipped with two (2) submersible pumps (with the provision of future third pump), each pump rated at 88 L/s at 46 m TDH, complete with a safety platform, aluminum sulfate coagulation system, ultrasonic liquid level indicator, float controls, plug valves, check valves and a 75 mm diameter combination vacuum/air release valve, dual 200 mm diameter stainless steel vent pipes with gooseneck and insect screen and, a valved flowmeter by-pass chamber (located adjacent to the wet well). Station is connected to approximately 1955 m of 300 mm diameter forcemain along Sturgeon Road to the Omemee Sewage Lagoon.
Emergency Storage	Not applicable
Equipment: Associated controls and Appurtenances	System controls and indicator alarms controlled by local PLC.
Sewage Pumping Station – Collection System Overflow	Not applicable
Receiving Stations (if applicable)	Not applicable
Odour Control Units	Not applicable
Standby Power	350 kW diesel generator on site
Notes	Alum dosing system doses alum on sewage pump station effluent line through the use of 2 dosage pumps and chemical storage tank

**[Combined Sewage Pumping Stations]**

Asset ID and Name	N/A
Site Location	
Latitude and Longitude	
Coordinates (optional)	
Description	
Pumping Station Capacity	
Equipment	
Emergency Storage	
Equipment: Associated controls and Appurtenances	
Sewage Pumping Station – Collection System Overflow	
Receiving Stations (if applicable)	
Odor Control Units	
Standby Power	
Notes	

**Real-Time Control**

1.4 The following are identified Real-Time Control Systems in the Authorized System:

	Description
Process Equipment/System Elements	In-line instrumentation, process control systems and other analytical equipment
Flow Measurement Locations	<p>Bobcaygeon Sewage Collection System:</p> <p>No flow measuring devices in Bobcaygeon Sanitary Sewer Collection system.</p> <p>Coboconk Sewage Collection System:</p> <p>Magnetic flow meter located on influent line at Coboconk Sewage Pumping Station 3 – Hwy 35</p> <p>Fenelon Falls Sewage Collection System:</p> <p>Magnetic flow meter located at Fenelon Falls Sewage Pumping Station 1 - Ellice St wet well discharge line.</p> <p>Additional metering occurs at Fenelon Falls Water Pollution</p>

	<p>Control Plant.</p> <p>King's Bay Sewage Collection System:</p> <p>No flow measuring devices in the King's Bay Wastewater system. All flows in system recorded at King's Bay Environmental Centre.</p> <p>Lindsay Sewage Collection System:</p> <p>One (1) Magnetic flow meter located on discharge header at Lindsay Sewage Pumping Station – Fairgrounds</p> <p>One (1) Magnetic flow meter located on discharge header at Lindsay Sewage Pumping Station – Jennings Creek</p> <p>Two (2) Magnetic flow meters located on each pump discharge line at Lindsay Sewage Pumping Station – Mary St E</p> <p>One (1) Magnetic flow meter located on discharge header at Lindsay Sewage Pumping Station – Ridout</p> <p>One (1) Magnetic flow meter located on discharge header at Lindsay Sewage Pumping Station – Lindsay St N</p> <p>Additional metering occurs at Lindsay WPCP.</p> <p>Omemeew Sewage Collection System:</p> <p>One (1) flow meter located at the Omemeew Sewage Pumping Station 1 - Church St on wet well effluent line</p> <p>One (1) flow meter located at the Omemeew Sewage Pumping Station 2 - Sturgeon Rd on wet well effluent line</p> <p>Additional metering locations at Omemeew Sewage Lagoon.</p>
Level Measurement Locations	One (1) level meter device and one (1) level sensor device inserted at every pumping stations wet well listed in Section 1.3
Other Instrumentation and Controls	System controls, associated valves and communications systems relaying information to centralized hubs within each wastewater subsystem.

### Combined Sewage Structures

- 1.5 The following are regulators and combined Sewage storage structures in the Authorized System:

<b>Table B2: Identified Combined Sewer Overflow Regulators</b>			
Column 1 Asset ID/Name	Column 2 Site Location (Latitude & Longitude)	Column 3 Regulator Capacity (m <sup>3</sup> /s)	Column 4 Overflow Location (Latitude & Longitude)
N/A			

<b>Table B3: Identified Combined Sewage Storage Tanks and Storage Structures</b>			
Column 1 Asset ID/Name	Column 2 Site Location (Latitude & Longitude)	Column 3 Regulator Capacity (m <sup>3</sup> /s)	Column 4 Overflow Location (Latitude & Longitude)
N/A			

### Collection System Overflow Points

1.6 The following are Collection System Overflow points in the Authorized System:

<b>Table B4: Identified Combined Sewer Overflow Points including Pumping Stations</b>			
Column 1 Asset ID / Name	Column 2 Regulator or Combined Sewer Storage Asset ID	Column 3 Overflow Location (Latitude & Longitude)	Column 4 Point of Entry to Receiver (Latitude and Longitude)
N/A			

<b>Table B5: Identified Sanitary Sewer Overflow Points including Pumping Stations</b>			
Column 1 Asset ID	Column 2 Asset Name	Column 3 Overflow Location (Latitude & Longitude)	Column 4 Point of Entry to Receiver (Latitude and Longitude)
N/A	Bobcaygeon Sewage Pumping Station 4 – Main St Overflow	44.53980, 78.54665	Big Bob River 44.53980, 78.54665
N/A	Fenelon Falls Sewage Pumping Station 2 – Colborne St Overflow	44.535925, - 78.736196	Fenelon River 44.535925, -78.736196
N/A	Fenelon Falls Sewage Pumping Station 3- Francis St Overflow	44.32929, - 78.73751	Fenelon River 44.531035 – 78.727748
N/A	Lindsay Sewage Pumping Station - Rivera Park Overflow	X44.36115, - 78.73782	Scugog River N/A
	Lindsay Sewage Pumping Station - Jennings Creek Overflow	44.35965, - 78.76738	Jennings Creek 44.35965, -78.76738
N/A	Lindsay Sewage Pumping Station - Mary St E Overflow	44.34772, - 78.72684	Scugog River N/A
N/A	Lindsay Sewage Pumping Station – Lindsay St N Overflow	44.37584, - 78.74448	Scugog River 44.37584, -78.74448

**Other Works:**

1.7 The following works are part of Authorized System:

<b>Table B6: Other Works</b>			
Column 1 Asset ID / Name	Column 2 Site Location (Latitude & Longitude)	Column 3 Component	Column 4 Description
N/A			

**Schedule C: List of Notices of Amendment to this ECA:  
Additional Approved Sewage Works**

System Owner	<b>Kawartha Lakes, The Corporation of the City of</b>
ECA Number	<b>141-W601</b>
System Name	<b>City of Kawartha Lakes Wastewater System</b>
ECA Issue Date	<b>October 12th, 2022</b>

**1.0 General**

1.1 Table C1 provides a list of all notices of amendment to this Approval that have been issued pursuant to clause 20.3(1) of the EPA that impose terms and conditions in respect of the Authorized System after consideration of an application by the Director (Schedule C Notices).

<b>Table C1: Schedule C Notices</b>				
<b>Column 1 Issue #</b>	<b>Column 2 Issue Date</b>	<b>Column 3 Description</b>	<b>Column 4 Status</b>	<b>Column 5 DN#</b>
N/A	N/A	N/A	N/A	N/A

## Schedule D: General

System Owner	<b>Kawartha Lakes, The Corporation of the City of</b>
ECA Number	<b>141-W601</b>
System Name	<b>City of Kawartha Lakes Wastewater System</b>
ECA Issue Date	<b>October 12th, 2022</b>

### 1.0 Definitions

1.1 For the purpose of this Approval, the following definitions apply:

**“Adverse Effect(s)”** has the same meaning as defined in section 1 of the EPA.

**“Alteration(s)”** includes the following, in respect of the Authorized System, but does not include repairs to the system:

- a) An extension of the system,
- b) A replacement or retirement of part of the system, or
- c) A modification of, addition to, or enlargement of the system.

**“Approval”** means this Environmental Compliance Approval including any Schedules attached to it.

**“Appurtenance(s)”** has the same meaning as defined in O. Reg. 525/98 (Approval Exemptions) made under the OWRA.

**“Authorized System”** means the Sewage Works comprising the Municipal Sewage Collection System authorized under this Approval”.

**“Average Year”** means the long term average of flow based on:

- a) Simulation of at least twenty years of rainfall data;
- b) A year in which the rainfall pattern (e.g., intensity, volume, and frequency) is consistent with the long-term mean of the area;
- c) A year in which the runoff pattern resulting from the rainfall (e.g., rate, volume, and frequency) is consistent with the long-term mean of the area; or
- d) Any combination of a), b) and c).

**“Collection System Overflow(s)”** means a discharge (SSO or CSO) to the environment at designed location(s) from the Authorized System.

**“Combined Sewer(s)”** means pipes that collect and transmit both sanitary Sewage and other Sewage from residential, commercial, institutional and industrial buildings, and facilities and Stormwater through a single-pipe system, but does not include Nominally Separate Sewers.

**“Completion”** means substantial performance as described in s.2 (1) of the *Construction Act*, R.S.O. 1990, c. C.30.

**“Compound of Concern”** means a Contaminant that is discharged from the Facility in an amount that is not negligible.

**“Contaminant”** has the same meaning as defined in section 1 of the EPA.

**“CSO”** means a combined sewer overflow which is a discharge to the environment at designated location(s) from a Combined Sewer or Partially Separated Sewer as per Table B4 that usually occurs as a result of precipitation when the capacity of the Sewer is exceeded. An intervening time of twelve hours or greater separating a CSO from the last prior CSO at the same location is considered to separate one overflow Event from another.

**“CWA”** means the *Clean Water Act*, R.S.O. 2006, c.22.

**“Design Criteria”** means the design criteria set out in the Ministry’s publication “Design Criteria for Sanitary Sewers, Storm Sewers and Forcemains for Alterations Authorized under Environmental Compliance Approval”, (as amended from time to time).

**“Design Guidelines for Sewage Works”** means the Ministry document titled “Design Guidelines for Sewage Works”, 2008 (as amended from time to time).

**“Director”** means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of EPA (Environmental Compliance Approvals).

**“Director Notification Form”** means the most recent version of the Ministry form titled Director Notification – Alterations to a Municipal Sewage Collection System, as obtained directly from the Ministry or from the Ministry’s website.

**“District Manager”** means the district manager or a designated representative of the Local Ministry Office.

**“Dry Weather Flow(s)”** means Sewage flow resulting from both sanitary Sewage, and infiltration and inflows from foundation drains or other drains occurring during periods with an absence of rainfall or snowmelt.

**"EAA"** means the *Environmental Assessment Act*, R.S.O. 1990, c. E.18.

**"EPA"** means the *Environmental Protection Act*, R.S.O. 1990, c.E.19.

**"Emergency Situation"** means a structural, mechanical, electrical failure, or operational health and safety incident, that causes a temporary reduction in the capacity, function, or performance of any part of the Authorized System or an unforeseen flow condition that may result in:

- a) Danger to the health or safety of any person;
- b) Injury or damage to any property, or serious risk of injury or damage to any property;
- c) Adverse Effect to the Natural Environment; or
- d) Spill.

**“Equipment”** means equipment or processes described in this Approval and any other equipment or process that supports the operation or maintenance of the Authorized System.

**“ESC”** means erosion and sediment control.

**"Event(s)"** means an action or occurrence, at any given location within the Authorized System that causes a Collection System Overflow. An Event ends when there is no recurrence of a CSO or SSO in the collection system at the same location in the 12-hour period following the last Collection System Overflow.

**“Facility”** means the entire operation located on the property where the Sewage Works or Equipment is located.

**“Form A1”** means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Equipment Discharging a Contaminant of Concern to the Atmosphere from a Municipal Sewage Collection System, as obtained directly from the Ministry or from the Ministry’s website.

**“Form CS1”** means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Combined Sewers/Partially Separated Sewers/Combined Sewage Storage Tanks and Storage Structures as obtained directly from the Ministry or from the Ministry’s website.

“**Form SS1**” means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Separate Sewers/Nominally Separate Sewers/Forcemains, as obtained directly from the Ministry or from the Ministry’s website.

“**Form SS2**” means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Components of the Municipal Sewage Collection System, as obtained directly from the Ministry or from the Ministry’s website.

“**Hauled Sewage**” has the same meaning as defined in section 1 of Regulation 347 (General – Waste Management) made under the EPA.

“**Licensed Engineering Practitioner**” means a person who holds a licence, limited licence, or temporary licence under the *Ontario Professional Engineers Act* R.S.O. 1990, c. P.28.

“**Local Ministry Office**” means the local office of the Ministry responsible for the geographic area where the Authorized System is located.

“**Minister**” means the Minister of the Ministry, or such other member of the Executive Council as may be assigned the administration of the EPA and OWRA under the *Executive Council Act*, R.S.O. 1990, c. E.25.

“**Ministry**” means the Ministry of the Minister and includes all employees or other persons acting on its behalf.

“**Municipal Sewage Collection System**” means all Sewage Works, located in the geographical area of a municipality that collect and transmit Sewage and are owned, or may be owned pursuant to an agreement with a municipality entered into under the *Planning Act* or *Development Charges Act*, 1997, by:

- a) A municipality, a municipal service board established under the *Municipal Act*, 2001 or a city board established under the *City of Toronto Act*, 2006; or
- b) A corporation established under sections 9, 10, and 11 of the *Municipal Act*, 2001 in accordance with section 203 of that Act or under sections 7 and 8 of the *City of Toronto Act*, 2006 in accordance with sections 148 and 154 of that Act.

“**Natural Environment**” has the same meaning as defined in section 1 of the EPA.

“**Nominally Separate Sewer(s)**” mean Separate Sewers that also have connections from roof leaders and foundation drains, and are not considered to be Combined Sewers.

**“Operating Authority”** means, in respect of the Authorized System, the person, entity, or assignee that is given responsibility by the Owner for the operation, management, maintenance or Alteration of the Authorized System or a portion of the Authorized System.

**"Owner"** for the purposes of this Approval means the [Municipality XYZ or Municipal Services Board XYZ], and includes its successors and assigns.

**"OWRA"** means the *Ontario Water Resources Act*, R.S.O. 1990, c. O.40.

**“O&M Manual”** means the operation and maintenance manual prepared and maintained by the Owner under condition 3.2 in Schedule E of this Approval.

**"Partially Separated Sewer(s)"** means Combined Sewers that have been retrofitted to transmit sanitary Sewage but in which roof leaders or foundation drains still contribute Stormwater inflow to the Partially Separated Sewer.

**“Peak Hourly Flow”** means the largest volume of flow to be received during a one-hour period expressed as a volume per unit time. This is also referred to as maximum hourly flow or maximum hour flow.

**“Point of Entry”** has same meaning as in the Wastewater Systems Effluent Regulations (SOR/2012-139) under the *Fisheries Act*, R.S.C 1985, c. F-14.

**“Pollution Prevention and Control Plan” or “PPCP”** means a plan developed for Combined Sewers in the Authorized System to meet the goals of Procedure F-5-5.

**"Prescribed Person"** means a person prescribed in O. Reg. 208/19 (Environmental Compliance Approval in Respect of Sewage Works) for the purpose of ss. 20.6 (1) of the EPA, and where the alteration, extension, enlargement, or replacement is carried out under an agreement with the Owner.

**"Procedure F-5-1"** means the Ministry document titled “F-5-1 Determination of Treatment Requirements for Municipal and Private Sewage Treatment Works” (as amended from time to time).

**"Procedure F-5-5"** means the Ministry document titled “F-5-5 Determination of Treatment Requirements for Municipal and Private Combined and Partially Separated Sewer System” (as amended from time to time).

**"Publication NPC-207"** means the Ministry draft technical publication "Impulse Vibration in Residential Buildings", November 1983,

supplementing the Model Municipal Noise Control By-Law, Final Report, August 1978, (as amended from time to time).

“**Publication NPC-300**” means the Ministry publication NPC-300, “Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning” August 2013, (as amended from time to time).

“**Pumping Station Capacity**” means the design Peak Hourly Flow of Sewage which the Sewage pumping station is designed to handle.

“**Real-time Control System**” means the dynamic operation of the collection system, including Real-Time Physical Control Structures, by responding to continuous field monitoring to maintain and achieve performance and operational objectives, during dry and wet weather conditions.

“**Real-time Physical Control Structure**” means a structure (e.g., pumps, gates, and weirs) that reacts in real-time based on direction from the Real-Time Control System.

“**Regulator Capacity**” means the flowrate ( $m^3/s$ ) at which Collection System Overflow begins.

“**SAC**” means the Ministry’s Spills Action Centre.

“**SCADA**” means a supervisory control and data acquisition system used for process monitoring, control, automation, recording, and/or reporting within the Sewage system.

“**Schedule C Notice(s)**” means a notice(s) of amendment to this Approval issued pursuant to clause 20.3(1) of the EPA that imposes terms and conditions in respect of the Authorized System after consideration of an application by the Director.

“**Separate Sewer(s)**” means pipes that collect and transmit sanitary Sewage and other Sewage from residential, commercial, institutional, and industrial buildings.

“**Sewage**” has the same meaning as defined in section 1 of the OWRA.

“**Sewage Works**” has the same meaning as defined in section 1 of the OWRA.

“**Sewer**” has the same meaning as defined in section 1 of O. Reg. 525/98 under the OWRA.

“**Significant Drinking Water Threat**” has the same meaning as defined in section 2 of the CWA.

**“Significant Snowmelt Event(s)”** means the melting of snow at a rate which adversely affects the performance and function of the Authorized System and/or the STP(s) identified in Schedule A of this Approval.

**“Significant Storm Event(s)”** means a minimum of 25 mm of rain in any 24 hours period.

**“Source Protection Authority”** has the same meaning as defined in section 2 of the CWA.

**“Source Protection Plan”** means a drinking water source protection plan prepared under the CWA.

**“Spill(s)”** has the same meaning as defined in subsection 91(1) of the EPA.

**“SSO”** means a sanitary sewer overflow which is a discharge of Sewage from a Separate Sewer or Nominally Separate Sewer to the environment from designated location(s) in the Authorized System as per Table B5.

**“Standard Operating Policy for Sewage Works”** means the standard operating policy developed by the Ministry to assist in the implementation of Source Protection Plan policies related to Sewage Works and providing minimum design and operational standards and considerations to mitigate risks to sources of drinking water, as amended from time to time.

**“Storm Sewer”** means Sewers that collect and transmit, but not exfiltrate or lose by design, Stormwater resulting from precipitation and snowmelt.

**“Stormwater”** means rainwater runoff, water runoff from roofs, snowmelt, and surface runoff.

**“Stormwater Management Facility(ies)”** means a Facility for the treatment, retention, infiltration, or control of Stormwater.

**“STP”** means sewage treatment plant.

**“STP Bypass(es)”** means diversion of Sewage around one or more treatment processes, excluding preliminary treatment system, within the STP with the diverted Sewage flows being returned to the STP treatment train upstream of the final effluent sampling point(s) and discharged via the approved effluent disposal facilities.

**“STP Overflow(s)”** means a discharge to the environment from the STP at designed location(s) other than the approved effluent disposal facilities or via the effluent disposal facilities downstream of the final effluent sampling point.

**“Uncommitted Reserve Hydraulic Capacity”** means uncommitted reserve capacity as described in the Ministry document titled “D-5-1 Calculating and Reporting Uncommitted Reserve Capacity at Sewage and Water Treatment Plants” (as amended from time to time).

**“Undertaking”** has the same meaning as in the EAA.

**“Vulnerable Area(s)”** has the same meaning as in the CWA.

**“Wet Weather Flow(s)”** means the flow resulting from the combination of sanitary Sewage and extraneous flows resulting from the inflow and infiltration of groundwater, rainfall or snowmelt, and snow or ice melt that enters the Authorized System.

## 2.0 General Conditions

- 2.1 The works comprising the Authorized System shall be constructed, installed, used, operated, maintained, replaced, or retired in accordance with the conditions of this Approval, which includes the following Schedules:

Schedule A – System Information

Schedule B – Municipal Sewage Collection System Description

Schedule C – List of Notices of Amendment to this ECA

Schedule D – General

Schedule E – Operating Conditions

Schedule F – Residue Management

- 2.2 The issuance of this Approval does not negate the requirements of other regulatory bodies, which includes but is not limited to, the Ministry of Northern Development, Mines, Natural Resources and Forestry and the local Conservation Authority.
- 2.3 Where there is a conflict between a provision of any document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence. Where there is a conflict between the information in a Schedule C Notice and another section of this Approval, the document bearing the most recent date shall prevail.
- 2.4 The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Authorized System is provided with a print or electronic copy of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
- 2.5 The conditions of this Approval are severable. If any condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such

condition to other circumstances and the remainder of this Approval shall not be affected thereby.

### **3.0 Alterations to the Municipal Sewage Collection System**

- 3.1 Any Schedule C Notice shall provide authority to alter the Authorized System in accordance with the conditions of this Approval.
- 3.2 All Schedule C Notices issued by the Director for the Municipal Sewage Collection System shall form part of this Approval.
- 3.3 The Owner and a Prescribed Person shall ensure that the documentation required through conditions in this Approval and the documentation required in the Design Criteria are prepared for any Alteration of the Authorized System.
- 3.4 The Owner shall notify the Director within thirty (30) calendar days of the placing into service or Completion of any Alteration of the Authorized System which had been authorized:
  - 3.4.1 Under Schedule D to this Approval where the Alteration results in a change to Sewage Works or Equipment specifically described in Schedule B of this Approval;
  - 3.4.2 Through a Schedule C Notice respecting Sewage Works other than Sewers or forcemains; or
  - 3.4.3 Through another approval that was issued under the EPA prior to the issue date of this Approval.
- 3.5 The notification requirements set out in condition 3.4 do not apply to any Alteration in respect of the Authorized System which:
  - 3.5.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98;
  - 3.5.2 Constitutes maintenance or repair of the Authorized System; or
  - 3.5.3 Is a Sewer or forcemain authorized by condition 4.1 of Schedule D of this Approval.
- 3.6 The Owner shall notify the Director within ninety (90) calendar days of:
  - 3.6.1 The discovery of existing Sewage Works not described or depicted in Schedule B, or
  - 3.6.2 Additional or revised information becoming available for any Sewage Works or Equipment described in Schedule B of this Approval.

- 3.7 The notifications required in condition 3.4 and 3.6 shall be submitted to the Director using the Director Notification Form.
- 3.8 The Owner shall ensure that an ESC plan is prepared, and temporary ESC measures are installed in advance of and maintained during any construction activity on the Authorized System, subject to the following conditions:
- 3.8.1 Inspections of ESC measures are to be conducted at a frequency specified per the ESC plan, for dry weather periods (active and inactive construction phases), after Significant Storm Events and Significant Snowmelt Events, and after any extreme weather events.
- 3.8.2 Any deficiencies shall be addressed, and any required maintenance actions(s) shall be undertaken as soon as practicable once they have been identified.
- 3.8.3 Inspections and maintenance of the temporary ESC measures shall continue until they are no longer required.
- 3.8.4 The ESC plan, ESC measures and its installation, inspections and maintenance shall have regard to at least one of the following:
- a) CSA W202 Erosion and Sediment Control Inspection and Monitoring Standard, as amended from time to time;
  - b) Erosion and Sediment Control Guideline for Urban Construction (2019), as amended from time to time, prepared by the Toronto Region Conservation Authority; or
  - c) CSA W208 Erosion and Sediment Control Installation and Maintenance, as amended from time to time.
- 3.9 The Owner shall ensure that records of inspections required by this Approval during any construction activity, including those required under condition 3.8:
- 3.9.1 Include the name of the inspector, date of inspection, visual observations, and the remedial measures, if any, undertaken to maintain the temporary ESC measures.
- 3.9.2 Be retained with records relating to the Alteration that the construction relates to, such as the form required in conditions 4.3.1, 5.4.1, 6.9.1, or 7.6.1 of Schedule D, or the Schedule C Notice.

- 3.9.3 Be retrievable and made available to the Ministry upon request.
- 3.10 The document(s) or file(s) referenced in Table B1 of Schedule B of this Approval shall:
- 3.10.1 Be retained by the Owner;
- 3.10.2 Include at a minimum:
- a) Identification of the type of Sewers in the Municipal Sewage Collection System (e.g., Separate Sewer; Combined Sewer; Partially Separated Sewer; Nominally Separate Sewer) including:
    - i Location of Sewers relative to street names or easements;
    - ii Sewer and/or forcemain diameters;
    - iii Identification of pumping stations and storage structures, including asset IDs;
    - iv Identification of SSO and/or CSO locations, including asset IDs;
    - v Identification of small-bore systems, if any; and
    - vi Identification of any source protection Vulnerable Areas.
- 3.10.3 Be updated to include:
- a) Alterations authorized under Schedule D of this Approval or through a Schedule C Notice within twelve (12) months of the Alteration being placed into service.
  - b) Updates to information contained in the document(s) or files(s) not associated with an Alteration within twelve (12) months of becoming aware of the updated information.
- 3.11 An Alteration is not authorized under Schedule D of this ECA for projects that impact Indigenous treaty rights or asserted rights where:
- 3.11.1 The project is on Crown land or would alter access to Crown land;
- 3.11.2 The project is in an open or forested area where hunting, trapping or plant gathering occur;

- 3.11.3 The project involves the clearing of forested land unless the clearing has been authorized by relevant municipal, provincial, or federal authorities, where applicable;
  - 3.11.4 The project alters access to a water body;
  - 3.11.5 The proponent is aware of any concerns from Indigenous communities about the proposed project and these concerns have not been resolved; or
  - 3.11.6 Conditions respecting Indigenous consultation in relation to the project were placed in another permit or approval and have not been met.
- 3.12 No less than 60 days prior to construction associated with an Alteration the Director may notify the Owner in writing that a project is not authorized through Schedule D of this ECA where:
- 3.12.1 Concerns regarding treaty rights or asserted rights have been raised by one or more Indigenous communities that may be impacted by the Alteration; or
  - 3.12.2 The Director believes that it is in the public interest due to site specific, system specific, or project specific considerations.
- 3.13 Where an Alteration is not authorized under condition 3.11 or 3.12 above:
- 3.13.1 An application respecting the Alteration shall be submitted to the Ministry; and,
  - 3.13.2 The Alteration shall not proceed unless:
    - a) Approval for the Alteration is granted by the Ministry (i.e., a Schedule C Notice); or,
    - b) The Director provides written notice that the Alteration may proceed in accordance with conditions in Schedule D of this ECA.

#### **4.0 Authorizations of Future Alterations for Separate Sewers, Nominally Separate Sewers and Forcemains - Additions, Modifications, Replacements and Extensions**

- 4.1 The Owner or a Prescribed Person may alter the Authorized System by adding, modifying, replacing, or extending a Separate Sewer, Nominally Separate Sewer or forcemain within the Authorized System subject to the following conditions and condition 4.2 below:

- 4.1.1 The design of the addition, modification, replacement, or extension:
- a) Has been prepared by a Licensed Engineering Practitioner;
  - b) Has been designed only to collect and transmit Sewage and has not been designed to treat Sewage;
  - c) Satisfies the Design Criteria or any municipal criteria that have been established that exceed the minimum requirements set out in the Design Criteria;
  - d) Is consistent with or otherwise addresses the design objectives contained within the Design Guidelines for Sewage Works; and
  - e) Includes design considerations to protect sources of drinking water, including those set out in the Standard Operating Policy for Sewage Works, and any applicable local Source Protection Plan policies.
- 4.1.2 The addition, modification, replacement, or extension shall be designed so that it will:
- a) Not cause overflows or backups nor increase surcharging at any maintenance holes or privately owned infrastructure (e.g., service connections to basements) connected to the Authorized System or any Municipal Sewage Collection System connected to it;
  - b) Provide smooth flow transition to existing gravity Sewers; and
  - c) Not increase the generation of sulfides and other odorous compounds in the Municipal Sewage Collection System.
- 4.1.3 The maximum discharge/generation of Sewage by users who will be served by the addition, modification, replacement, or extension will not result in:
- a) An exceedance of the Authorized System hydraulic capacity, STP Uncommitted Reserve Hydraulic Capacity, or the downstream Pumping Station Capacity as specified in this Approval;
  - b) Adverse Effects;
  - c) Any increase in Collection System Overflows that is not offset by measures; or

- d) Any increase in the frequency or volume of STP Bypasses or STP Overflows that is not offset by measures.
- 4.1.4 The addition, modification, replacement, or extension is wholly located within the municipal boundary over which the Owner has jurisdiction or there is a written agreement in place with the adjacent municipality respecting the Alteration and resulting Sewage Works.
- 4.1.5 The Owner consents in writing to the addition, modification, replacement, or extension.
- 4.1.6 A Licensed Engineering Practitioner has verified in writing that the addition, modification, replacement, or extension meets the requirements of conditions 4.1.1 a) to d).
- 4.1.7 The Owner has verified in writing that the addition, modification, replacement, or extension has complied with inspection and testing requirements in the Design Criteria.
- 4.1.8 The Owner has verified in writing that the addition, modification, replacement, or extension meets the requirements of conditions 4.1.1 e) and 4.1.2 to 4.1.6.
- 4.2 The Owner or a Prescribed Person is not authorized to undertake an Alteration described above in condition 4.1 where the Alteration relates to the addition, modification, replacement or extension of a Separate Sewer, Nominally Separate Sewer, or forcemain that:
  - 4.2.1 Passes under or through a body of surface water unless trenchless construction methods are used, or the local Conservation Authority has authorized an alternative construction method.
  - 4.2.2 Has a nominal diameter greater than 750 mm for a Separate Sewer or Nominally Separate Sewer.
  - 4.2.3 Has a nominal diameter greater than 350 mm for a forcemain.
  - 4.2.4 Is a Combined Sewer or Partially Separated Sewer.
  - 4.2.5 Connects to another Municipal Sewage Collection System, unless:
    - a) Prior to construction, the Owner of the Authorized System obtains written consent from the Owner or Owner's delegate of the Municipal Sewage Collection System being connected to; and
    - b) The Owner of the Authorized System retains a copy of the written consent from the Owner or Owner's delegate of the

Municipal Sewage Collection System being connected to as part of the record that is recorded and retained under condition 4.3.

- 4.2.6 Creates a new discharge point to the Natural Environment.
- 4.2.7 Is part of an Undertaking in respect of which:
  - a) A request under s.16(6) of the EAA has been made, namely a request that the Minister make an order under s.16;
  - b) The Minister has made an order under s.16; or
  - c) The Director under that EAA has given notice under s.16.1 (2) that the Minister is considering making an order under s.16.
- 4.3 The consents and verifications required in conditions 4.1 and 4.2, if applicable, shall be:
  - 4.3.1 Recorded on Form SS1 prior to the Separate Sewer, Nominally Separate Sewer or forcemain addition, modification, replacement, or extension being placed into service; and
  - 4.3.2 Retained for a period of at least ten (10) years by the Owner.
- 4.4 For greater certainty, the verification requirements set out in condition 4.3 do not apply to any Alteration in respect of the Authorized System which:
  - 4.4.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98; or
  - 4.4.2 Constitutes maintenance or repair of the Authorized System.

## **5.0 Authorizations of Future Alterations for Combined Sewers, Partially Separated Sewers and Combined Sewage Storage Tanks and Storage Structures**

- 5.1 Subject to conditions 5.2 and 5.3, the Owner or a Prescribed Person may alter the Combined Sewers, Partially Separated Sewers and combined Sewage storage tanks and storage structures in the Authorized System by:
  - 5.1.1 Modifying or replacing Combined Sewers, Partially Separated Sewers, overflow Regulators and/or outfalls if the purpose of the project is to restore the Sewage Works to good condition.
  - 5.1.2 Replacing Combined Sewers with Separate Sewers for Stormwater and sanitary Sewage.

- 5.1.3 Modifying or replacing Combined Sewers, Partially Separated Sewers, overflow regulators, outfalls, or combined Sewage storage tanks, provided that:
- a) The Alteration is designed in such a manner that will contribute to the ultimate attainment of the capture and treatment for an Average Year of all the Dry Weather Flow plus a minimum of 90% of the volume resulting from Wet Weather Flow that is above Dry Weather Flow;
  - b) The volume control criterion described in 5.1.3 a) is applied:
    - i For a consecutive seven (7) month period commencing within fifteen (15) calendar days of April 1; and
    - ii To the flows collected by the Authorized System immediately above each Collection System Overflow location unless it can be shown through modelling that the criterion is being achieved on a system-wide basis.
  - c) The Alteration is designed in a manner that will not increase CSO volumes above existing levels at each outfall except where the increase is due to the elimination of upstream CSO outfalls as part of the Alteration; and
  - d) During the remainder of the year following the seven (7) month period described in condition 5.1.3 b) above, at least the same storage and treatment capacity are maintained for treating Wet Weather Flow.
- 5.1.4 Adding oversized pipes provided they are designed to alleviate local / neighbourhood basement flooding and the Alteration satisfies condition 5.1.3 a), b), c), and d).
- 5.2 Any Alteration to the Authorized System authorized under condition 5.1 is subject to the following conditions:
- 5.2.1 The design of the Alteration shall:
- a) Be prepared by a Licensed Engineering Practitioner;
  - b) Be designed only to collect and transmit Sewage and shall not be designed to treat Sewage;
  - c) Satisfy the Design Criteria or any municipal criteria that have been established that exceed the minimum requirements set out in the Design Criteria;

- d) Be consistent with or otherwise address the design objectives contained within the Design Guidelines for Sewage Works; and
- e) Include design considerations to protect sources of drinking water, including those set out in the Standard Operating Policy for Sewage Works and any applicable local Source Protection Plan policies.

5.2.2 The design of the Alteration shall be:

- a) Undertaken in accordance with a Pollution Prevention and Control Plan; or
- b) If no Pollution Prevention and Control Plan is available, undertaken in accordance with an interim detailed plan for the local sewershed that:
  - i Describes the location, frequency, and volume of the CSOs, as well as the concentrations and mass pollutant loadings resulting from CSOs from the study area.
  - ii Includes the following minimum information:
    1. Location and physical description of CSO outfalls in the Authorized System, Collection System Overflows at pumping stations in Emergency Situations, STP Bypass and STP overflows locations;
    2. Location and identification of receiving water bodies, including sensitive receivers, for all Combined Sewer outfalls;
    3. Authorized System flow and STP treatment component capacities, present and future expected peak flow rates during dry weather and wet weather;
    4. Capacity of all regulators; and
    5. Location of cross connections between Sewage and Stormwater infrastructure.
  - iii Is intended to reduce the overall CSO volume, frequency, duration, or by-pass of treatment in the Authorized and/or municipal STP; and

- iv If there is a temporary Storm Sewer connection to a combined system as part of a Combined Sewer separation project, the construction plan includes a timeline to disconnect the Storm Sewer to a separated storm outlet.

5.2.3 The Alteration shall not result in:

- a) An exceedance of hydraulic capacity of the Authorized System, STP Uncommitted Reserve Hydraulic Capacity, or the Pumping Station Capacity as specified in this Approval;
- b) Adverse Effects;
- c) Any increase in Collection System Overflows that is not offset by measures elsewhere in the Authorized System; or
- d) Any increase in the frequency and/or volume of STP Bypasses or STP Overflows that is not offset by measures.

5.2.4 Where replacement of pipes to achieve Combined Sewer separation has been authorized under conditions 5.1.2 or 5.1.3, the following conditions apply:

- a) Stormwater quantity, quality and water balance control shall be provided such that Combined Sewer separation shall not result in an overall increase in pollutants discharged to the Natural Environment;
- b) Any new Storm Sewers that result from the Combined Sewer separation can be constructed but not operated until the proposed Stormwater Management Facilities designed to satisfy condition 5.2.4 a) are in operation; and
- c) Where any temporary structures have been installed to facilitate Combined Sewer separation, the Owner shall ensure that immediately upon Completion of the Combined Sewer separation, the temporary structure connection shall be disconnected and decommissioned.

5.2.5 The Alteration shall:

- a) Not cause overflows or backups nor increase surcharging at any maintenance holes or privately owned infrastructure (e.g., service connections to basements) connected to the Authorized System or any Municipal Sewage Collection System connected to it;

- b) Provide smooth flow transition to existing gravity sewers; and
  - c) Not increase the generation of sulfides and other odorous compounds in the Authorized System.
- 5.2.6 The Alteration is wholly located within the municipal boundary over which the Owner has jurisdiction or there is a written agreement in place with the adjacent municipality respecting the Alteration and resulting Sewage Works.
- 5.2.7 The Owner consents in writing to the Alteration authorized under condition 5.1.
- 5.2.8 A Licensed Engineering Practitioner has verified in writing that the Alteration authorized under condition 5.1 meets the design requirements of conditions 5.2.1 a) to d) and to 5.2.2.
- 5.2.9 The Owner has verified in writing that the Alteration authorized under condition 5.1 has complied with inspection and testing requirements in the Design Criteria.
- 5.2.10 The Owner has verified in writing that the Alteration authorized under condition 5.1 meets the requirements of conditions 5.2.1 e) and 5.2.3 to 5.2.8.
- 5.3 The authorization in condition 5.1 does not apply:
- 5.3.1 To the modification or replacement of a Combined Sewer or Partially Separated Sewer that has a nominal diameter greater than 750 mm.
  - 5.3.2 To the modification or replacement of a Combined Sewer or Partially Separated Sewer that connects to another Municipal Sewage Collection System, unless:
    - a) Prior to construction, the Owner of the Authorized System seeking the connection obtains written consent from the Owner or Owner's delegate of the Municipal Sewage Collection System being connected to; and
    - b) The Owner of the Authorized System retains a copy of the written consent from the Owner or Owner's delegate of the Municipal Sewage Collection System being connected to as part of the record that is recorded and retained under condition 5.4.
  - 5.3.3 Where the Alteration would create a new discharge point to the Natural Environment.

- 5.3.4 Where the Alteration would result in the addition of a new combined Sewage storage tank in the Authorized System.
- 5.4 The consents and verifications required in conditions 5.2.7 to 5.2.10, and 5.3.2 if applicable, shall be:
- 5.4.1 Recorded on Form CS1, prior to the Combined Sewer or Partially Separated Sewer modification or replacement being placed into service; and
- 5.4.2 Retained for a period of at least ten (10) years by the Owner.
- 5.5 For greater certainty, the verification requirements set out in condition 5.4 do not apply to any Alteration in respect of the Authorized System which:
- 5.5.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98; or,
- 5.5.2 Constitutes maintenance or repair of the Authorized System.

## **6.0 Authorizations of Future Alterations to Components of the Municipal Sewage Collection System**

- 6.1 The Owner or a Prescribed Person may make the following Alterations to the Authorized System subject to conditions 6.4 through 6.7:
- 6.1.1 Adding, modifying, or replacing the following components of Sewage pumping stations, Separate Sewers, or Nominally Separate Sewers:
- a) In-line and/or off-line storage to manage peak flow / inflow and infiltration that does not require pumping;
  - b) Off-line storage to manage peak flow / inflow and infiltration that only requires electricity to empty the structure;
  - c) Any associated Equipment for cleaning; and
  - d) All Appurtenances associated with in-line or off-line storage facilities, including odour, and corrosion control.
- 6.1.2 Modifying existing Sewage pumping stations and odour control units / Facilities, including adding, replacing, or modifying the following components:
- a) Pumps, including replacement parts, in an existing pumping system;
  - b) Grinders and screens;

- c) Aeration and/or mixing Equipment;
- d) Chemicals and associated Equipment and tanks (including secondary containment);
- e) Odour and corrosion control structures;
- f) Instrumentation and controls;
- g) Discharge and process piping;
- h) Valves;
- i) Wet-wells; and
- j) Fat, oil, and grease separators (FOGs).

6.1.3 Adding new Sewage pumping stations, where they:

- a) Are designed to transmit a Peak Hourly Flow of no greater than 30 L/s;
- b) Include emergency stand-by power, Spill containment, and emergency alarms (SCADA, if applicable);
- c) Include emergency storage designed to provide at minimum two (2) hours of response time at peak design flow;
- d) Include odour and corrosion control, as applicable;
- e) Would serve a new residential development (or new phased residential development), which may include existing residential development that has no Combined or Partially Separated Sewers;
- f) Are designed to only collect sanitary Sewage and not Stormwater; and
- g) Do not include an emergency sanitary overflow or piping to a municipal Stormwater management system or a natural receiver to prevent the discharge to the Natural Environment.

6.1.4 Adding, modifying, or replacing Equipment associated with Real-time Control Systems, where:

- a) The Equipment is designed and implemented as part of the Owner's CSO reduction strategy or to optimize use of Sewage Works comprising the Authorized System;

- b) The Real-Time Control System is designed and integrated with fail-safe procedures such that they are automatically activated when the requirements of the current mode of operation cannot be met;
  - c) Risk management procedures are in place or will be in place prior to use of the Real-time Control System; and
  - d) Station alarms to control center are in place or will be in place prior to use of the Real-time Control System.
- 6.1.5 Adding, modifying, replacing, or removing chemical storage tanks (including fuel storage tanks) with Spill containment and associated Equipment.
- 6.1.6 Adding, modifying, replacing, or removing Motor Control Centre (MCC) and/or associated electrical.
- 6.2 The Owner or a Prescribed Person may alter the Authorized System by adding, modifying, replacing, or removing the following components subject to conditions 6.4 through 6.7:
- 6.2.1 Valves and their associated controls installed for maintenance purposes;
  - 6.2.2 Instrumentation for monitoring and controls, including SCADA systems, and hardware associated with these monitoring devices;
  - 6.2.3 Spill containment works for chemicals used within the Authorized System;
  - 6.2.4 Chemical metering pumps and chemical handling pumps;
  - 6.2.5 Measuring and monitoring devices that are not required by regulation, by a condition in this Approval, or by a condition otherwise imposed by the Ministry;
  - 6.2.6 Process piping within a Sewage pumping station, storage tank, or other structures; and
  - 6.2.7 Valve chambers or maintenance holes.
- 6.3 The Owner or a Prescribed Person may alter the Authorized System by adding, modifying, or replacing the following components subject to conditions 6.4 through 6.7:

- 6.3.1 Measuring and monitoring devices that are required by regulation, by a condition in this Approval, or by a condition otherwise imposed by the Ministry.
- 6.4 The design of the Alteration shall:
- 6.4.1 Be prepared by a Licensed Engineering Practitioner, where the Alteration falls within the practice of professional engineering as defined in the *Professional Engineers Act*, R.S.O. 1990;
- 6.4.2 Be consistent with or otherwise address the design objectives contained within the Design Guidelines for Sewage Works; and
- 6.4.3 Include design considerations to protect sources of drinking water, such as those included in the Standard Operating Policy for Sewage Works, and any applicable local Source Protection Plan policies.
- 6.5 The Alteration shall:
- 6.5.1 Not cause overflows or backups nor increase surcharging at any maintenance holes or privately owned infrastructure (e.g., service connections to basements) connected to the Authorized System or any Municipal Sewage Collection System connected to it;
- 6.5.2 Provide smooth flow transition to existing gravity Sewers;
- 6.5.3 Not increase the generation of sulfides and other odourous compounds in the Authorized System; and
- 6.5.4 Be wholly located within the municipal boundary over which the Owner has jurisdiction or there is a written agreement in place with the adjacent municipality respecting the Alteration and resulting Sewage Works.
- 6.6 Any Alteration of the Authorized System made under conditions 6.1, 6.2, or 6.3 shall not result in:
- 6.6.1 Exceedance of hydraulic capacity (including Uncommitted Reserve Hydraulic Capacity, as applicable) of the downstream:
- a) Municipal Sewage Collection System; or
- b) Receiving STPs.
- 6.6.2 Exceedance of any downstream Pumping Station Capacity as specified in Schedule B of this Approval.

- 6.6.3 An increase in the capacity of an existing Pumping Station Capacity of greater than 30%.
- 6.6.4 Any increase in Collection System Overflows that is not offset by measures taken elsewhere in the Authorized System.
- 6.6.5 Any increase in the frequency and/or volume of STP Bypasses or STP Overflows that is not offset by measures.
- 6.6.6 Deterioration of the normal operation of municipal STPs and/or the Authorized System.
- 6.6.7 A negative impact on the ability to undertake monitoring necessary for the operation of the Authorized System.
- 6.6.8 Adverse Effects.
- 6.7 The Alteration is subject to the following conditions:
  - 6.7.1 The Owner consents in writing to the Alteration.
  - 6.7.2 The person responsible for the design has verified in writing that the Alteration meets the requirements of conditions 6.4.1 and 6.4.2, as applicable.
  - 6.7.3 The Owner has verified in writing that the Alteration meets the requirements of conditions 6.4.3, 6.7.1, and 6.7.2.
- 6.8 The Owner shall verify in writing that any Alteration of the Authorized System in accordance with conditions 6.1 or 6.2 has met the requirements of the conditions listed in conditions 6.5 and 6.6.
- 6.9 The consents, verifications and documentation required in conditions 6.7 and 6.8 shall be:
  - 6.9.1 Recorded on Form SS2 prior to undertaking the Alteration; and
  - 6.9.2 Retained for a period of at least ten (10) years by the Owner.
- 6.10 For greater certainty, the verification requirements set out in condition 6.9 do not apply to any Alteration in respect of the Authorized System which:
  - 6.10.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98; or
  - 6.10.2 Constitutes maintenance or repair of the Authorized System, including changes to software for an existing SCADA system resulting from Alterations authorized in condition 6.2.

- 6.11 The Owner shall update, within twelve (12) months of the Alteration of the Sewage Works being placed into service, any drawings maintained for the Municipal Sewage Collection System to reflect the Alterations of the Sewage Works, where applicable.

## **7.0 Authorizations of Future Alterations to Equipment with Emissions to the Air**

- 7.1 The Owner and a Prescribed Person may alter the Authorized System by adding, modifying, or replacing the following Equipment in the Municipal Sewage Collection System:
- 7.1.1 Venting for odour control using solid scavenging or carbon adsorption units;
  - 7.1.2 Venting for odour control by replacing existing biofiltration or wet air scrubbing systems, including any components, with Equipment of the same or better performance characteristics; and
  - 7.1.3 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline, or biofuel, and that are used for emergency duty only with periodic testing.
- 7.2 Any Alteration of the Municipal Sewage Collection System made under condition 7.1 that may discharge or alter the rate or manner of a discharge of a Compound of Concern to the atmosphere is subject to the following conditions:
- 7.2.1 The Owner shall, at all times, take all reasonable measures to minimize odorous emissions and odour impacts from all potential sources at the Facility.
  - 7.2.2 The Owner shall ensure that the noise emissions from the Facility comply with the limits set out in Publication NPC-300.
  - 7.2.3 The Owner shall ensure that the vibration emissions from the Facility comply with the limits set out in Publication NPC-207.
- 7.3 The Owner shall not add, modify, or replace Equipment in the Municipal Sewage Collection System as set out in condition 7.1 unless the Equipment performs an activity that is directly related to municipal Sewage collection and transmission.
- 7.4 The emergency generators identified in condition 7.1.3 shall not be used for non-emergency purposes (excluding generator testing) including the generation of electricity for sale or for peak shaving purposes.

- 7.5 The Owner shall verify in writing that any addition, modification, or replacement of Equipment in accordance with condition 7.1 has met the requirements of the conditions listed in conditions 7.2, 7.3, and 7.4.
- 7.6 The verifications and documentation required in condition 7.5 shall be:
- 7.6.1 Recorded on Form A1 prior to the additional, modified or replacement Equipment being placed into service; and
- 7.6.2 Retained for a period of at least ten (10) years by the Owner.
- 7.7 For greater certainty, the verification and documentation requirements set out in condition 7.5 and 7.6 do not apply to any addition, modification, or replacement in respect of the Authorized System which:
- 7.7.1 Is exempt from the requirements of the EPA, or for Equipment that is exempt from s.9 of the EPA under O. Reg. 524/98; or
- 7.7.2 Constitutes maintenance or repair of the Authorized System.

## **8.0 Previously Approved Sewage Works**

- 8.1 If approval for an Alteration to the Authorized System was issued under the EPA and is revoked by this Approval, the Owner may make the Alteration in accordance with:
- 8.1.1 The terms of this Approval; or
- 8.1.2 The terms and conditions of the revoked approval that were applicable as of the date this approval was issued, provided that the Alteration is commenced within five (5) years of the date that the revoked approval was issued.

## **9.0 Transition**

- 9.1 An Alteration of the Authorized System is exempt from the requirements in clause (c) of condition 4.1.1 and clause (c) of condition 5.2.1 where:
- 9.1.1 Effort to undertake the Alteration, such as tendering or commencement of construction of the Sewage Works associated with the Alteration, begins on or before May 20, 2023.
- 9.1.2 The design of the Alteration conforms to the Design Guidelines for Sewage Works;
- 9.1.3 The design of the Alteration was completed on or before the issue date of this Approval or a Class Environmental Assessment was

completed for the Alteration and changes to the design result in significant cost increase or significant project delays; and

- 9.1.4 The Alteration would be otherwise authorized under this Approval.

## **Schedule E: Operating Conditions**

System Owner	<b>Kawartha Lakes, The Corporation of the City of</b>
ECA Number	<b>141-W601</b>
System Name	<b>City of Kawartha Lakes Wastewater System</b>
ECA Issue Date	<b>October 12th, 2022</b>

### **1.0 General Operations**

- 1.1 The Owner shall ensure that, at all times, the Sewage Works comprising the Authorized System and the related Equipment and Appurtenances used to achieve compliance with this Approval are properly operated and maintained.
- 1.2 Prescribed Persons and Operating Authorities shall ensure that, at all times, the Sewage Works under their care and control and the related Equipment and Appurtenances used to achieve compliance with this Approval are properly operated and maintained.
- 1.3 In conditions 1.1 and 1.2 “properly operated and maintained” includes effective performance, adequate funding, adequate operator staffing and training, including training in applicable procedures and other requirements of this Approval and the EPA, OWRA, CWA, and regulations, adequate laboratory services, process controls and alarms and the use of process chemicals and other substances used in the Authorized System.

### **2.0 Duties of Owners and Operating Authorities**

- 2.1 The Owner, Prescribed Persons and any Operating Authority shall ensure the following:
  - 2.1.1 At all times that the Sewage Works within the Authorized System are in service the Sewage Works are:
    - a) Operated in accordance with the requirements under the EPA and OWRA, and
    - b) Maintained in a state of good repair.
  - 2.1.2 The Authorized System is operated by persons having the training or expertise for their operating functions that is required by O. Reg. 129/04 (Licensing of Sewage Works Operators) under the OWRA and this Approval.

- 2.1.3 All sampling, testing, monitoring, and reporting requirements under the EPA and this Approval that relate to the Authorized System are complied with.
- 2.1.4 Any person who is operating the Sewage Works within the Authorized System is supervised by an operator-in-charge as described in O. Reg. 129/04 under the OWRA.
- 2.2 For clarity, the requirements outlined in the above conditions 2.1.1 through 2.1.4 for Prescribed Persons and any Operating Authority only apply to Sewage Works within the Authorized System where they are responsible for the operation.
- 2.3 The Owner, Prescribed Persons and Operating Authority shall take all reasonable steps to minimize and ameliorate any Adverse Effect on the Natural Environment or impairment of the quality of water of any waters resulting from the operation of the Authorized System, including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

### **3.0 Operations and Maintenance**

#### **3.1 Inspection**

- 3.1.1 The Owner shall ensure that all Sewage Works within the Authorized System are inspected at the frequency and in accordance with procedures set out in their O&M Manual.
- 3.1.2 The Owner shall ensure that:
- a) Any pumping stations, combined Sewage storage tanks, and any Collection System Overflow within the Authorized System as of the date of issuance of this Approval are inspected at least once per calendar year starting the year after the O&M Manual is required to be prepared and implemented as per condition 3.2.1 in Schedule E of this Approval, and more frequently if required by the O&M Manual; and
  - b) Any pumping stations, combined Sewage storage tanks, and any Collection System Overflow established or replaced within the Authorized System after the date of issuance of this Approval are inspected within one year of being placed into service and thereafter once per calendar year and more frequently if required by the O&M Manual.
- 3.1.3 The inspection of the combined Sewage storage tanks required in condition 3.1.2 shall include physical inspection at the Point of

Entry, including looking for signs of unplanned discharges from Wet Weather Flow and Dry Weather Flow.

3.1.4 The Owner shall clean and maintain Sewage Works within the Authorized System to ensure the Sewage Works perform as designed.

3.1.5 The Owner shall maintain records of the results of the inspections required in condition 3.1.1, 3.1.2, and 3.1.3, monitoring (if applicable) and any cleaning and maintenance operations undertaken, and shall make available the records for inspection by the Ministry upon request. The records shall include the following:

- a) Asset ID and name of the Sewage Works;
- b) Date and results of each inspection, maintenance, or cleaning; and
- c) Name of person who conducted the inspection, maintenance, or the name of the inspecting official, where applicable.

### 3.2 Operations & Maintenance (O&M) Manual

3.2.1 The Owner shall prepare and implement an operations and maintenance manual for Sewage Works within the Authorized System on or before December 31, 2023, that includes or references, but is not necessarily limited to, the following information:

- a) Procedures for the routine operation of the Sewage Works;
- b) Inspection programs, including the frequency of inspection, and the methods or tests employed to detect when maintenance is necessary;
- c) Maintenance and repair programs, including:
  - i The frequency of maintenance and repair for the Sewage Works.
  - ii Clean out requirements for any storage or overflow tanks, if applicable.
- d) Operational and maintenance requirements to protect sources of drinking water, such as those included in the Standard Operating Policy for Sewage Works, and any applicable local Source Protection Plan policies;

- e) Procedures for routine physical inspection and checks of controlling systems (e.g., SCADA) to ensure the mechanical integrity of Equipment and its accuracy on the controlling system.
  - f) Procedures for preventing odours and odour impacts;
  - g) Procedures for calibration of monitoring Equipment (e.g., flow, level, pressure);
  - h) Emergency Response, Spill Reporting and Contingency Plans and Procedures for dealing with Equipment breakdowns, potential Spills and any other abnormal situations, including notification to the SAC, the Medical Officer of Health, and the District Manager, as applicable;
  - i) Procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken; and
  - j) As-built drawings or record drawings of the Sewage Works.
- 3.2.2 The Owner shall review and update the O&M Manual and ensure that operating staff have access, as per O. Reg 129/04 (Licensing of Sewage Works Operators) under the OWRA. Upon request, the Owner shall make the O&M Manual available to Ministry staff.
- 3.2.3 The Owner shall revise the O&M Manual to include procedures necessary for the operation and maintenance of any Sewage Works within the Authorized System that are established, altered, extended, replaced, or enlarged after the date of issuance of this approval prior to placing into service those Sewage Works.
- 3.2.4 For greater certainty, the O&M Manual may be a single document or a collection of documents that, when considered together, apply to all parts of the Authorized System.
- 3.3 Collection System Overflows
- 3.3.1 Any CSO at a point listed in Table B4 of Schedule B is considered a Class 1 approved discharge type Spill under O.Reg.675/98:
- a) Where the CSO is as a result of wet weather events when the designed capacity of the Authorized System is exceeded;
  - b) Where the CSO is a direct and unavoidable result of a planned repair and/or maintenance procedure, the Owner has notified the Local Ministry Office fifteen at least (15) calendar days

prior to the CSO and the Local Ministry Office has provided written consent of the CSO; or

- c) Where the CSO is planned for research or training purposes, the Owner has notified the Local Ministry Office fifteen at least (15) calendar days prior to the CSO and the Local Ministry Office has provided written consent of the CSO.

3.3.2 Any SSO at a point listed in Table B5 of Schedule B is considered a Class 1 approved discharge type Spill under O.Reg. 675/98:

- a) Where the SSO is a direct and unavoidable result of a planned repair or maintenance procedure and the Owner has notified the Local Ministry Office at least fifteen (15) calendar days prior to the SSO and the Director for the purposes of s.4 of O. Reg. 675/98 under the EPA has provided written consent of the SSO; or
- b) Where the SSO is planned for research or training purposes, the Owner has notified the Local Ministry Office at least fifteen (15) calendar days prior to the SSO and the Director for the purposes of s.4 of O. Reg. 675/98 under the EPA has provided written consent of the SSO.

3.3.3 On or before May 20, 2025, the Owner shall establish signage to notify the public, at the nearest publicly accessible point(s) downstream of any CSO outfall location identified in Schedule B, Table B4, and any SSO when the overflow is piped to a specified outlet point. If the nearest publicly accessible point is more than 100m away, then signage shall be established at the CSO or SSO outfall location. The signage shall include the following minimum information:

- a) Type of Collection System Overflow;
- b) Identification of potential hazards and limitations of water use, as applicable;
- c) ECA number and/or asset ID; and
- d) The Owner's contact information.

#### 3.4 Monitoring

3.4.1 For a Collection System Overflow that occurs at a designated location, the following conditions apply:

- a) For CSO storage tanks/facilities listed in Table B3, the Owner shall:
- i On or before November 20, 2022 or within six (6) months of the date of the publication of the Ministry's monitoring guidance, whichever is later, collect a composite sample of the combined Sewage from the CSO tank whenever the tank(s) is(are) in operation. If there is more than one tank, the tank nearest to the discharge point shall be sampled. The composite sample shall consist, at a minimum, of one sample at the beginning of the Event, and one sample at approximately every 8-hours until the end of the Event. The composite sample shall be analyzed, at a minimum, for Biochemical Oxygen Demand (BOD) (or Chemical Oxygen Demand (COD) if agreed upon by the District Manager), total suspended solids, total phosphorus and total Kjeldahl nitrogen. If the CSO continues for more than one day, multiple composite samples are allowed.
  - ii If 3.4.1 a) ii) cannot be achieved, then surrogate sampling may be used to determine the contamination concentrations of the discharge CSO tank overflow, at a minimum, for BOD (or COD), total suspended solids, total phosphorus and total Kjeldahl nitrogen. The methodology in determining, applying, and analyzing surrogate sampling shall be proposed by the Owner and subject to the written approval of the District Manager.
- b) For CSO regulator structures listed in Table B2, and for any CSO or SSO locations listed under Table B4 or Table B5, the Owner shall:
- i On or before November 20, 2022, take at least one (1) grab sample, for BOD (or COD, if agreed upon by the District Manager), total suspended solids, total phosphorus, total Kjeldahl nitrogen, and E. Coli, or
  - ii On or before November 20, 2022 or within six (6) months of the date of publication of the Ministry's monitoring guidance, whichever is later, use surrogate sampling to determine the Contaminant concentrations of the discharged Collection System Overflow, at a minimum, for BOD (or COD), total suspended solids, total phosphorus, total Kjeldahl nitrogen, and E. Coli. The methodology in determining, applying, and analyzing

surrogate sampling shall be proposed by the Owner and subject to the written approval of the District Manager.

- c) The Owner shall use the Event discharged volume and the concentrations as determined in condition 3.4.1 to calculate the loading to the Natural Environment for each parameter.

3.4.2 For any Spill of Sewage that does not meet 3.4.1 a) or b):

- a) Where practicable, take at least one (1) grab sample, and analyzed for BOD (or COD, if agreed upon by the District Manager), total suspended solids, total phosphorus, total Kjeldahl nitrogen, and E. Coli
- b) The Owner shall use the discharged volume, where possible, and the concentrations as determined in condition 3.4.2 a) to calculate the loading to the Natural Environment for each parameter.

3.4.3 If COD sampling was completed, the equivalent BOD values are required to be included with the data reported to the Ministry.

3.4.4 The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following documents and all analysis shall be conducted by a laboratory accredited to the ISO/IEC:17025 standard or as directed by the District Manager:

- a) Procedure F-10-1, "Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only)", as amended from time to time.
- b) The Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater Version 2.0" (January 2016), as amended from time to time.
- c) The publication "Standard Methods for the Examination of Water and Wastewater", as amended from time to time.

#### **4.0 Reporting**

4.1 The Owner shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.

4.2 Collection System Overflows

- 4.2.1 If the Collection System Overflow meets the criteria listed in condition 3.3.1 or 3.3.2:
- a) The Owner shall report the Event as a Class 1 approved discharge type Spill as soon as practicable to the Ministry either by a verbal to SAC or in an electronic format if the Ministry makes a system available;
  - b) The Owner shall report the Event to the local Medical Officer of Health in a manner agreed upon with the local Medical Officer of Health;
  - c) The manner of notification to the Ministry shall be in two (2) stages and include, at a minimum, the following information:
    - i) The Asset ID, infrastructure description as detailed in Table B5 in Schedule B, the outfall location, and the Point of Entry (as applicable), and the reason(s) for the Event.
    - ii) First stage of reporting:
      - a) The date and time (start) of the Event.
    - iii) Second stage of reporting (as soon as practicable and may be reported at same time as first stage):
      - a) The date, duration, and time (start and end) of the Event;
      - b) The estimated or measured volume of the Event, accurate to at least +/- 20% of the volume;
        - i) If the volume of the Event is not readily available at the time of the second stage of reporting, the estimated volume can be provided to the Ministry within seven (7) calendar days of the second stage of reporting;
      - c) If any, summary of complaints, observed adverse impacts, any additional sampling obtained, disinfection, and any corrective measures taken;
  - d) Upon request of the local office, the Owner shall within fifteen (15) calendar days of the occurrence of any Collection System Overflow, the Owner shall submit a full written report of the occurrence to the District Manager describing the

cause and discovery of the Collection System Overflow, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation, or an alternate report as agreed to in writing by the District Manager.

#### 4.3 Spills

4.3.1 If the Collection System Overflow does not meet the criteria listed in condition 3.3.1 or 3.3.2, or is otherwise considered a Spill of Sewage:

- a) The Owner shall report the Spill to SAC pursuant to O.Reg.675/98 and Part X of the EPA;
- b) The Owner shall report the Event to the local Medical Officer of Health in a manner agreed upon with the local Medical Officer of Health;
- c) In addition to the obligations under Part X of the Environmental Protection Act, the Owner shall, within fifteen (15) calendar days of the occurrence of any reportable Spill, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill or loss, actual/estimated volume of the Spill, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

4.4 If the Owner is unable to determine the volume of a Collection System Overflow for the purpose of reporting, the Owner shall develop procedures that enable estimated or measured volumes to be included in the required reporting for any Collection System Overflow occurring on or after Oct 20, 2023.

4.5 The Owner shall follow the direction of the Ministry and the local Medical Officer of Health regarding any Collection System Overflows.

4.6 The Owner shall prepare an annual performance report for the Authorized System that:

- 4.6.1 Is submitted to the Director on or before March 31<sup>st</sup> of each year and covers the period from January 1<sup>st</sup> to December 31<sup>st</sup> of the preceding calendar year.
- a) For clarity, the first report shall cover the period of January 1st, 2023 to December 31st, 2023 and be submitted to the Director on or before March 31st, 2024.

- b) For the transitional period of January 1, 2022 to December 31, 2022, annual reporting requirements from previous ECAs pertaining to Spills only, where these occurred in the reporting period, and that have been revoked through issuance of this ECA shall apply.
  - i For the transitional period, condition 4.7.2 does not apply.
- 4.6.2 Is also submitted to the District Manager where a Collection System Overflow or Spill of Sewage has occurred in the reporting period.
- 4.6.3 If applicable, includes a summary of all required monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations.
- 4.6.4 Includes a summary of any operating problems encountered and corrective actions taken.
- 4.6.5 Includes a summary of all calibration, maintenance, and repairs carried out on any major structure, Equipment, apparatus, mechanism, or thing forming part of the Municipal Sewage Collection System.
- 4.6.6 Includes a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.
- 4.6.7 Includes a summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat.
- 4.6.8 Includes a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including:
  - a) Dates;
  - b) Volumes and durations;
  - c) If applicable, loadings for total suspended solids, BOD, total phosphorus, and total Kjeldahl nitrogen, and sampling results for E.coli;
  - d) Disinfection, if any; and

- e) Any adverse impact(s) and any corrective actions, if applicable.
- 4.6.9 Includes a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following items, as applicable:
- a) A description of projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination including expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted.
  - b) Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines.
  - c) An assessment of the effectiveness of each action taken.
  - d) An assessment of the ability to meet Procedure F-5-1 or Procedure F-5-5 objectives (as applicable) and if able to meet the objectives, an overview of next steps and estimated timelines to meet the objectives.
  - e) Public reporting approach including proactive efforts.
- 4.7 The report described in condition 4.6 shall be:
- 4.7.1 Made available, on request and without charge, to members of the public who are served by the Authorized System; and
  - 4.7.2 Made available, by June 1<sup>st</sup> of the same reporting year, to members of the public without charge by publishing the report on the Internet, if the Owner maintains a website on the Internet.

## 5.0 Record Keeping

- 5.1 The Owner shall retain for a minimum of ten (10) years from the date of their creation:
  - 5.1.1 All records, reports and information required by this Approval and related to or resulting Alterations to the Authorized System, and
  - 5.1.2 All records, report and information related to the operation, maintenance and monitoring activities required by this Approval.
- 5.2 The Owner shall update, within twelve (12) months of any Alteration to the Authorized System being placed into service, any drawings maintained for

the Municipal Sewage Collection System to reflect the Alteration of the Sewage Works, where applicable.

## **6.0 Review of this Approval**

- 6.1 No later than the date specified in Condition 1 of Schedule A of this Approval, the Owner shall submit to the Director an application to have the Approval reviewed. The application shall, at minimum:
- 6.1.1 Include an updated description of the Sewage Works within the Authorized System, including any Alterations to the Sewage Works that were made since the Approval was last issued; and
  - 6.1.2 Be submitted in the manner specified by Director and include any other information requested by the Director.

## **7.0 Source Water Protection**

- 7.1 The Owner shall ensure that any Alteration in the Authorized System is designed, constructed, and operated in such a way as to be protective of sources of drinking water in Vulnerable Areas as identified in the Source Protection Plan, if available.
- 7.2 The Owner shall prepare a "Significant Drinking Water Threat Assessment Report for Proposed Alterations" for the Authorized System on or before May 20, 2023 that includes, but is not necessarily limited to:
- 7.2.1 An outline of the circumstances under which the proposed Alterations could pose a Significant Drinking Water Threat based on the Director's Technical Rules established under the CWA.
  - 7.2.2 An outline of how the Owner assesses the proposed Alterations to identify drinking water threats under the CWA.
  - 7.2.3 For any proposed Alteration a list of components, Equipment, or Sewage Works that are being altered and have been identified as a Significant Drinking Water Threat.
  - 7.2.4 A summary of design considerations and other measures that have been put into place to mitigate risks resulting from construction or operation of the components, Equipment or Sewage Works identified in condition 7.2.3, such as those included in the Standard Operating Policy for Sewage Works.
- 7.3 The Owner shall make any necessary updates to the report required in condition 7.2 at least once every twelve (12) months.

- 7.4 Any components, Equipment or Sewage Works added to the report required in condition 7.2 shall be included in the report for the operational life of the Sewage Works.
- 7.5 Upon request, the Owner shall make a copy of the report required in condition 7.2 available to the Ministry or Source Protection Authority staff.

## 8.0 Additional Studies

### Assessment of Wet Weather Flows Compared to Dry Weather Flows

8.1 This condition and the following requirements apply where:

- a) The Authorized System has no Combined Sewers or Partially Separated Sewers; and
- b) There has been one or more of: an STP Overflow, STP Bypass, or Collection System Overflow within the ten (10) year period starting January 1, 2012 and ending December 31, 2021.

The following requirements do not apply if:

- a) The Collection System Overflow is a result of emergency overflows at pumping stations during power outage or Equipment failure; and
- b) There has been no STP Overflow or STP Bypass.

8.1.1 The Owner shall conduct an assessment of Wet Weather Flows compared to the Dry Weather Flows in the Authorized System and/or to the STP(s) described in Schedule A, as per the following conditions:

- a) The assessment shall evaluate available data from the ten (10) year period starting January 1, 2012 and ending December 31, 2021.
- b) The assessment shall be completed and submitted to the Director by April 30, 2024.
- c) In the event that Wet Weather Flows in the ten (10) year period described above have created STP Bypasses or STP Overflows at the STP(s) specified in Schedule A or Collection System Overflows in an Average Year, then the study shall include:
  - i Actions and timelines to meeting the Procedure F-5-1 objectives;

- ii Review of causes of STP Overflow, STP Bypass and/or Collection System Overflow Events, including inflow and infiltration, sewer use, and characteristics of rainfall events, as applicable;
- iii Inspection of the Sewers and bypass structures; and
- iv Identification of any near and/or long-term corrective actions with anticipated timelines.

### **Assessment of Conformance to Procedure F-5-1 and F-5-5**

8.2 This condition and the following requirements apply where:

- a) The Authorized System includes Combined Sewers or Partially Separated Sewers, and
- b) The Authorized System experienced a Collection System Overflow, an STP Bypass, or STP Overflow within the ten (10) year period starting January 1, 2012 and ending December 31, 2021.

8.2.1 The Owner shall conduct an assessment to demonstrate conformance of the Authorized System to Procedure F-5-1 or Procedure F-5-5, as applicable, in accordance with the following conditions:

- a) The assessment shall:
  - i Be prepared by a Licensed Engineering Practitioner and be submitted to the Director by November 20, 2023;
  - ii Be performed for each of the years 2012 through to 2021;
  - iii Include the number of Collection System Overflows as a result of storms that are not Significant Storm Events for each year;
  - iv Include the estimated length of Combined Sewers and Separate Sewers within the collection system;
  - v Include the date of the most recent PPCP;
  - vi Include the status of each action items specified in the PPCP, as applicable;
  - vii Include a summary of additional action items not specified in a PPCP which have been taken to prevent

Collection System Overflows in the ten (10) year period starting January 1, 2012 and ending December 31, 2021; and

- viii Identify timelines for achieving conformance to Procedure F-5-1 or Procedure F-5-5 objectives, as applicable.

8.2.2 The Owner shall submit a new or updated PPCP to the Director, no later than May 20, 2027, if:

- a) No PPCP exists for the Authorized System, or
- b) The PPCP for the Authorized System is older than ten (10) years as of October 12th, 2022.

8.2.3 The PPCP shall include, at minimum:

- a) Characterization of the Combined Sewer System (CSS) – Monitoring, modeling and other appropriate means shall be used to characterize the CSS and the response of the CSS to precipitation events. The characterization shall be based on the ten (10) year period starting January 1, 2012 and ending December 31, 2021 and include the determination of the location, frequency and volume of the CSOs, concentrations and mass pollutants resulting from CSOs, and identification and severity of suspected CSS deficiencies. Records shall be kept for CCS including the following:
  - i Location and physical description of CSO and SSO outfalls in the collection systems, emergency overflows at pumping stations, and bypass locations at STPs;
  - ii Location and identification of receiving water bodies, including sensitive receivers, for all Combined Sewer outfalls;
  - iii Combined Sewer system flow and STP treatment capacities, present and future (20-year timeframe) expected peak flow rates during dry weather and wet weather;
  - iv Capacity of all regulators;
  - v Location of cross connections between sanitary Sewage and Stormwater infrastructure; and

- vi Location and identification of infrastructure in the CSS where monitoring Equipment is installed.
- b) Operational procedures shall be developed including the following:
  - i Combined Sewer maintenance program; and
  - ii Regulator inspection and maintenance programs.
- c) An examination of non-structural and structural CSO control alternatives that may include:
  - i Source control;
  - ii Inflow/Infiltration reduction;
  - iii Operation and maintenance improvements;
  - iv Control structure improvements;
  - v Collection system improvements;
  - vi Storage technologies;
  - vii Treatment technologies; and
  - viii Sewer separation.
- d) An implementation plan with a schedule of all practical measures to eliminate dry weather overflows and minimize wet weather overflows, as well as an overflow percent reduction target.
  - i The implementation plan shall show how the minimum CSO prevention and control requirements and other criteria in Procedure F-5-5 are being achieved.

8.2.4 The Owner shall ensure that an updated PPCP for the Authorized System is prepared within ten (10) years of the date that the previous PPCP was finalized.

### **Sewer Model**

8.3 The Owner shall prepare a new/updated Sewer model, within three (3) years of October 12th, 2022, if any of the following pertain to the Authorized System:

8.3.1 It includes Combined Sewers;

- 8.3.2 It services a population greater than 10,000; or
- 8.3.3 The Sewer model for the Authorized System was last updated prior to 2012 and 8.3.1 or 8.3.2 apply.

## Schedule F: Residue Management

System Owner	<b>Kawartha Lakes, The Corporation of the City of</b>
ECA Number	<b>141-W601</b>
System Name	<b>City of Kawartha Lakes Wastewater System</b>
ECA Issue Date	<b>October 12th, 2022</b>

### 1.0 Residue Management System

1.1 Not Applicable:

## **APPENDIX Q: Lindsay Southeast Development Area Background Study**

**CITY OF KAWARTHA LAKES  
AREA-SPECIFIC DEVELOPMENT  
CHARGES BACKGROUND STUDY**

**LINDSAY SOUTH EAST  
DEVELOPMENT AREA**

**For Public Circulation and Comment**

JULY 4, 2013  
(as amended September 20, 2013)



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 **Planning for growth**

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# 1. INTRODUCTION

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# 1. INTRODUCTION

## 1.1 Study Process

Watson and Associates Economists Ltd. (Watson), in conjunction with AECOM Canada Ltd. (AECOM), were retained by the City of Kawartha Lakes to undertake the statutory review of the area-specific Development Charge (DC) By-law for the Lindsay South East Development Area.

The process for updating the previous area-specific DC by-law has been undertaken in conjunction with information prepared by City staff and engineering consultants AECOM. The proposed charges will recover the growth-related capital costs and related studies for water distribution and sanitary sewer collection services from future system growth occurring within the Lindsay South East Development Area.

Accordingly, this study has been prepared pursuant to the requirements of the *Development Charges Act, 1997*(DCA). The Act requires that this background study and the draft area-specific development charge by-law must be made available to the public at least two weeks prior to a properly advertised public meeting of Council. The study must be approved by Council before by-law passage and must, at a minimum, contain the information set out in s.10 of the DCA, 1997 and in s.8 of O.Reg. 82/98. In compliance with the legislation, the study and proposed by-law will be made available to the public, in order to provide interested parties with sufficient background information on the study's recommendations, and the basis for these recommendations.

The statutory Public Meeting of Council, as required under section 12 of the DCA, was held on July 19, 2013 in Council Chambers at Kawartha Lakes City Hall. Statutory notice for the public meeting was advertised prior to the public meeting, (i.e. at least 20 days prior to the public meeting) as required under the DCA. At the public meeting a presentation was given to enable the public to generally understand the area-specific development charge being proposed and to solicit public input on the matter prior to by-law passage. After the statutory public meeting, the City identified minor modifications to the benefiting service area and anticipated development therein. The background studies prepared by AECOM and Watson were subsequently amended to include these modifications on September 6, 2013 and September 20, 2013 respectively.

The process to be followed in finalizing the report and recommendations includes:

- Council determination if any further public meetings are required on the matter; and
- Passage of the area-specific DC by-law at a subsequent Council Meeting; currently scheduled for October 8, 2013.

---

## 1.2 Development Charges Act (DCA) Background Study Requirements

The DCA requires that a development charge background study must be completed and adopted by City Council before passing a development charge by-law. The mandatory inclusions in such a study are set out in s.10 of the DCA and in s.8 of O.Reg. 82/98, and are as follows:

- a) “the estimates under paragraph 1 of subsection 5(1) of the anticipated amount, type and location of development (addressed in Chapter 3 of this report);
- b) the calculations under paragraphs 2 to 8 of subsection 5(1) for each service to which the development charge by-law would relate (addressed in Chapter 4 of this report);
- c) an examination, for each service to which the development charge by-law would relate, of the long term capital and operating costs for capital infrastructure required for the service (addressed in Chapter 4 of this report);
- d) the following for each service to which the development charge relates:
  1. “The total of the estimated capital costs relating to the service.
  2. The allocation of the costs referred to in paragraph 1 between costs that would benefit new development and costs that would benefit existing development.
  3. The total of the estimated capital costs relating to the service that will be incurred during the term of the proposed development charge by-law.
  4. The allocation of the costs referred to in paragraph 3 between costs that would benefit new development and costs that would benefit existing development.
  5. The estimated and actual value of credits that are being carried forward relating to the service.” (O.Reg. 82/98 s.8)

A summary of key requirements of the *Development Charges Act, 1997* (DCA) follows:

1. **Services Covered** –the DCA includes most services provided by municipalities but excludes the provision of cultural or entertainment facilities (e.g. museums, theatres and art galleries); tourism facilities (e.g. convention centre); parkland acquisition; hospitals; waste management services; and headquarters for the general administration of municipalities and local boards.

2. **Capital Costs** – capital costs which may potentially be included in the calculation include the capital component of the cost to lease an asset, the cost of related studies, and rolling stock with an estimated useful lifetime of seven years or more, but excludes computer equipment.
3. **Service Standards** – service standards are based upon the average level of service provided in the municipality over the 10-year period immediately preceding the preparation of the background study. In addition, the regulation requires that “...both the quality and quantity of a service shall be taken into account in determining the (average) level of service”.
4. **Industrial Expansion Exemption** - the Act provides for a mandatory DC exemption for enlargements to existing industrial buildings (as defined in the regulation) equal to 50% of the floor area of the existing building prior to the enlargement.
5. **Capital Cost Reduction** - a 10% capital cost reduction applies to the otherwise eligible costs for all services, other than those pertaining to water supply services (including distribution and treatment services), waste water services (including sewers and treatment services), storm water and drainage control, highways (as per s.s.1(1) of the Municipal Act), police and fire protection.
6. **Development Charge Background Study** - requirements respecting the content of a DC Background Study are explicitly set out in the Act. Requirements include the identification of costs and growth estimates, an examination for each service involved of the long term capital and operating costs for capital infrastructure required, identification of costs to be incurred during the term of the by-law, and various cost allocations. The study and proposed by-law must be made available to the public at least two weeks prior to the (first) public meeting.
7. **Prescribed Index** - the regulation under the DCA specifies the use of the Statistics Canada Quarterly, Construction Price Statistics (Cat. 62-007).
8. **Excess Capacity** - the recoverable service requirement must be reduced by the part that can be met using the municipality’s excess capacity, except for the excess capacity which Council expressed a clear intention, before or at the time the capacity was created, would be paid for by development charges or other similar charges.
9. **Treasurer’s Statement** - requires information to be provided as to reserve fund continuity, borrowings from the fund, interest accrued thereon, repayment of borrowings, non-reserve fund spending on projects, detailed accounting for credits and the source thereof.

- 
10. **Front Ending Agreements** - agreements may include work done before, as well as after, the agreement is entered into. In addition, the work must be in an area subject to the DC, non-party payments may be required at an earlier or later date than building permit issuance and may provide for “tiering” of the burden against subsequent participants, etc. Further, the Act restricts front-ending agreements to sanitary sewer, water, roads, and storm water management services.
  11. **Council Intentions** - if a need for service is to be included in the calculation, Council must have indicated that it intends to ensure that such an increase in need will be met by including it in a Council-approved Official Plan, capital forecast or similar expression of Council.
  12. **Capital Costs** - the increase in the need for service attributable to the anticipated development be estimated, as well as the capital costs necessary to provide the increased service. The latter must be reduced by applicable capital grants, subsidies and other contributions. Also, “capital costs” may include authorized costs incurred or proposed to be incurred by others on behalf of a municipality/local board, as well as those directly incurred.
  13. **Cross Subsidization** - a cost recovery shortfall from one type of development may not be made up through higher charges on other types of development.
  14. **DC Reserve Funds** – reserve funds may be created so as to group services into categories, which are then deemed to be a single service in relation to the use of money from reserve funds and credits.
  15. **OMB Powers** - the OMB is not empowered to remove or reduce the scope of an exemption, to change the phasing in provisions to make the charge payable earlier, to increase the charge in any particular case or to change the by-law expiry date as approved by Council.
  16. **Reserve Funds** - the DC reserve fund money may be spent only for capital costs as determined as part of the legislated method for determination of development charges.
  17. **Reserve Fund Borrowing** – borrowing from reserve funds is permitted subject to repayment of interest at the prescribed minimum rate.
  18. **Credits** - under the new Act, a DC credit must be given where a “ ... municipality agrees to allow a person to perform work that relates to a service to which a DC by-law relates ...” Such credit is the reasonable cost of doing the work as agreed by the municipality and the landowner. Credit (or partial credit) may be given before the work is completed. It is a credit only in relation to the service to which the work relates and with respect to

that part of the development charge that relates to the service. The credit may be transferred under defined conditions.

19. **Subdivision Agreement Conditions** - agreements may include “local services related to a plan of subdivision or within the area to which the plan relates”.
20. **Notification of DC’s** - the approval authority must ensure that the first purchaser of the subdivided land, after final approval of the plan, is informed of all DC’s applicable to the development.
21. **Regulations** - the Lieutenant-Governor may make regulations as defined in the Act.

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## **2. PREVIOUS AREA SPECIFIC DC POLICIES FOR THE LINDSAY SOUTH EAST DEVELOPMENT AREA**

## 2. PREVIOUS AREA SPECIFIC DC POLICIES FOR THE LINDSAY SOUTH EAST DEVELOPMENT AREA

### 2.1 Previous Lindsay South East Area Specific Development Charges

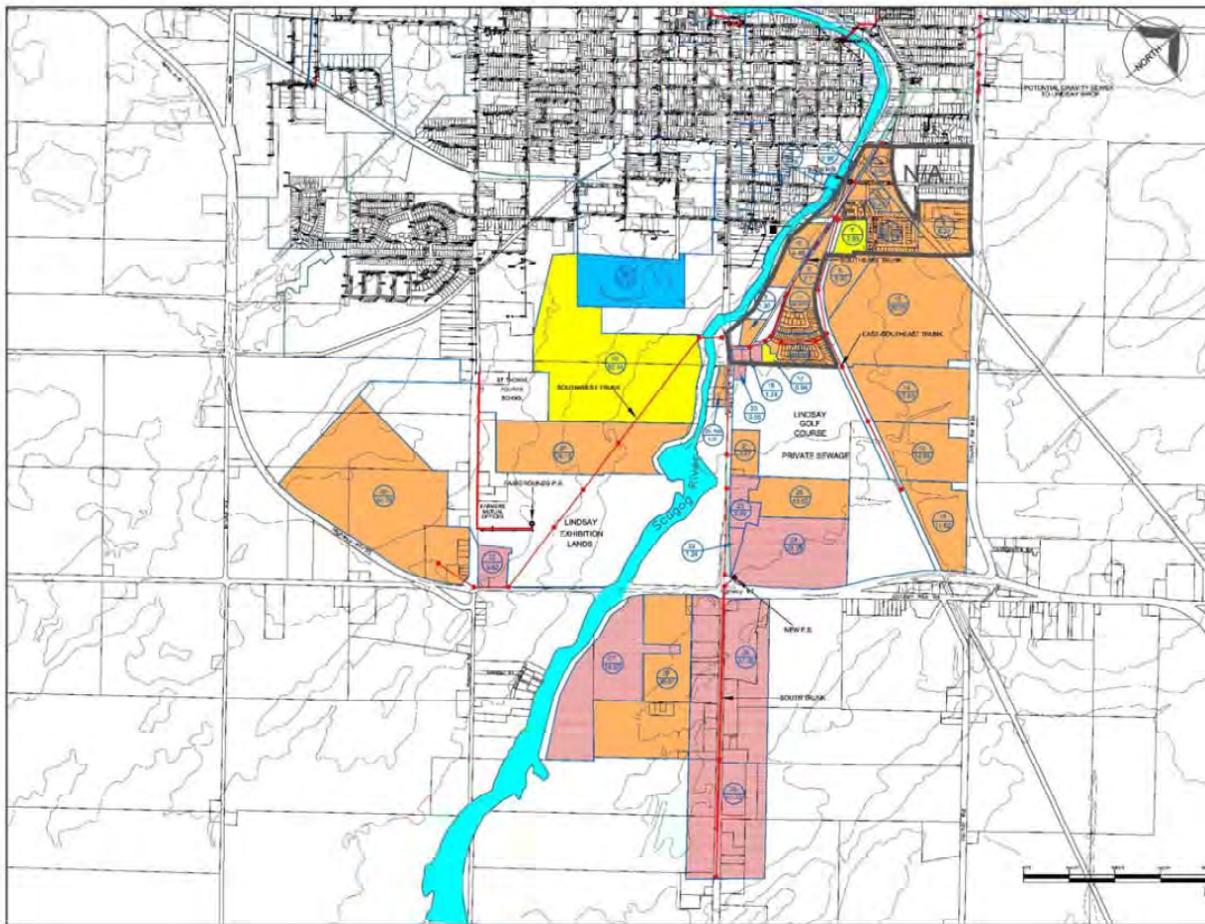
On October 10, 2006 the Council of the City of Kawartha Lakes passed By-law 2006-290 for the imposition of area-specific development charges within the Lindsay South East Development Area. The bylaw imposed charges for the recovery of growth-related capital costs of water distribution and sanitary sewer collection services within the defined area. The DC Background Study underlying the by-law identified the broader Lindsay South East Development Area to encompass lands within and outside of the urban service boundary. This servicing scheme was developed to examine the potential oversizing requirements to the anticipated water and sanitary sewer infrastructure if lands outside the existing urban service boundary were to be developed. Consequently, the area-specific DC by-law was imposed only for those lands within the existing urban service boundary (identified as areas NA and E1 within Figure 2-1 below). Separate capital charge by-laws were adopted under the authority of the *Municipal Act* to recover the capital costs related to development outside of the urban service boundary.

By-law 2006-290 established development charges for sanitary sewer and water services on an area-specific basis for the Lindsay South East Development Area. The DC by-law imposed charges on a per hectare basis for all eligible uses within the defined service benefiting areas. These charges are set out in Schedule “B” to the By-law and are summarized in Table 2-1 below.

**Table 2-1**  
**Lindsay Southeast DC Bylaw Schedule of Charges**

	Development Charges (per hectare)		
	Sanitary Sewer	Water Works	Total
NA	\$302	\$-	\$302
E1	\$25,252	\$19,210	\$44,462

**Figure 2-1**  
**Lindsay South East Development Area Lands**



## 2.2 Summary of DC By-law Provisions

The Lindsay South East Development Area DC By-law includes the following key provisions:

- Lands Affected – The development charge applies on an area-specific basis to the Lindsay South East Development Area located within the City of Kawartha Lakes municipal urban service boundary for sanitary sewer and water services. Schedule “C” to the by-law provides a key map reference of the lands.
- Calculation of Development Charges - Schedule “B” to the by-law sets out the development charge per hectare of net developable area by service. The Development Charge with respect to the use of any land, buildings or structures shall be calculated as the total of the developable area, as defined in Schedule “D” attached, included in the application, multiplied by the base rate set out in Schedule “B”.

- Timing of Calculation and Payment of the Development Charge - The development charge is calculated and is payable in full or by provision of agreed upon service, on the execution of an agreement pursuant to subsection 51(26) or 53(12) of the *Planning Act* or the date of building permit issuance, whichever is earlier.
- Indexing of Development Charges - Development charges shall be adjusted annually on January 1st on the basis of the twelve month change in the Statistics Canada Quarterly, Construction Price Statistics.
- Exemptions – This by-law exempts from the payment of the development charge any development described in subsection 2(3) and section 4 of the Act, and Section 2 of O. Reg. 82/98; i.e. developments for purposes of the municipality or board of education, expansions of existing industrial buildings up to 50% of the existing gross floor area, and residential development resulting in the enlargement of an existing dwelling unit or the creation of up to additional dwelling units therein.

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### **3. ANTICIPATED DEVELOPMENT**

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## 3. ANTICIPATED DEVELOPMENT

### 3.1 Description of the Area

The lands considered within the review area are referred to as the Lindsay South East Development Area. Within the South East Development Area there have been three sub-areas identified, each with different servicing requirements. Sub-area E1 is currently within the City's urban service area boundary, consistent with the City's recently completed Growth Management Strategy and Official Plan. The remaining sub-areas, E2 and E3 are outside the existing urban service area boundary and have been excluded from the area-specific DC calculation at this time.

Within the defined development area, a portion of the E1 sub-area is denoted as being not applicable (i.e. n/a) for water services. This reflects the availability of existing water services to accommodate the development of these lands. Consistent with the approach taken in the 2006 Lindsay South East DC Background Study, the anticipated increase in need for water services are not designed to accommodate these lands and as such have not been included in the calculation of the area-specific water charge.

Figures 3-1 and 3-2 illustrate the location of the Lindsay South East Development Area and differentiate the three sub-areas for sanitary sewer and water services respectively.





### 3.2 Lindsay South East Development Area Anticipated Development

The anticipated development for the Lindsay South East Development Area was derived from the City's Growth Management Strategy and information obtained by AECOM. Table 3-1 summarizes the anticipated growth in residential population and non-residential gross floor area within the urban service boundary for the respective services over the build-out forecast period. With respect to water services a portion of benefiting sub-area E1, referred to as NA, has been excluded from the calculation of the water services charges as sufficient water services currently exist.

**Table 3-1**  
**Lindsay South East Development Area**  
**Anticipated Development by DC Service**  
**2013-Buildout**

	Benefitting Area (E1) Anticipated Development	
	Residential Population	Non-Residential Gross Floor Area (sq. mt.)
Sanitary Sewer Services	3,089	78,000
Water Services	2,094	69,420

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## **4. AREA-SPECIFIC DEVELOPMENT CHARGE**

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## 4. AREA-SPECIFIC DEVELOPMENT CHARGE

### 4.1 Lindsay South East Development Area Sanitary Sewer and Water Capital Needs

In preparing this study, discussions were undertaken with City of Kawartha Lakes staff and AECOM to consider the sanitary sewer and water projects and associated costs required to service the anticipated development within the Lindsay South East Development Area. Appendix A to this study contains the report prepared by AECOM which establishes the increase in needs for sanitary sewer and water services related to the anticipated development. In summary, the AECOM Report provides the following:

#### Sanitary Sewer

- Logie Street Sewer Improvements - The Logie Street sewer is currently operating at capacity during peak flows. Upsizing the surcharged 400mm diameter pipe to a 450mm diameter pipe at equivalent depth and grade to existing conditions will resolve this capacity constraint. Approximately 145m of the existing 400mm diameter sewer is to be replaced with new 450mm diameter sewers in order to accommodate the peak flows resulting from the full development of E1.
- South East Trunk Extensions - The South East Trunk Sewer has been constructed to SAN MH12A on Logie Street and has been designed to extend south on Logie Street to Lindsay Street. An extension of the SE Trunk from MH12 to MH35A at the intersection of Logie and Lindsay Streets is needed with a 375 mm diameter sewer. The SE Trunk also needs to be extended south on Lindsay Street to provide additional service and to accept flows from the future Highway 7 SPS forcemain. This extension has been sized at 300mm.
- South Trunk - A future forcemain has been identified to discharge to the South East Trunk approximately 300m south of the intersection at Logie Street and Lindsay Street. The South Trunk sewer on Lindsay Street has been preliminarily sized as a 250mm sewer at 0.50% grade. A pump station study will also be required for this project.
- New Highway 7 Pumping Station - Area E1 will contribute sewage flow to the future pumping station at Highway 7 and Lindsay Streets, where peak flow is calculated to be 28.9 L/s. A pump station study will also be required for this project.
- George Street Pumping Station Improvements - Future peak flows to the George Street Pumping Station exceed the rated capacity of 93.8L/s. In order to accommodate these ultimate peak flows, the construction of a second pumping station is necessary adjacent to the existing George St SPS. The new pumping station's wet well is to be hydraulically connected with the wet well for the second pumping station. The existing station's configuration would remain as constructed, however modifications to pumping station controls will be necessary to coincide with the controls of the new station. The second

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new station would be constructed with and sized for 24.8 L/s and be connected to the existing 250mm diameter forcemain.

### Water

- Watermain improvements for the development of E1 consist of an extension of a 300 mm watermain along Lindsay Street South from the existing 450 mm AC watermain to Hwy 7. The watermain will cross under the Scugog River and provide a connection to the existing 300mm PVC watermain located at the intersection of Logie Street and Lindsay Street South. The watermain will extend east along the north side of Hwy 7 to provide fire protection coverage along the south limit of the urban boundary and facilitate looping of the water distribution system during the development lands in the urban area.

In addition to the works identified in the AECOM Report, there are DC credits currently outstanding to developers that have front-ended water and sanitary sewer infrastructure within the area (details provided in Appendix B). Also the City has incurred sanitary sewer servicing costs for construction projects under the previous bylaw. These unfunded obligations are included in the calculation of the charge, as well as the costs associated with preparing the area-specific DC background study and bylaw.

Table 4-1 summarizes the total capital costs required for the buildout of the Lindsay South East Development Area. In total the gross capital costs for the development area are \$7.0 million. The sanitary sewer works total \$4.5 million or 64% of total costs, water works total \$2.5 million or 35% of the total costs and studies account for the remaining costs of 1% of total costs.

**Table 4-1  
Lindsay South East Development Area  
Anticipated Capital Needs by Service**

SERVICES	Gross Capital \$
<u>Sanitary Sewer Works</u>	
1 Logie Street Sewer Improvements	101,125
2 SE Trunk Extension from MH12A to MH38A	376,400
3 South Trunk	330,500
4 New Highway 7 Pumping Station	871,250
5 George Street Pumping Station	913,750
6 Engineering and Contingencies	855,698
7 Pumping Station Studies (2)	50,000
8 Non-Rebatable HST (1.75%)	61,228
<b>Total - Sanitary Sewer Works</b>	<b>3,559,951</b>
<u>Outstanding Sanitary Sewer DC Credits/Unfunded Capital</u>	
1 Ron Robinson Credits	481,530
2 Other Vendors Credits	341,096
3 City Logie/Parkside Project	108,845
<b>Total - Outstanding DC Credits/Unfunded Capital</b>	<b>931,471</b>
<b>Grand Total - Sanitary Sewer</b>	<b>4,491,422</b>
<u>Water Works</u>	
1 Linear Infrastructure - Distribution System	1,797,500
2 Engineering and Contingencies	593,175
3 Non-Rebatable HST (1.75%)	41,837
<b>Total - Water Works</b>	<b>2,432,512</b>
<u>Outstanding Water DC Credits</u>	
1 Ron Robinson Credits	36,206
<b>Grand Total - Water Works</b>	<b>2,468,718</b>
<u>Studies</u>	
1 DC Background Study	77,339
2 Non-Rebatable HST (1.75%)	1,353
<b>Total - Studies</b>	<b>78,692</b>
<b>TOTAL CAPITAL COSTS</b>	<b>7,038,832</b>

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## 4.2 Calculation of the Development Charge

Table 4-2 summarizes the calculation of the development charge by service. The anticipated capital needs summarized in Table 4-1 have been adjusted, in accordance with the requirements of the DCA, to account for the benefit to existing development from the proposed capital works. These deductions include:

- a deduction of \$62,547 for the Sanitary Sewer Logie Street Improvements (including proportionate share of engineering, contingency and non-rebateable HST) , recognizing the replacement of the exiting 145 metres of 400mm diameter sewer main as part of providing for the additional flow capacity generated from the anticipated development; and
- a deduction of \$154,273 for the Lindsay Street Watermain (including proportionate share of engineering, contingency and non-rebateable HST) , recognizing the replacement of the exiting 400 metres of 100mm diameter watermain from Mary St. southerly as part of providing for the additional flow capacity generated from the anticipated development.

The net growth-related costs for sanitary sewer services total \$4.43 million. Apportioning the costs based on the respective residential/non-residential design flows for the anticipated development, the residential cost share totals \$3.32 million and the non-residential cost share totals \$1.11 million. Dividing the respective costs shares by the anticipated residential and non-residential development produces a development charge of \$2,474 per single detached dwelling unit and \$14.18 per square metre of non-residential gross floor area.

For water services, the net growth-related costs total \$2.31 million. Apportioning the costs based on the respective residential/non-residential design flows for the anticipated development, the residential cost share totals \$1.83 million and the non-residential cost share totals \$0.48 million. Dividing the respective costs shares by the anticipated residential and non-residential development produces a development charge of \$2,008 per single detached dwelling unit and \$7.01 per square metre of non-residential gross floor area.

Growth related studies would provide for an additional net growth-related cost of approximately \$78,700, and respective charges of \$50 per single detached dwelling unit and \$0.15 per square metre of non-residential gross floor area.

**Table 4-2  
Lindsay South East Development Area  
Development Charge Calculation by Service**

SANITARY SEWER	Gross Capital \$	Less: Benefit to Existing	Net Capital\$	DC-Eligible Cost Share	
				Residential \$	Non-Res. \$
<u>Sanitary Sewer Works</u>					
1 Logie Street Sewer Improvements	101,125	46,219	54,906	46,692	8,214
2 SE Trunk Extension from MH12A to MH38A	376,400	-	376,400	320,091	56,309
3 South Trunk	330,500	-	330,500	192,391	138,109
4 New Highway 7 Pumping Station	871,250	-	871,250	507,173	364,077
5 George Street Pumping Station	913,750	-	913,750	777,054	136,696
6 Engineering and Contingencies	855,698	15,252	840,446	608,322	232,124
7 Pumping Station Studies (2)	50,000	-	50,000	35,813	14,187
8 Non-Rebatable HST (1.75%)	61,228	1,076	60,152	43,532	16,620
<b>Total - Sanitary Sewer Works</b>	<b>3,559,951</b>	<b>62,547</b>	<b>3,497,404</b>	<b>2,531,067</b>	<b>966,337</b>
<u>Outstanding DC Credits/Unfunded Capital</u>					
1 Ron Robinson Credits	481,530	-	481,530	409,494	72,037
2 Other Vendors Credits	341,096	-	341,096	290,068	51,028
3 City Logie/Parkside Project	108,845	-	108,845	92,562	16,283
<b>Total - Outstanding DC Credits/Unfunded Capital</b>	<b>931,471</b>	<b>-</b>	<b>931,471</b>	<b>792,124</b>	<b>139,347</b>
<b>Grand Total - Sanitary Sewer</b>	<b>4,491,422</b>	<b>62,547</b>	<b>4,428,875</b>	<b>3,323,191</b>	<b>1,105,684</b>
Benefiting Area E1 (population/sq.mt. of GFA)				3,089	78,000
Capital Cost per Capita/Sq.Mt. of GFA				1,076	14.18
Development Charge per Residential Dwelling Unit/Sq.Mt. of Non-Res. GFA				2,474	14.18
<u>WATER</u>					
WATER	Gross Capital \$	Less: Benefit to Existing	Net Capital\$	DC-Eligible Cost Share	
				Residential \$	Non-Res. \$
<u>Water Works</u>					
1 Linear Infrastructure - Distribution System	1,797,500	114,000	1,683,500	1,329,745	353,755
2 Engineering and Contingencies	593,175	37,620	555,555	438,816	116,739
3 Non-Rebatable HST (1.75%)	41,837	2,653	39,183	30,950	8,234
<b>Total - Water Works</b>	<b>2,432,512</b>	<b>154,273</b>	<b>2,278,238</b>	<b>1,799,510</b>	<b>478,728</b>
<u>Outstanding DC Credits</u>					
1 Ron Robinson Credits	36,206	-	36,206	28,598	7,608
<b>Total - Water Works</b>	<b>2,468,718</b>	<b>154,273</b>	<b>2,314,444</b>	<b>1,828,108</b>	<b>486,336</b>
Benefiting Area E1 (population/sq.mt. of GFA)				2,094	69,420
Capital Cost per Capita/Sq.Mt. of GFA				873	7.01
Development Charge per Residential Dwelling Unit/Sq.Mt. of Non-Res. GFA				2,008	7.01
<u>STUDIES</u>					
STUDIES	Gross Capital \$	Less: Benefit to Existing	Net Capital\$	DC-Eligible Cost Share	
				Residential \$	Non-Res. \$
<u>Studies</u>					
1 DC Background Study	77,339	-	77,339	65,769	11,570
2 Non-Rebatable HST (1.75%)	1,353	-	1,353	1,151	202
<b>Total - Studies</b>	<b>78,692</b>	<b>-</b>	<b>78,692</b>	<b>66,920</b>	<b>11,772</b>
Benefiting Area E1 (population/sq.mt. of GFA)				3,089	78,000
Capital Cost per Capita/Sq.Mt. of GFA				22	0.15
Development Charge per Residential Dwelling Unit/Sq.Mt. of Non-Res. GFA				50	0.15

Table 4-3 summarizes the total calculated charge for sanitary sewer, water and studies. In total the new calculated DC rate is \$4,532 per residential dwelling unit and \$21.33 per sq.mt. of non-residential GFA.

**Table 4-3**  
**Lindsay South East Development Area**  
**Development Charges by Service**

TOTAL DC PAYABLE BY SERVICE	\$/ Residential Unit	\$/Non-Res. GFA in Sq.Mt.
Sanitary Sewer	2,474	14.18
Water	2,008	7.01
Studies	50	0.15
Total	4,532	21.33

### **4.3 Long Term Capital and Operating Cost Examination**

As a requirement of the *Development Charges Act, 1997* under subsection 10(2)(c), an analysis must be undertaken to assess the long term capital and operating cost impacts for the capital infrastructure projects identified within the development charge. As part of this analysis, it was deemed necessary to isolate the incremental operating expenditures directly associated with these capital projects, factor in cost saving attributable to economies of scale or cost sharing where applicable, and prorate the cost on a per unit basis.

In addition to the operational impacts, over time the initial capital projects will require replacement. This replacement of capital is often referred to as life cycle cost. By definition, life cycle costs are all the costs which are incurred during the life of a physical asset, from the time its acquisition is first considered, to the time it is taken out of service for disposal or redeployment. The method selected for life cycle costing is the sinking fund method which provides that money will be contributed annually and invested, so that those funds will grow over time to equal the amount required for future replacement. To calculate the annual replacement cost of the capital projects (annual contribution = factor X capital asset cost) a lifecycle factor of 0.00516 was used (based on an annual growth rate of 2% net of inflation over the average 80 year useful life of the asset).

Table 4-4 depicts the annual operating impact resulting from the proposed gross capital projects at the time they are fully in place. It is important to note that, while municipal program expenditures will increase with growth in population, the costs associated with the new infrastructure would be delayed until the time these works are in place.

**Table 4-4**  
**Lindsay South East Development Area**  
**Estimate of Annual Operating Cost Impacts for Capital Needs**

Service Categories	Gross Capital Costs	Annual Lifecycle Cost	Annual Operating Cost	Total Annual Cost
Sanitary Sewer	\$3,559,951	\$89,570	\$81,850	\$171,420
Water	\$2,432,512	\$61,200	\$69,800	\$131,000
Total	\$5,992,463	\$150,770	\$151,650	\$302,420

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## **5. DEVELOPMENT CHARGE POLICY RECOMMENDATIONS**

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## 5. DEVELOPMENT CHARGE POLICY RECOMMENDATIONS

### 5.1 Introduction

s.s.5(1)9 of the DCA states that rules must be developed:

“... to determine if a development charge is payable in any particular case and to determine the amount of the charge, subject to the limitations set out in subsection 6.”

Paragraph 10 of the section goes on to state that the rules may provide for exemptions, phasing in and/or indexing of development charges.

s.s.5(6) of the DCA establishes the following restrictions on the rules:

- the total of all development charges that would be imposed on anticipated development must not exceed the capital costs determined under 5(1) 2-8 for all services involved.
- if the rules expressly identify a type of development, they must not provide for it to pay development charges that exceed the capital costs that arise from the increase in the need for service for that type of development. However, this requirement does not relate to any particular development.
- if the rules provide for a type of development to have a lower development charge than is allowed, the rules for determining development charges may not provide for any resulting shortfall to be made up via other development.

With respect to “the rules,” Section 6 states that a DC by-law must expressly address the matters referred to above re s.s.5(1) para. 9 and 10, as well as how the rules apply to the redevelopment of land.

### 5.2 Development Charge By-law Structure

It is recommended that:

- the City of Kawartha Lakes adopt an area-specific development charge by-law for sub-area E1 of the South East Development Area

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### **5.3 Development Charge By-law Rules**

The following subsections set out the recommended rules governing the calculation, payment and collection of development charges in accordance with Section 6 of the *Development Charges Act, 1997*.

It is recommended that:

#### **5.3.1 *Payment in any Particular Case***

In accordance with the *Development Charges Act, 1997*, s.2(2), a development charge be calculated, payable and collected where the development requires one or more of the following:

- a) the passing of a zoning by-law or of an amendment to a zoning by-law under section 34 of the Planning Act;
- b) the approval of a minor variance under Section 45 of the Planning Act;
- c) a conveyance of land to which a by-law passed under section 50(7) of the Planning Act applies;
- d) the approval of a plan of subdivision under Section 51 of the Planning Act;
- e) a consent under Section 53 of the Planning Act;
- f) the approval of a description under section 50 of the Condominium Act; or
- g) the issuing of a building permit under the Building Code Act in relation to a building or structure.

The following conventions be adopted:

- 1) In the case of residential development or redevelopment, or the residential portion of a mixed use development or redevelopment, based upon the number of residential dwelling units;
- 2) In the case of non-residential development or redevelopment, or the non-residential portion of a mixed use development or redevelopment, based upon the non-residential gross floor area of such development.

#### **5.3.2 *Exemptions***

##### **Statutory exemptions**

- industrial building additions of up to and including 50% of the existing gross floor area (defined in O.Reg. 82/98, s.1) of the building; for industrial building additions which

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exceed 50% of the existing gross floor area, only the portion of the addition in excess of 50% is subject to development charges (s.4(3));

- buildings or structures owned by and used for the purposes of any municipality, local board or Board of Education (s.3);
- residential development that results in only the enlargement of an existing dwelling unit, or that results only in the creation of up to two additional dwelling units (based on prescribed limits set out in s.2 of O.Reg. 82/98).

### **5.3.3 Phase-in Provisions**

No provisions for phasing in the development charge are provided in the development charge by-law.

### **5.3.4 Timing of Collection**

The timing of calculation and payment of the development charge with respect to an approval of a Plan of Subdivision under Section 51 of the *Planning Act* shall be addressed in the subdivision agreement. With respect to all other development applications, the development charge will be collected at the time of issuance of the first building permit. The charges may also be subject to early or late payment agreements entered into by the City and an owner under s.27 of the DCA, 1997.

### **5.3.5 Indexing**

Indexing of the development charges will be undertaken annually (January 1<sup>st</sup>) on a mandatory basis in accordance with the Statistics Canada Quarterly, Construction Price Statistics.

## **5.4 Other Development Charge By-law Provisions**

It is recommended that:

### **5.4.1 Categories of Services for Reserve Fund and Credit Purposes**

The development charge collections be allocated into three separate reserve funds for Sanitary Sewer Services, Water Services and Studies respectively.

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### **5.4.2 By-law In-force Date**

A by-law under DCA, 1997 comes into force on the day after which the by-law is passed by Council, unless Council elects to provide for an in force date after the date of passage.

## **5.5 Other Recommendations**

The following recommendations are put forth for consideration by Council for the City of Kawartha Lakes:

THAT Kawartha Lakes City Council approve the capital project listing set out in Table 4-1 the City of Kawartha Lakes Area-Specific Development Charge Background Study – Lindsay South East Development Area dated July 4, 2013 as amended, subject to annual review during the capital budget process.

THAT the City of Kawartha Lakes Area-Specific Development Charge Background Study – Lindsay South East Development Area dated July 4, 2013 as amended, be received and approved.

THAT Kawartha Lakes City Council confirm no further public meetings are required on the matter;

THAT a DC By-Law be approved by Kawartha Lakes City Council that adopts the recommended rates and policies provided in the draft DC By-Law within Appendix C of the Area Specific Development Charges Background Study – Lindsay South East Development Area dated July 4, 2013 as amended.

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## **APPENDIX A**

### **LINDSARY SOUTHEAST AREA DEVELOPMENT RATE STUDY, PREPARED BY AECOM CANADA LTD**

May 8, 2013 (**Updated September 6, 2013**)

**Mr. Andrew Grunda**

Principal  
Watson & Associates Economists Ltd.  
Plaza Three  
101-2000 Argentina Road  
Mississauga, Ontario, L5N 1V9

Dear Mr. Grunda:

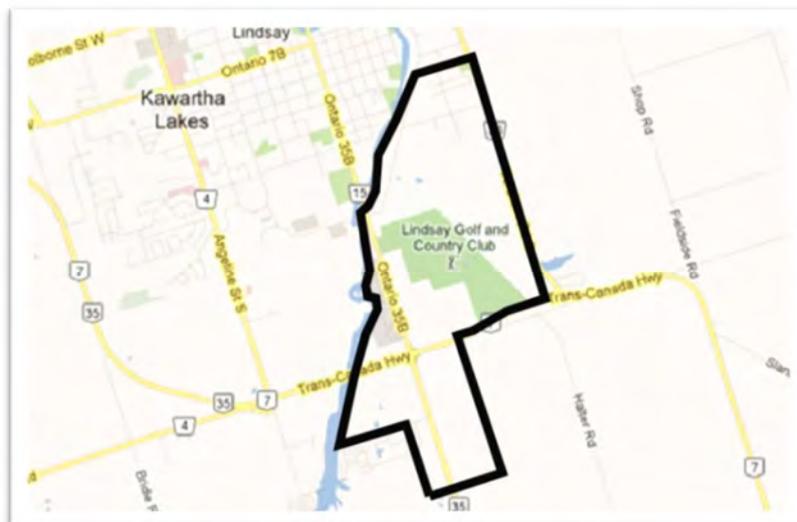
**Project No: 60270252**

**Regarding: Lindsay Southeast Area Development Rate Study**

## 1. Introduction

AECOM has been retained by CN Watson to undertake a water and sanitary sewer servicing analysis for the southeast development area of the community of Lindsay in the City of Kawartha Lakes. The purpose of the engineering analysis is to identify the infrastructure improvements required to service the development of the south-east development area of Lindsay. Infrastructure improvements include upgrades to existing sanitary sewer and water distribution systems as well as the expansion of new sewers and watermains required to service planned development areas.

The results of AECOM's analysis will be utilized by CN Watson to update the Development Charge Background Study for the Southeast Development Area of Lindsay. The limits of the south-east area of Lindsay are identified in Figure 1.



**Figure 1 - SE Development Area Limits**

## 2. Review of Background Information

AECOM has reviewed the following information provided by the City of Kawartha Lakes and CN Watson as background information to this assignment:

- City of Kawartha Lakes Growth Management Strategy and Municipal Master Plan Project,
- As-built pipe data for the sanitary sewers constructed along Logie Street;
- MOE Certificate of Approval Sewage # 3-0043-99-006 for the George Street Sanitary Sewage Pumping Station with a rated capacity of 69.1 L/sec at a TDH of 14.07m;
- Waterside Acres MOE C of A;
- Country Club Estates MOE C of A;
- Logie Street – Sanitary Sewer System, March 2012;
- Logie Street sanitary sewer invert data;
- CKL Sewage Flow Estimates – new South East Sanitary Trunk Sewer Flows, Dec 2011 (preliminary)
- As-built drawings – Logie Street, Riverview to Kawartha Drive;
- As-built drawings – Logie Street, Profile Drawing;
- As-constructed drawings - Logie Street Easement, Hillside to Parkside;
- Logie Street Proposed Sanitary, Kawartha Drive to Hillside Drive; and
- Marked-up Drawing for SE Area Contributing Areas Update, Dec 2011 (preliminary)
- Lindsay Wastewater Collection System Modeling Study, dated September 2007 by TSH Associates
- Lindsay Sanitary Sewer System Southeast Quadrant – Review of Available Capacity in Existing Sewer System for New Development, dated August 2007 by TSH Associates
- City of Kawartha Lakes Public Works / Engineering Services Subdivision / Site Plan Development Guidelines & Technical Standards
- Development intensities and unit counts provided by City of the Kawartha Lakes.

## 3. Servicing Scenarios

Three servicing scenarios have been considered in AECOM's review of the water distribution and sanitary sewer system in the southeast area of Lindsay. The three scenarios are described as follows:

- Scenario 1: Full Development within Lindsay Settlement Boundary (Area E1 on attached Drawings / Maps 3-1 and 3-2).
- Scenario 2: Full Development within Lindsay Settlement Boundary as well as the lands east of the Lindsay Settlement Boundary to Veralum Road and south to Highway 7 (Area E2 on attached Drawings / Maps 3-1 and 3-2). (E1 + E2)
- Scenario 3: Full Development within Lindsay Settlement Boundary, the lands east of the Lindsay Settlement Boundary to Veralum Road and south to Highway 7, as well as the lands along the Lindsay St corridor south of Highway 7 (Area E3 on attached Drawings / Maps 3-1 and 3-2). (E1 + E2 + E3)

## 4. Sanitary Sewer Servicing

### 4.1 Population Density and Flow Rate Assumptions

The following population density and flow rate assumptions have been applied in the preparation of this report:

**Table 1 - Southeast Development Area Servicing Assumptions**

Item	Density	Flow Rate
<b>Residential</b>	2.3 persons / unit <sup>1</sup> 40 units / gross ha for single family / semi-detached dwellings where # of units is unknown <sup>1</sup>	450 L/c/d <sup>1</sup>
<b>Commercial</b>	65% Coverage for Areas > 5.0ha <sup>2</sup> 100% Coverage for Areas < 5.0ha <sup>2</sup>	0.40 L/s/ha <sup>1</sup>
<b>Institutional</b>	65% Coverage for Areas > 5.0ha <sup>2</sup> 100% Coverage for Areas < 5.0ha <sup>2</sup>	0.32 L/s/ha <sup>1</sup>
<b>Infiltration from Contributing Areas</b>	-	(22.5 cub.m/gross ha/day) 0.26 L/s/ha <sup>1</sup>

Notes: 1. City of Kawartha Lakes Public Works / Engineering Services Subdivision / Site Plan Development Guidelines & Technical Standards  
 2. Provided by CN Watson Associates

### 4.2 Servicing Scenarios

Three servicing scenarios have been considered in AECOM's review of the Lindsay sanitary sewer system in the southeast area of Lindsay.

#### 4.2.1 Scenario 1: Full Development within Lindsay Settlement Boundary

Area E1, identified on Map 3-1, includes all lands to be developed within the southeast area of Lindsay tributary to the George St SPS. The development densities, land use and areas have been provided to AECOM by the City of Kawartha Lakes. Two trunk sewer systems exist within Area E1, described as follows:

- The Southeast (SE) Trunk sewer is located along Logie Street right-of-way south of the George St SPS. Approximately 814m of the SE Trunk was constructed from the George St SPS south along Logie Street to MH 12A at the north intersection of Deacon Crescent in order to service the Country Club Estates development in Area 1-7. The SE Trunk is to be ultimately extended approximately 726m south on Logie and Lindsay Streets, as noted on Map 3-1.

The SE Trunk sewer discharges directly to the George Street SPS, which in turn discharges via a 250mm dia forcemain to a trunk sewer within the Ridout St SPS contributing areas at MH OOC on Parkside Drive. The trunk sewer downstream of MH OOC is routed along a former railway easement as well as the Logie St right-of-way, and ultimately discharges to the Ridout St SPS by means of a siphon under the Scugog River at Riverview Road. Approximately 361m of the downstream trunk sewer, between MH's 5A and ER, was upgraded under CKL Contract 2009-61-CT.

- The South (S) Trunk sewer is located within the Lindsay Street right-of-way north of Highway 7. The S Trunk has been identified to convey flows south to a future pumping station located

near the intersection of Highway 7 and Lindsay St. A future forcemain is identified to discharge to the SE Trunk approximately 300m south of the intersection of Logie and Lindsay Streets.

**4.2.2 Scenario 2: Scenario 1 + Full Development within Area E2**

As depicted on Map 3-1, Area E2 is described as the lands east of the Lindsay Settlement Boundary to Veralum Road and south to Highway 7. The total land area is 87.89ha and is accounted for as residential land use. Area E2 is to be serviced by the East-Southeast (ESE) trunk sewer, located along the west limit of E2, within an easement formerly occupied by railway tracks. The ESE trunk sewer is identified as ultimately discharging to the SE Trunk at MH 5B. At the request of the City, we have considered an alternative scenario whereby flows for E2 are routed along Maguire St and discharged to MH20A on Logie Street.

**4.2.3 Scenario 3: Scenario 2 + Full Development within Area E3**

Map 3-1 also identifies Area E3 as the lands along the Lindsay St corridor south of Highway 7. The total area is 119.32ha and is accounted for as both residential and commercial land use. Area E3 is identified as tributary to the future pumping station located near the intersection of Highway 7 and Lindsay Street.

**4.3 Summary of Capacity Analysis Scenario 1**

**4.3.1 Design Flow Summary**

Scenario 1 results in a peak flow of 91.7 L/s to the George Street pumping station. The peak flow to the future pumping station which is to be located near the intersection of Highway 7 and Lindsay Street is calculated to be 30.7 L/s. Flows from the future pumping station are designated to discharge to the SE Trunk approximately 300m south of the intersection of Lindsay and Logie Streets. Calculations supporting the peak flow values are attached in Appendix A.

**4.3.2 Capacity Constraints for Trunk Sewer Downstream of MH OOC**

Based on the record information available, AECOM was able to assess capacity constraints in the existing sanitary sewer downstream of the George Street SPS forcemain connection at MH OOC. Scenario 1 results in one surcharged pipe length downstream of MH OOC.

**Table 2 – Summary of Surge Pipe Lengths Resulting from Scenario 1**

U/S MH	D/S MH	Ex Pipe Length / Material / Size	Location of Deficient Pipe Length
IIX	IIW	52m of 400mm AC	Logie Street (106% Full)
IIW	IIV	39m of 400mm AC	Logie Street (96% Full, Requires Upgrade in Concert with U/S Pipe Length)
IIV	IIU	35m of 400mm AC	Logie Street (85% Full, Requires Upgrade in Concert with U/S Pipe Length)
IIU	5A	19m of 400mm AC	Logie Street (61% Full, Requires Upgrade in Concert with U/S Pipe Length)

Upsizing the surcharged 400mm dia pipe to a 450mm dia pipe at equivalent depth and grade to existing conditions resolves the capacity constraint. We note that three downstream 400mm dia pipes require upsizing as well in concert with the replacement of the upstream surcharged pipe

length. A detailed design exercise shall be completed to confirm the alignment, depth and grade of the section of sewers to be replaced to meet the capacity demands of Scenario 1.

#### **4.3.3 Capacity Constraints for Constructed Portion of SE Trunk Sewer**

Scenario 1 does not result in any capacity issues for the constructed portion of the SE Trunk sewer on Logie Street.

#### **4.3.4 Capacity Constraints for Future SE Trunk Sewer Extension**

The SE Trunk Sewer has been constructed to SAN MH 12A on Logie Street, near the northerly intersection of Logie Street with Deacon Cres. The SE Trunk Sewer has been designed to extend south on Logie to Lindsay St by Henderson Paddon & Associates Ltd, however we understand that this section of trunk sewer has not been constructed to date. The extension of the SE Trunk from MH12 to MH35A at the intersection of Logie and Lindsay Streets has been previously sized by Henderson Paddon as a 375mm dia sewer. The 375mm dia sewer size has been maintained in AECOM's analysis.

The SE Trunk also needs to be extended south on Lindsay Street approximately 300m to service Areas 1-21 and 1-6 as well as to accept flows from the future Highway 7 SPS forcemain servicing Areas 1-1 through 1-5 inclusive. The extension of the SE Trunk sewer on Lindsay Street, approximately 300m south of MH35A, has been preliminarily sized by AECOM as part of this Study as a 300mm sewer at 0.20% grade. The 300mm dia pipe does not have capacity for future flows from Area E3. In addition, during detailed design, the available cover over the proposed 300mm dia sewer pipe shall be checked against the existing / future road profile of Lindsay Street.

Scenario 1 does not result in any capacity issues for the future extension of the SE Trunk.

### **4.4 Summary of Capacity Analysis Scenario 2**

#### **4.4.1 Design Flow Summary**

Scenario 2 results in a peak flow of 230.3 L/s to the George Street pumping station. The peak flow to the future pumping station which is to be located near the intersection of Highway 7 and Lindsay Street is maintained at 30.7 L/s. Calculations supporting the peak flow values are attached in Appendix A.

#### **4.4.2 Capacity Constraints for Trunk Sewer Downstream of MH OOC**

Scenario 2 does result in the surcharging of the trunk sanitary sewer pipe lengths downstream of the George St SPS forcemain connection to the Logie Street trunk sewer at MH OOC. A total of sixteen existing pipe lengths are surcharged. The sewer improvements required to accommodate Scenario 1 are also surcharged for Scenario 2. The surcharged pipe lengths are identified in the sanitary sewer design sheets appended to this Report.

In August 2007, TSH Associates estimated the capacity of the existing 300mm dia inverted siphon (MH KKF to KKG) to be 151 L/s as part of the study *Lindsay Sanitary Sewer System Southeast Quadrant - Review of Available Capacity in Existing Sewer System for New Development*. The peak flows to the Siphon for Scenario 2 are calculated to be 282.8 L/s, resulting in the siphon operating at

187.3% capacity. TSH's 2007 Study noted that twinning the existing siphon with a new 450mm dia siphon would increase capacity to 432 L/s.

We note that further investigations are required to confirm the loadings from the areas contributing sanitary sewage to the siphon that are outside the limits of this study area. We recommend that the City consider implementing a flow monitoring program upstream the siphon to assist in evaluation of changing peak flows and the assessment for the ultimate timing of upgrades to the siphon.

#### **4.4.3 Capacity Constraints for Constructed Portion of SE Trunk Sewer**

At the request of the City, AECOM has assessed two alternatives for connecting Area E2 to the SE Trunk Sewer.

Alternative A considers that a new ESE trunk will be routed along the west limit of Area E2 (former railway corridor) and ultimately connected to the SE trunk at MH 5B. MH 5B is located near the intersection of Logie Street and the Mary Street right-of-way. For Alternative A, three lengths (198.5m) of constructed 525mm dia sewer pipe between MH5B and MH2A are surcharged.

Alternative B considers that the new ESE trunk will be routed through Development Area 1-7 along the future Maguire Street right-of-way to future MH 20A. As with Alternative A, the constructed 525mm dia sewers from MH 5A to MH 2A on Logie Street are surcharged. The 375mm dia sewers constructed from MH 12A to MH 5A on Logie Street are also surcharged.

#### **4.4.4 Capacity Constraints for Future SE Trunk Sewer Extension**

As noted in Section 4.4.3 above, AECOM has assessed two alternatives for connecting Area E2 to the SE Trunk Sewer.

For Alternative A, there are no capacity issues for the future extension of the SE Trunk.

For Alternative B, the 375mm dia sewer designed by Henderson Paddon from MH20A through to MH 12A does not have sufficient capacity to accommodate the additional flows from E2 via Maguire Street.

In order to accommodate the sewage flows from E2, the Logie Street trunk sewer would require upsizing. A detailed design exercise for the Logie Street trunk sewers shall be completed if Alternatives A or B are to be ultimately considered by the City.

### **4.5 Summary of Capacity Analysis Scenario 3**

#### **4.5.1 Design Flow Summary**

Scenario 3 results in a peak flow of 332.3 L/s to the George Street pumping station. The peak flow to the future pumping station which is to be located near the intersection of Highway 7 and Lindsay Street is increased by 102.0 L/s to 132.7 L/s. Calculations supporting the peak flow values are attached in Appendix A.

#### **4.5.2 Capacity Constraints for Trunk Sewer Downstream of MH OOC**

Scenario 3 does result in the surcharging of pipe lengths downstream of the George St SPS forcemain connection to a trunk sewer at MH OOC. A total of seventeen existing pipe lengths are surcharged. Sanitary sewer design sheets appended to this Report identify the surcharged pipe lengths. As with Scenario 2, the existing 300mm dia inverted siphon at the Scugog River does not have sufficient capacity for Scenario 3 and will require capacity improvements.

#### **4.5.3 Capacity Constraints for Constructed Portion of SE Trunk Sewer**

The additional flows from Area E3, tributary to the Highway 7 SPS and ultimately the SE Trunk, result in the surcharging of all 375mm dia and 525mm dia sewers installed to date.

#### **4.5.4 Capacity Constraints for Future SE Trunk Sewer Extension**

Scenario 3 also results surcharging of the future extension of the SE Trunk designed as 300mm dia and 375mm dia sewers.

### **4.6 Next Steps for Sanitary Sewer Infrastructure Improvements**

We recommend that the City consider completing additional investigations into alternative approaches for satisfying the sanitary servicing needs for Scenarios 2 and 3. Options that may be considered include the following:

- Installing a new forcemain from the George Street pumping station that outlets to a trunk sewer system that is not tributary to the Logie Street sewers which ultimately flow to the Ridout Street pumping station.
- Installing a new forcemain as part of future improvements to the George Street pumping station that outlets to an alternative trunk sewer system (existing or future)
- Providing capacity improvements for the Logie Street trunk sewer to the Ridout Station pumping station.
- Providing detention storage well(s) at the George Street pumping station.

## **5. Pumping Stations**

### **5.1 Existing Conditions – George Street SPS**

#### **5.1.1 Existing Station**

The existing George Street SPS was constructed by the Owner for the Country Club Estates development in Area 1-7. The existing station consists of a 3m diameter, 9.3m deep concrete wet well. The station contains two submersible sewage pumps each rated at 69.1 L/s @ 14.07 m TDH according to the MOE C of A. The station pumps sewage via a 250 mm diameter SDR26 PVC forcemain approximately 317 m long discharge into MH OOC located on Parkside Drive. The peak capacity of the existing wet well is estimated at 73 L/s based upon the following considerations:

- The MOE Design guideline minimum volume required for pump cycling period of 10 minutes for the size of current pump which is less than 50 kW;

- The vertical separation between pump and control points;
- The separation required for ultrasonic and backup float switch; and
- The inlet sewer elevation.

### **5.1.2 Existing Forcemain**

The existing forcemain has a capacity of 123 L/s. The forcemain can safely handle a velocity of 2.5 m/s, which is normally considered the maximum permitted velocity if working pressure rating is not exceeded. The following are theoretical estimates at 2.5 m/s velocity through the forcemain:

- Operating pressure (TDH) = 23.6 m
- Surge pressure = 82.5 m
- Working pressure rating = 60.8 m
- Pressure rating = 112 m

Since working pressure rating is greater than the operating pressure and pressure rating is greater than operating pressure we can conclude that the existing forcemain can handle a peak flow of 123.4 L/s estimated from the maximum velocity and cross-sectional area of the forcemain pipe.

## **5.2 Future Expansion and Upgrades – George Street SPS**

### **5.2.1 Scenario 1**

The peak flows to the George Street SPS for Scenario 1 are 91.7 L/s, as per the calculations attached in Appendix A. The peak flows exceed the rated capacity of the station, and therefore expansion / upgrades are required in order to accommodate the planned development within contributing Area E1.

In order to accommodate the ultimate peak flows of 91.7 L/s, the construction of a second pumping station is necessary adjacent to the existing George St SPS. The new pumping station's wet well is to be hydraulically connected with the wet well for the second pumping station. The existing station's configuration would remain as constructed, however modifications to pumping station controls will be necessary to coincide with the controls of the new station. The second new station would be constructed with and sized for 22.6 L/s at a TDH of 14 m. The new station would be connected to the existing 250mm dia forcemain.

### **5.2.2 Scenarios 2 and 3**

The peaks flows to the George Street SPS for Scenarios 2 and 3 are 230.3 L/s and 332.3 L/s respectfully. As noted in Section 4 of this Report, Scenarios 2 and 3 result in surcharging of significant lengths of trunk sewers within the drainage areas tributary to the George St and Ridout Street pumping stations.

We recommend that the City protect for the provision of future pipework along existing / future roads and servicing corridors to service areas E2 and E3 in the future. As such, additional discussions are required with City staff in order to refine scope of future alternatives for servicing Areas E2 and E3 and identify which corridors should be protected for the future installation of pipes to service E2 and

E3. The servicing options potentially include constructing a dedicated pumping station / forcemain(s) for Areas E2 and/or E3.

### **5.3 Future Highway 7 SPS**

#### **5.3.1 Phase 1 – Capacity for Development of Area E1**

For Scenarios 1 and 2, Areas 1-1 through 1-5 inclusive contribute sewage flow to the future pumping station to be located near the intersection of Highway 7 and Lindsay Streets. The peak flow to the future station is calculated to be 30.7 L/s, as per the calculations attached in Appendix A. The forcemain from the station to MH38A at the most upstream limit of the SE Trunk has been preliminarily sized as a 150mm dia forcemain.

#### **5.3.2 Phase 2 – Expansion of Capacity for Development of Area E3**

The location of the Highway 7 pumping station has been shown at the north-west corner of the intersection of Lindsay Street and Highway 7. Prior to advancing discussion regarding future expansion of the Highway 7 SPS, further discussions and investigations as to the preferable location of the future station location should be completed given the capacity constraints that exist in the receiving SE Trunk, as noted in Section 4 of this Report.

### **5.4 Future Expansion and Upgrades – Ridout Street SPS**

Please note that the servicing scenarios do not include an assessment of capacity constraints at and/or downstream of the Ridout Street SPS. The need to assess capacity constraints as well as required improvements at the Ridout Street SPS are not included as part of AECOM's scope of work for this assignment.

## **6. Cost Estimate for Required Sanitary Sewer Infrastructure Improvements**

A construction cost estimate has been prepared for the new trunk sewers, forcemains and pumping station improvements required to accommodate flows resulting from **Scenario 1**. The construction cost estimates are attached in Appendix C and costs are summarized in Table 3. Please note the following with respect to the items carried in the cost estimate.

### **6.1.1 Improvements to Existing Trunk Sewer Downstream of MH OOC**

Approximately 145m of existing 400mm dia sewer is to be replaced with new 450mm dia sewers in order to accommodate the peak flows resulting from the full development of Scenario 1. For cost estimating purposes, we have accounted for an equivalent length of 450mm dia sewer and MH structures as compared to existing conditions. Detailed design of the new sewers may result in marginally different quantities as the new sewer will not likely be constructed along the existing sewer alignment.

**6.1.2 Future Southeast Trunk Sewer Extension**

The extension of the SE Trunk from MH12 to MH35A at the intersection of Logie and Lindsay Streets has been previously sized by Henderson Paddon as a 375mm dia sewer. The 375mm dia sewer has been maintained.

The extension of the SE Trunk sewer on Lindsay Street, approximately 300m south of MH35A, has been preliminarily sized by AECOM as part of this Study as a 300mm sewer at 0.20% grade. The 300mm dia pipe does not have capacity for future flows from Area E3. In addition, during detailed design, the available cover over the proposed 300mm dia sewer pipe shall be checked against the existing / future road profile of Lindsay Street.

**6.1.3 Future South Trunk Sewer**

The South Trunk sewer on Lindsay Street has been preliminarily sized by AECOM as part of this Study as a 250mm sewer at 0.50% grade. The total length of sewer is approximately 750m.

**6.1.4 Future Highway 7 SPS and Forcemain**

AECOM has carried a cost for the future Highway 7 SPS as part of this study. The peak flow to the station is 28.9 L/s. The forcemain, discharging to the SE Trunk Sewer Extension on Lindsay Street, has been preliminarily sized by AECOM as part of this Study as a 150mm PVC forcemain.

Please see Section 5 for additional discussion regarding the configuration of the future station.

**6.1.5 Future George Street Pumping Station Improvements**

For Scenario 1, the capacity of the George Street SPS is required to be increased 22.6 L/s to accommodate the anticipate flows from Area E1. Please see Section 5 for additional discussion relating to the planned improvements to the existing pumping station. Please refer to Appendix C for additional cost estimate breakdowns.

We have not included any costs as part of the attached Cost Estimate for sanitary sewer infrastructure (sewers, forcemains, pumping stations) constructed to service lands with Area E1 to date.

**Table 3 – Cost Summary of Required Sanitary Infrastructure Improvements for Scenario 1**

	Item	Cost
1	Logie Street Trunk Sewer Improvements	\$101,125
2	Southeast Trunk Extension (Future)	\$376,400
3	South Trunk Extension (Future)	\$330,500
4	New Highway 7 SPS	\$871,250
5	George St SPS Improvements	\$913,750
6	Contingencies, Design / CA Costs, and HST	\$1,360,532
	<b>TOTAL</b>	<b>\$3,953,557</b>

## 7. Watermain Servicing

### 7.1 Population Density and Flow Rate Assumptions

The following population density and flow rate assumptions have been applied in the preparation of this report:

Table 6 - Southeast Development Area Water Servicing Assumptions		
Item	Density	Flow Rate
Residential	2.3 persons / unit <sup>3</sup> 40 units / gross ha for single family / semi-detached dwellings where # of units is unknown <sup>3</sup>	390 L/c/d <sup>1</sup> Max Hour Peaking Factor = 2.7 Max Hour Unit Flow Rate = 1.121 L/sec/gross ha
Commercial	65% Coverage for Areas > 5.0ha <sup>2</sup> 100% Coverage for Areas < 5.0ha <sup>2</sup>	0.40 L/s/ha <sup>3</sup>
Institutional	65% Coverage for Areas > 5.0ha <sup>2</sup> 100% Coverage for Areas < 5.0ha <sup>2</sup>	0.32 L/s/ha <sup>3</sup>

Notes: 1. From Table B.1.2 – Municipal Servicing Master Plan Study – Future Water Design Criteria  
 2. Provided by CN Watson Associates  
 3. City of Kawartha Lakes Public Works / Engineering Services Subdivision / Site Plan Development Guidelines & Technical Standards

### 7.2 Servicing Scenarios

Three servicing scenarios have been considered in AECOM's review of the Lindsay water distribution system in the southeast area of Lindsay.

#### 7.2.1 Scenario 1 : Development within Lindsay Settlement Boundary (Area E1)

The watermain improvements for the development of E1 are identified on Map 3-2 and generally consist of the extension of a 300mm watermain along Lindsay Street South from the existing 450mm AC watermain located at the intersection of Lindsay Street South and Mary Street. The watermain would cross under the Scugog River and provide a connection to the existing 300mm PVC watermain located at the intersection of Logie Street and Lindsay Street South. The 300mm watermain should be extended east along the north side of Hwy 7 to provide fire protection coverage along the south limit of the urban and boundary and facilitate looping of the water distribution system during the development of the lands in the urban area.

We note that the servicing of E1 will require the construction of a 300mm watermain along Lindsay Street between Mary Street and Hwy 7. There is an existing 100mm watermain along Lindsay Street between Mary Street and the Home Hardware store.

#### 7.2.2 Scenario 2 : Scenario 1 + Development of Area E2

Area E2, if developed, could be serviced by a 300mm watermain that would be extended from the 300mm watermain, located on the north side of Hwy 7 at the east limit of development area 1-1, to the existing 400mm AC watermain located on the Logie Street. The new watermain would be located in the north boulevard of Hwy 7 and the rail / trail corridor located along the west side of Area E2. This alignment optimizes the length of the watermain required to service E2 and would improve the looping of the watermain network in the southeast area of Lindsay by providing connections to planned / existing developments.

### **7.2.3 Scenario 3 : Scenario 2 + Development of Area E3**

Area E3, if developed, would be serviced by means of an extension of the 300mm watermain on Lindsay Street South.

### **7.3 Estimate Water Demands**

The water demands were estimated using the unit flow rates and density assumptions identified in Table 6. The estimated water demands for all of the development areas identified on Areas E1, E2 and E3 on Map 3-2 are identified on Table 1-1, attached as Appendix D to this Report.

We have also prepared Table 1-2, attached as Appendix D to this Report, for the purpose of correlating the Area Reference No's identified in CN Watsons spreadsheet entitled Kawartha Lakes Anticipated Development with the area reference numbers identified on AECOM's Map 3-2. We note that some of the development areas have changed to reflect land areas as measured on the lot fabric base plan provided by COKL.

A simple hydraulic analysis of the distribution system was completed to check if the 300mm watermain was of sufficient diameter to supply the fire flow demands in addition to the peak day domestic demands for benefiting area E1. It was concluded that the 300mm watermain would be of sufficient size to address the peak demand condition.

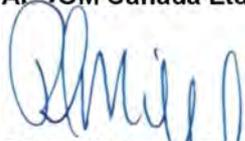
Please refer to the technical memorandum in Appendix E for information on the approach taken to complete the capacity analysis of the watermain extension being considered for the servicing of Benefiting Area E1.

### **7.4 Construction Cost Estimate**

A construction cost estimate has been prepared for the servicing of Benefiting Area E1. The estimated cost of the linear watermain infrastructure required to service development area E1 is \$2,701,463 and the details in developing this cost estimate are included in Appendix C.

Please do not hesitate to contact the undersigned if you have any questions with the information presented in this final report.

Sincerely,  
**AECOM Canada Ltd.**



Peter Middaugh, P.Eng.  
Senior Project Manager  
[peter.middaugh@aecom.com](mailto:peter.middaugh@aecom.com)

List of Attachments

1. Map 3-1 Sanitary Service Area Plan
2. Map 3-2 Water Service Area Plan
3. Appendix A – Flow Generation Calculations
4. Appendix B – Sanitary Sewer Capacity Check Sheets
5. Appendix C – Construction Cost Estimates
6. Appendix D – Tables 1-1 and 1-2
7. Appendix E - Hydraulic Analysis of 300mm dia Watermain

Encl.

cc:

Juan Rojas, COKL

Sara Beukeboom, COKL

Meseret Aniyeh, AECOM

Michael Harris, AECOM

File

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- represents Consultant's professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to Consultant which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
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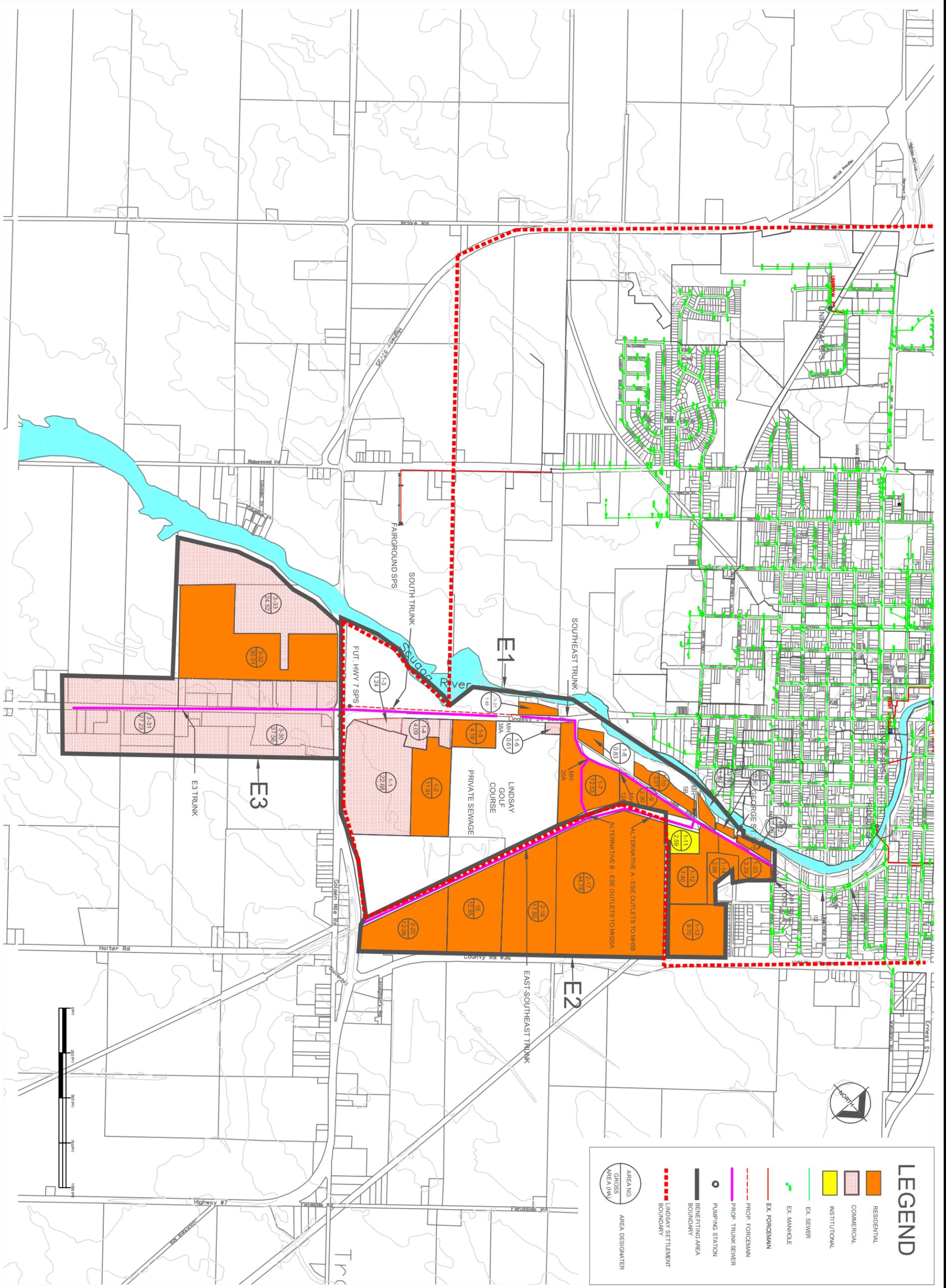
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**LEGEND**

- RESIDENTIAL
- COMMERCIAL
- INSTITUTIONAL
- EX. SEWER
- EX. MANHOLE
- EX. FORCEMAIN
- PROP. FORCEMAIN
- PROP. TRUNK SEWER
- PUMPING STATION
- BENEFITTING AREA
- BOUNDARY
- LINDSAY SETTLEMENT BOUNDARY
- AREA NO.
- GROSS AREA (HA)
- AREA DESIGNATOR

**AECOM**

PROJECT  
**LINDSAY SOUTHEAST AREA DEVELOPMENT RATE STUDY**

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**Watson & Associates  
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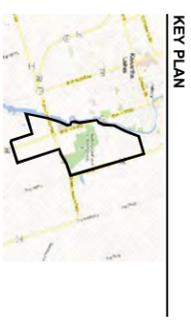
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REGISTRATION

**ISSUEREVISION**

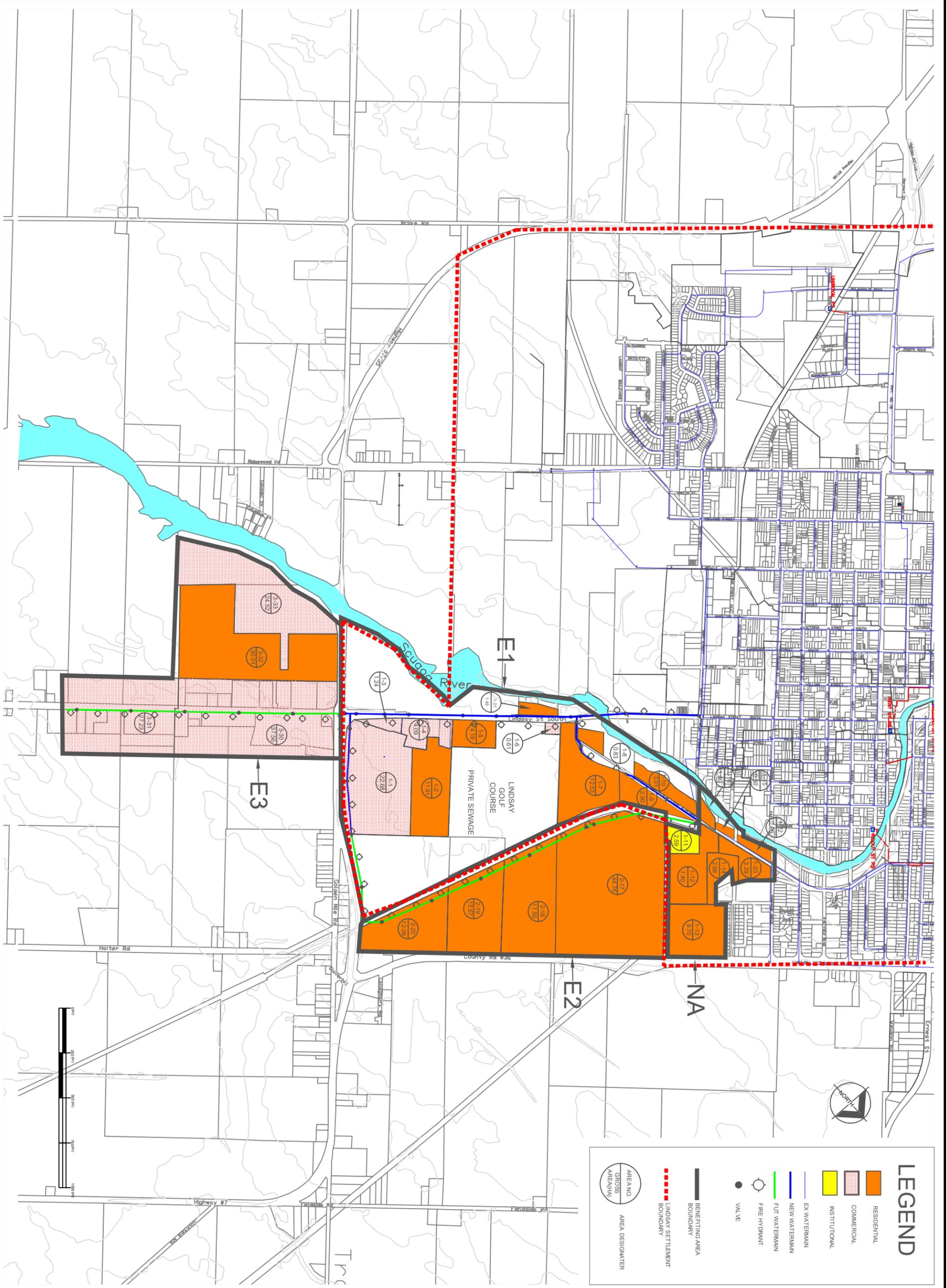
5	05 SEPT 2013	FINAL SUBMISSION UPDATED
4	03 SEPT 2013	FINAL SUBMISSION UPDATED
3	08 MAY 2013	FINAL SUBMISSION
2	02 APR 2013	SE DEV RATE STUDY
1	22 MAR 2013	SE DEV RATE STUDY
0	18 JAN 2013	FOR REVIEW
IR	DATE	DESCRIPTION



PROJECT NUMBER  
60270252

SHEET TITLE  
SANITARY SERVICE AREA PLAN

SHEET NUMBER  
MAP 3-1



### LEGEND

- RESIDENTIAL
- COMMERCIAL
- INSTITUTIONAL
- EX WATERMAIN
- NEW WATERMAIN
- FUT WATERMAIN
- FIRE HYDRANT
- VALVE
- BENEFITTING AREA BOUNDARY
- LINDSAY SETTLEMENT BOUNDARY
- AREA NO. GROSS AREA/HA
- AREA DESIGNATION

# AECOM

**PROJECT**  
 LINDSAY  
 SOUTHEAST AREA  
 DEVELOPMENT  
 RATE STUDY

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**REGISTRATION**

**ISSUEREVISION**

NO.	DATE	DESCRIPTION
4	05 SEPT 2013	FINAL SUBMISSION UPDATED
3	03 SEPT 2013	FINAL SUBMISSION UPDATED
2	08 MAY 2013	FINAL SUBMISSION
1	22 MAR 2013	SE DEV RATE STUDY
0	18 JAN 2013	FOR REVIEW
IR	DATE	DESCRIPTION

**KEY PLAN**



**PROJECT NUMBER**  
 60270252

**SHEET TITLE**  
 WATER SERVICE AREA PLAN

**SHEET NUMBER**  
 MAP 3-2

# Appendix A

Scenario 1

Date: September 5, 2013  
 Prepared By: Michael Harris  
 Checked By: Peter Middaugh



Design Criteria	
Average Flow per Capita (L/c/d)	450
Population Density (ppl/lot)	2.3
# of Lots per Hectare	40.0
Commercial Flow (L/s/Ha)	0.4
Industrial Flow (L/s/Ha)	0.4
Institutional Flow (L/s/Ha)	0.32
Infiltration (L/s/Ha)	0.26
Peaking Factor Minimum	1.5
Peaking Factor Maximum	3.8

(Apply when # of Lots are Unknown)

Peaking Factor =  $1 + (14/(4 + (Pop./1000)))^{1/2}$

Flows to George St SPS

Area No.	Zoning & Area (Ha)				# of Residential Units	Population	Cumulative Population	Avg. Res. Flow (L/s)	Peaking Factor	Cum. Res. Flow (L/s) (A)	Commerical		Institutional		Industrial		Cum. ICI Flow (L/s) (B)	Infiltration (L/s)	Cum. Infil. (L/s) (C)	Cum.TOTAL (L/s) (A+B+C)
	Residential	Commercial	Institutional	Industrial							Com. Area	Flow (L/s)	Cum. Area	Flow (L/s)	Cum. Area	Flow (L/s)				
1-6		0.61			0	0	0	0.0	3.80	0.0	0.61	0.24					0.2	0.2	0.2	0.4
1-7	9.79	1.18	1.56		132	304	304	1.6	3.80	6.0	1.18	0.47	1.56	0.50			1.2	3.3	3.4	10.6
1-8	0.83				12	28	331	1.7	3.80	6.6							1.2	0.2	3.6	11.4
1-9	2.90				223	513	844	4.4	3.80	16.7							1.2	0.8	4.4	22.3
1-10	3.01				240	552	1396	7.3	3.70	26.9							1.2	0.8	5.2	33.3
1-11			2.58		0	0	1396	7.3	3.70	26.9			2.58	0.83			2.0	0.7	5.8	34.8
1-12	7.40				110	253	1649	8.6	3.65	31.3							2.0	1.9	7.8	41.1
1-13	9.70				149	343	1992	10.4	3.59	37.2							2.0	2.5	10.3	49.5
1-14	2.98				42	97	2088	10.9	3.57	38.8							2.0	0.8	11.1	51.9
1-15	0.30				12	28	2116	11.0	3.57	39.3							2.0	0.1	11.1	52.5
1-16	1.00				40	92	2208	11.5	3.55	40.8							2.0	0.3	11.4	54.3
1-21	1.45				57	131	2339	12.2	3.53	43.0							2.0	0.4	11.8	56.8
1-22	0.90				35	81	2420	12.6	3.52	44.4							2.0	0.2	12.0	58.4
1-23	3.29				45	104	2523	13.1	3.51	46.1							2.0	0.9	12.9	61.0
					Total	1097														

Flows to Future Hwy 7 SPS (Ultimately to George St SPS)

Area No.	Zoning & Area (Ha)				# of Residential Units	Population	Cumulative Population	Avg. Res. Flow (L/s)	Peaking Factor	Cum. Res. Flow (L/s) (A)	Commerical		Institutional		Industrial		Cum. ICI Flow (L/s) (B)	Infiltration (L/s)	Cum. Infil. (L/s) (C)	Cum.TOTAL (L/s) (A+B+C)
	Residential	Commercial	Institutional	Industrial							Com. Area	Flow (L/s)	Cum. Area	Flow (L/s)	Cum. Area	Flow (L/s)				
1-1		22.68			0	0	0	0.0	3.80	0.0	14.74	5.90					5.9	5.9	5.9	11.8
1-2	11.91				183	421	421	2.2	3.80	8.3							5.9	3.1	9.0	23.2
1-3		1.24			0	0	421	2.2	3.80	8.3	1.24	0.50					6.4	0.3	9.3	24.0
1-4		4.09			0	0	421	2.2	3.80	8.3	4.09	1.64					8.0	1.1	10.4	26.7
1-5	4.19				63	145	566	2.9	3.80	11.2							8.0	1.1	11.5	30.7
					Total	246														

TOTAL FLOW TO GEORGE ST SPS	91.7
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Scenario 2

Date: September 5, 2013  
 Prepared By: Michael Harris  
 Checked By: Peter Middaugh



Design Criteria	
Average Flow per Capita (L/c/d)	450
Population Density (ppl/lot)	2.3
# of Lots per Hectare	40.0
Commercial Flow (L/s/Ha)	0.4
Industrial Flow (L/s/Ha)	0.4
Institutional Flow (L/s/Ha)	0.32
Infiltration (L/s/Ha)	0.26
Peaking Factor Minimum	1.5
Peaking Factor Maximum	3.8

(Apply when # of Lots are Unknown)

$$\text{Peaking Factor} = 1 + (14/(4 + (\text{Pop./1000}))^{1/2})$$

Flows to George St SPS

Area No.	Zoning & Area (Ha)				# of Residential Units	Population	Cumulative Population	Avg. Res. Flow (L/s)	Peaking Factor	Cum. Res. Flow (L/s) (A)	Commerical		Institutional		Industrial		Cum. ICI Flow (L/s) (B)	Infiltration (L/s)	Cum. Infil. (L/s) (C)	Cum.TOTAL (L/s) (A+B+C)	
	Residential	Commercial	Institutional	Industrial							Com. Area	Flow (L/s)	Cum. Area	Flow (L/s)	Cum. Area	Flow (L/s)					
1-6		0.61			0	0	0	0.00	3.80	0.00	0.61	0.24					0.24	0.16	0.16	0.40	
1-7	9.79	1.18	1.56		132	304	304	1.6	3.80	6.0	1.18	0.47	1.56	0.50			1.22	3.3	3.4	10.6	
1-8	0.83				12	28	331	1.73	3.80	6.56							1.22	0.22	3.63	11.40	
1-9	2.90				223	513	844	4.40	3.80	16.71							1.22	0.75	4.39	22.31	
1-10	3.01				240	552	1396	7.27	3.70	26.92							1.22	0.78	5.17	33.30	
1-11			2.58		0	0	1396	7.27	3.70	26.92			2.58	0.83			2.04	0.67	5.84	34.80	
1-12	7.40				110	253	1649	8.59	3.65	31.35							2.04	1.92	7.76	41.15	
1-13	9.70				149	343	1992	10.37	3.59	37.21							2.04	2.52	10.29	49.54	
1-14	2.98				42	97	2088	10.88	3.57	38.84							2.04	0.77	11.06	51.94	
1-15	0.30				12	28	2116	11.02	3.57	39.31							2.04	0.08	11.14	52.49	
1-16	1.00				40	92	2208	11.50	3.55	40.85							2.04	0.26	11.40	54.29	
2-17	44.76				1790	4118	6326	32.95	3.15	103.75							2.04	11.64	23.04	128.82	
2-18	17.50				700	1610	7936	41.33	3.05	126.22							2.04	4.55	27.59	155.84	
2-19	13.57				543	1248	9184	47.84	2.99	143.09							2.04	3.53	31.11	176.24	
2-20	12.06				482	1110	10294	53.61	2.94	157.74							2.04	3.14	34.25	194.03	
1-21	1.45				57	131	10425	54.30	2.94	159.45							2.04	0.38	34.63	196.12	
1-22	0.90				35	81	10505	54.7	2.93	160.5							2.0	0.2	34.9	197.4	
1-23	3.29				45	104	10609	55.3	2.93	161.8							2.0	0.9	35.7	199.6	
Total					4613																

Flows to Future Hwy 7 SPS (Ultimately to George St SPS)

Area No.	Zoning & Area (Ha)				# of Residential Units	Population	Cumulative Population	Avg. Res. Flow (L/s)	Peaking Factor	Cum. Res. Flow (L/s) (A)	Commerical		Institutional		Industrial		Cum. ICI Flow (L/s) (B)	Infiltration (L/s)	Cum. Infil. (L/s) (C)	Cum.TOTAL (L/s) (A+B+C)	
	Residential	Commercial	Institutional	Industrial							Com. Area	Flow (L/s)	Cum. Area	Flow (L/s)	Cum. Area	Flow (L/s)					
1-1		22.68			0	0	0	0.00	3.80	0.00	14.74	5.90					5.90	5.90	5.90	11.79	
1-2	11.91				183	421	421	2.19	3.80	8.33							5.90	3.10	8.99	23.22	
1-3		1.24			0	0	421	2.19	3.80	8.33	1.24	0.50					6.39	0.32	9.32	24.04	
1-4		4.09			0	0	421	2.19	3.80	8.33	4.09	1.64					8.03	1.06	10.38	26.74	
1-5	4.19				63	145	566	2.95	3.80	11.20							8.03	1.09	11.47	30.7	
Total					246																

TOTAL FLOW TO GEORGE ST SPS 230.3

Scenario 3

Date: September 5, 2013  
 Prepared By: Michael Harris  
 Checked By: Peter Middaugh



Design Criteria	
Average Flow per Capita (L/c/d)	450
Population Density (ppl/lot)	2.3
# of Lots per Hectare	40.0
Commercial Flow (L/s/Ha)	0.4
Industrial Flow (L/s/Ha)	0.4
Institutional Flow (L/s/Ha)	0.32
Infiltration (L/s/Ha)	0.26
Peaking Factor Minimum	1.5
Peaking Factor Maximum	3.8

(Apply when # of Lots are Unknown)

$$\text{Peaking Factor} = 1 + (14/(4 + (\text{Pop./1000}))^{1/2})$$

Flows to George St SPS

Area No.	Zoning & Area (Ha)				# of Residential Units	Population	Cumulative Population	Avg. Res. Flow (L/s)	Peaking Factor	Cum. Res. Flow (L/s) (A)	Commerical		Institutional		Industrial		Cum. ICI Flow (L/s) (B)	Infiltration (L/s)	Cum. Infiltr. (L/s) (C)	Cum.TOTAL (L/s) (A+B+C)	
	Residential	Commercial	Institutional	Industrial							Com. Area	Flow (L/s)	Cum. Area	Flow (L/s)	Cum. Area	Flow (L/s)					
1-6		0.61			0	0	0	0.00	3.80	0.00	0.61	0.24					0.24	0.16	0.16	0.40	
1-7	9.79	1.18	1.56		132	304	304	1.6	3.80	6.0	1.18	0.47	1.56	0.50			1.22	3.3	3.4	10.6	
1-8	0.83				12	28	331	1.73	3.80	6.56							1.22	0.22	3.63	11.40	
1-9	2.90				223	513	844	4.40	3.80	16.71							1.22	0.75	4.39	22.31	
1-10	3.01				240	552	1396	7.27	3.70	26.92							1.22	0.78	5.17	33.30	
1-11			2.58		0	0	1396	7.27	3.70	26.92			2.58	0.83			2.04	0.67	5.84	34.80	
1-12	7.40				110	253	1649	8.59	3.65	31.35							2.04	1.92	7.76	41.15	
1-13	9.70				149	343	1992	10.37	3.59	37.21							2.04	2.52	10.29	49.54	
1-14	2.98				42	97	2088	10.88	3.57	38.84							2.04	0.77	11.06	51.94	
1-15	0.30				12	28	2116	11.02	3.57	39.31							2.04	0.08	11.14	52.49	
1-16	1.00				40	92	2208	11.50	3.55	40.85							2.04	0.26	11.40	54.29	
2-17	44.76				1790	4118	6326	32.95	3.15	103.75							2.04	11.64	23.04	128.82	
2-18	17.50				700	1610	7936	41.33	3.05	126.22							2.04	4.55	27.59	155.84	
2-19	13.57				543	1248	9184	47.84	2.99	143.09							2.04	3.53	31.11	176.24	
2-20	12.06				482	1110	10294	53.61	2.94	157.74							2.04	3.14	34.25	194.03	
1-21	1.45				57	131	10425	54.30	2.94	159.45							2.04	0.38	34.63	196.12	
1-22	0.90				35	81	10505	54.7	2.93	160.5							2.0	0.2	34.9	197.4	
1-23	3.29				45	104	10609	55.3	2.93	161.8							2.0	0.9	35.7	199.6	
Total					4613																

Flows to Future Hwy 7 SPS (Ultimately to George St SPS)

Area No.	Zoning & Area (Ha)				# of Residential Units	Population	Cumulative Population	Avg. Res. Flow (L/s)	Peaking Factor	Cum. Res. Flow (L/s) (A)	Commerical		Institutional		Industrial		Cum. ICI Flow (L/s) (B)	Infiltration (L/s)	Cum. Infiltr. (L/s) (C)	Cum.TOTAL (L/s) (A+B+C)	
	Residential	Commercial	Institutional	Industrial							Com. Area	Flow (L/s)	Cum. Area	Flow (L/s)	Cum. Area	Flow (L/s)					
1-1		22.68			0	0	0	0.00	3.80	0.00	14.74	5.90					5.90	5.90	5.90	11.8	
1-2	11.91				183	421	421	2.19	3.80	8.33							5.90	3.10	8.99	23.2	
1-3		1.24			0	0	421	2.19	3.80	8.33	1.24	0.50					6.39	0.32	9.32	24.0	
1-4		4.09			0	0	421	2.19	3.80	8.33	4.09	1.64					8.03	1.06	10.38	26.7	
1-5	4.19				63	145	566	2.95	3.80	11.20							8.03	1.09	11.47	30.7	
3-30		37.56			0	0	566	2.95	3.80	11.20	24.41	9.77					17.79	9.77	21.23	50.2	
3-31		27.23			0	0	566	2.95	3.80	11.20	17.70	7.08					24.87	7.08	28.31	64.4	
3-32	30.01				1200	2761	3327	17.33	3.40	58.98							24.87	7.80	36.12	120.0	
3-33		24.52			0	0	3327	17.33	3.40	58.98	15.94	6.38					31.25	6.38	42.49	132.7	
Total					1446																

**TOTAL FLOW TO GEORGE ST SPS 332.3**

# Appendix B

TOWN OF LINDSAY

SANITARY SEWER CALCULATION SHEET

**George St Scenario 1**

DATE: Sep. 05, 2013

AREA TRIBUTARY TO *GEORGE STREET* PUMPING STATION

From MH	To MH	Res. Area (ha)	No. of Lots	Pop'n	Cum. Pop'n	Cum. Avg. Domestic Q (L/s)	Harmon Peaking Factor	Cum. Peak Domestic Q (L/s)	ICI			Extraneous		Pipe TYPE	Dia. (mm)	Length (m)	U/S Inv. (m)	D/S Inv. (m)	Slope (%)	Vfull (m/s)	Qcap (L/s)	Qpeak/Qcap (%)	Inadequate Velocity	Inadequate Capacity
									Area (ha)	CUM. (ha)	Q (L/s)	Flow (L/s)	Qpeak (L/s)											
<b>From Hwy7 SPS</b>													<b>30.7</b>											
38A	37A	1.45	57	131	131	0.68	3.80	2.59	0.61	0.61	0.244	0.54	34.1	4	300	100.0	252.25	252.05	0.20%	0.61	43.2	78.8%		
37A	36A		0	0	131	0.68	3.80	2.59		0.61	0.244	0.54	34.1	4	300	100.0	252.02	251.82	0.20%	0.61	43.2	78.8%		
36A	35A		0	0	131	0.68	3.80	2.59		0.61	0.244	0.54	34.1	4	300	100.0	251.79	251.59	0.20%	0.61	43.2	78.8%		
35A	34A	0.83	12	28	159	0.83	3.80	3.14		0.61	0.244	0.75	34.8	4	375	45.0	251.56	251.47	0.20%	0.71	78.4	44.4%		
34A	33A	9.79	132	304	462	2.41	3.80	9.15	2.74	3.35	1.34	4.01	45.2	4	375	54.0	251.42	251.31	0.20%	0.72	79.1	57.1%		
33A	32A		0	0	462	2.41	3.80	9.15		3.35	1.34	4.01	45.2	4	375	51.0	251.29	251.19	0.20%	0.70	77.6	58.2%		
32A	31A		0	0	462	2.41	3.80	9.15		3.35	1.34	4.01	45.2	4	375	33.0	251.17	251.10	0.21%	0.73	80.7	56.0%		
31A	20A		0	0	462	2.41	3.80	9.15		3.35	1.34	4.01	45.2	4	375	59.5	251.08	250.96	0.20%	0.71	78.7	57.4%		
20A	19A		0	0	462	2.41	3.80	9.15		3.35	1.34	4.01	45.2	4	375	51.0	250.94	250.84	0.20%	0.70	77.6	58.2%		
19A	18A		0	0	462	2.41	3.80	9.15		3.35	1.34	4.01	45.2	4	375	32.5	250.82	250.76	0.18%	0.68	75.3	60.0%		
18A	12A		0	0	462	2.41	3.80	9.15		3.35	1.34	4.01	45.2	4	375	100.0	250.74	250.57	0.17%	0.65	72.3	62.5%		
12A	11A	5.91	463	1065	1527	7.95	3.67	29.22		3.35	1.34	5.55	66.8	4	375	85.5	250.55	250.38	0.20%	0.71	78.2	85.5%		
11A	10A		0	0	1527	7.95	3.67	29.22		3.35	1.34	5.55	66.8	4	375	35.5	250.36	250.28	0.23%	0.75	83.2	80.3%		
10A	9A		0	0	1527	7.95	3.67	29.22		3.35	1.34	5.55	66.8	4	375	62.5	250.26	250.15	0.18%	0.67	73.5	90.8%		
9A	8A		0	0	1527	7.95	3.67	29.22		3.35	1.34	5.55	66.8	4	375	99.5	250.13	249.93	0.20%	0.71	78.6	85.0%		
8A	7A		0	0	1527	7.95	3.67	29.22		3.35	1.34	5.55	66.8	4	375	101.5	249.91	249.71	0.20%	0.70	77.8	85.8%		
7A	6A		0	0	1527	7.95	3.67	29.22		3.35	1.34	5.55	66.8	4	375	100.0	249.69	249.49	0.20%	0.71	78.4	85.2%		
6A	5A		0	0	1527	7.95	3.67	29.22		3.35	1.34	5.55	66.8	4	375	100.5	249.47	249.27	0.20%	0.71	78.2	85.4%		
5A	5B		0	0	1527	7.95	3.67	29.22		3.35	1.34	5.55	66.8	4	525	30.5	249.12	249.06	0.20%	0.88	190.7	35.0%		
5B	4A	17.1	259	596	2123	11.06	3.57	39.42	2.58	5.93	2.17	10.66	83.0	4	525	53.0	249.06	248.96	0.19%	0.86	186.8	44.4%		
4A	3A	1.3	52	120	2243	11.68	3.55	41.42		5.93	2.17	11.00	85.3	4	525	80.0	248.94	248.78	0.20%	0.89	192.3	44.3%		
3A	2A		0	0	2243	11.68	3.55	41.42		5.93	2.17	11.00	85.3	4	525	65.5	248.76	248.62	0.21%	0.92	198.8	42.9%		
<b>Logie N to 2A</b>		7.17	122	281	281	1.46	3.80	5.55		5.93	2.17	12.86	20.6	4	250	150.0			0.50%	0.86	42.0	49.0%		
2A	SPS		0	0	2523	13.14	3.51	46.06		5.93	2.17	12.86	91.8	4	525	27.5	248.56	248.48	0.29%	1.07	231.9	39.6%		
<b>TOTAL</b>		<b>43.55</b>	<b>1097</b>	<b>2523</b>	<b>2523</b>	<b>13.14</b>	<b>3.51</b>	<b>46.06</b>	<b>5.93</b>	<b>5.93</b>	<b>2.17</b>	<b>12.86</b>	<b>91.8</b>			<b>1717.5</b>					<b>MAX</b>	<b>91%</b>		

**ASSUMPTIONS:**

# of people/lot =	2.3
Per capita flow =	450 Lpcd
Indust / Commercial flow =	0.4 L/s/ha
Manning's "n" =	0.013
Institutional Flow =	0.32 L/s/ha
Extraneous Flows:	0.26 L/s/ha

**PIPE TYPE:**

1	Concrete
2	Asbestos cement
3	Vitrified clay
4	PVC
5	Other

TOWN OF LINDSAY

SANITARY SEWER CALCULATION SHEET

AREA TRIBUTARY TO RIDOUT STREET PUMPING STATION (2013)

**Ridout St Scenario 1**

DATE: Sep. 05, 2013

From MH	To MH	Res. Area (ha)	No. of Lots	Pop'n	Cum. Pop'n	Cum. Avg. Domestic Q (L/s)	Harmon Peaking Factor	Cum. Peak Domestic Q (L/s)	ICI		Extraneous		Pipe TYPE	Dia. (mm)	Length (m)	U/S Inv. (m)	D/S Inv. (m)	Slope (%)	Vfull (m/s)	Qcap (L/s)	Qpeak/Qcap (%)	Inadequate Velocity	Inadequate Capacity	
									Area (ha)	CUM. (ha Q (L/s))	Flow (L/s)	Qpeak (L/s)												
<b>From Kent St.</b>												<b>158.2</b>												
7A	6A	45.32	0	0	635	3.31	3.92	12.96	0	0	11.8	24.7	4	450	14.0	253.29	253.01	2.00%	2.53	403.2	6.1%			
OOD	OOB	13.56	4	9	23	0.12	4.37	0.52	0	0	3.5	4.0	4	250	74.8	257.68	257.05	0.84%	1.11	54.6	7.4%			
<b>From George St.</b>												<b>91.8</b>												
OOB	OOB	2.12	0	0	23	0.12	4.37	0.52	0	0	4.1	96.4	4	375	82.7	256.97	256.67	0.36%	0.96	105.6	91.3%			
OOB	IIZ		10	23	46	0.24	4.32	1.04	0	0	4.1	96.9	4	375	83.2	256.67	256.33	0.41%	1.01	112.1	86.5%			
JJA	IIZ	5.24	9	21	85	0.44	4.26	1.89	0	0	5.4	7.3	2	200	95.1	259.16	256.32	2.99%	1.80	56.7	12.9%			
IIZ	IYY	1.21	0	0	131	0.68	4.21	2.87	0	0	5.8	100.4	2	400	66.3	256.32	256.01	0.47%	1.14	143.3	70.1%			
IYY	IIX		0	0	131	0.68	4.21	2.87	0	0	5.8	100.4	2	400	78.0	255.98	255.77	0.26%	0.85	106.5	94.3%			
IIX	IIW	8.02	225	518	649	3.38	3.91	13.22	1.15	1	0.46	7.8	113.3	2	400	52.3	255.75	255.61	0.26%	0.85	107.0	105.9%	*****	
PPS	IIW	0.73	10	23	23	0.12	4.37	0.52	0	0	8.0	8.6	4	200	45.9	256.28	254.88	3.05%	1.82	57.3	14.9%			
IIW	IIV		0	0	672	3.50	3.90	13.66	1	0.46	8.0	113.9	2	400	39.0	255.58	255.46	0.33%	0.95	118.8	95.9%			
IIV	IIU		2	5	676	3.52	3.90	13.75	1	0.46	8.0	114.0	2	400	35.0	255.45	255.30	0.42%	1.07	135.0	84.5%			
IIU	5A		0	0	676	3.52	3.90	13.75	1	0.46	8.0	114.0	2	400	18.7	255.30	255.15	0.80%	1.48	186.5	61.1%			
EJ	5A	4.90	17	39	94	0.49	4.25	2.09	0	0	1.3	3.4	3	200	164.5	259.57	255.33	2.58%	1.68	52.7	6.4%			
5A	4A	1.92	2	5	775	4.04	3.87	15.62	1	0.46	9.8	117.7	4	450	109.5	254.70	254.17	0.48%	1.25	198.3	59.3%			
EG	4A	5.22	3	7	113	0.59	4.23	2.48	0	0	1.4	3.8	3	200	82.3	257.24	254.82	2.94%	1.79	56.2	6.8%			
4A	3A		2	5	892	4.65	3.83	17.81	1	0.46	11.2	121.2	4	450	80.0	254.14	253.54	0.75%	1.55	246.9	49.1%			
3A	6A		0	0	892	4.65	3.83	17.81	1	0.46	11.2	121.2	4	450	34.0	253.49	253.25	0.71%	1.51	239.5	50.6%			
6A	2A		0	0	1527	7.95	3.67	29.22	1	0.46	22.9	144.4	4	450	20.0	252.53	252.35	0.90%	1.70	270.5	53.4%			
2A	1A	1.52	0	0	1527	7.95	3.67	29.22	1	0.46	23.3	144.8	4	450	109.0	252.34	251.34	0.92%	1.72	273.1	53.0%			
1A	ER		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	144.8	4	450	8.0	250.08	249.98	1.25%	2.00	318.7	45.4%			
ER	KKF		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	144.8	2	400	14.5	249.92	249.69	1.59%	2.09	262.3	55.2%			
KKF	KKG		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	144.8	5	300	67.1	249.63	247.77	2.77%	2.14	151.0	95.9%			
KKG	KKH		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	144.8	1	450	11.2	247.14	247.04	0.89%	1.69	269.4	53.8%			
KKH	PUMP		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	144.8	0	600	2.6	246.85	246.80	1.92%	3.01	851.4	17.0%			
<b>TOTAL</b>		<b>89.76</b>	<b>664</b>	<b>1527</b>	<b>1527</b>	<b>7.95</b>	<b>3.67</b>	<b>29.22</b>	<b>1.15</b>	<b>0.46</b>	<b>23.3</b>	<b>303.0</b>			<b>5900.9</b>					<b>MAX</b>	<b>106%</b>			

<b>ASSUMPTIONS:</b>	
# of people/lot =	2.3
Per capita flow =	450 Lpcd
Indust. / Comm. Flow =	0.4 L/s/ha
Manning's "n" =	0.013
Extraneous Flows:	0.26 L/s/ha
Institutional Flows:	0.32 L/s/ha

<b>PIPE TYPE:</b>	
1	Concrete
2	Asbestos cement
3	Vitrified clay
4	PVC
5	Other

TOWN OF LINDSAY

SANITARY SEWER CALCULATION SHEET

AREA TRIBUTARY TO RIDOUT STREET PUMPING STATION (2013)

**Ridout St Scenario 1 (Improved)**

DATE: Sep. 05, 2013

From MH	To MH	Res. Area (ha)	No. of Lots	Pop'n	Cum. Pop'n	Cum. Avg. Domestic Q (L/s)	Harmon Peaking Factor	Cum. Peak Domestic Q (L/s)	ICI		Extraneous		Pipe TYPE	Dia. (mm)	Length (m)	U/S Inv. (m)	D/S Inv. (m)	Slope (%)	Vfull (m/s)	Qcap (L/s)	Qpeak/Qcap (%)	Inadequate Velocity	Inadequate Capacity	
									Area (ha)	CUM. (ha Q (L/s))	Flow (L/s)	Qpeak (L/s)												
<b>From Kent St.</b>												<b>158.2</b>												
7A	6A	45.32	0	0	635	3.31	3.92	12.96	0	0	11.8	24.7	4	450	14.0	253.29	253.01	2.00%	2.53	403.2	6.1%			
OOD	OOB	13.56	4	9	23	0.12	4.37	0.52	0	0	3.5	4.0	4	250	74.8	257.68	257.05	0.84%	1.11	54.6	7.4%			
<b>From George St.</b>												<b>91.8</b>												
OOB	OOB	2.12	0	0	23	0.12	4.37	0.52	0	0	4.1	96.4	4	375	82.7	256.97	256.67	0.36%	0.96	105.6	91.3%			
OOB	IIZ		10	23	46	0.24	4.32	1.04	0	0	4.1	96.9	4	375	83.2	256.67	256.33	0.41%	1.01	112.1	86.5%			
JJA	IIZ	5.24	9	21	85	0.44	4.26	1.89	0	0	5.4	7.3	2	200	95.1	259.16	256.32	2.99%	1.80	56.7	12.9%			
IIZ	IYY	1.21	0	0	131	0.68	4.21	2.87	0	0	5.8	100.4	2	400	66.3	256.32	256.01	0.47%	1.14	143.3	70.1%			
IYY	IIX		0	0	131	0.68	4.21	2.87	0	0	5.8	100.4	2	400	78.0	255.98	255.77	0.26%	0.85	106.5	94.3%			
IIX	IIW	8.02	225	518	649	3.38	3.91	13.22	1.15	1	0.46	7.8	113.3	4	450	52.3	255.75	255.61	0.26%	0.92	146.4	77.4%		
PPS	IIW	0.73	10	23	23	0.12	4.37	0.52	0	0	8.0	8.6	4	200	45.9	256.28	254.88	3.05%	1.82	57.3	14.9%			
IIW	IIV		0	0	672	3.50	3.90	13.66	1	0.46	8.0	113.9	4	450	39.0	255.58	255.46	0.33%	1.02	162.7	70.0%			
IIV	IIU		2	5	676	3.52	3.90	13.75	1	0.46	8.0	114.0	4	450	35.0	255.45	255.30	0.42%	1.16	184.8	61.7%			
IIU	5A		0	0	676	3.52	3.90	13.75	1	0.46	8.0	114.0	4	450	18.7	255.30	255.15	0.80%	1.61	255.3	44.7%			
EJ	5A	4.90	17	39	94	0.49	4.25	2.09	0	0	1.3	3.4	3	200	164.5	259.57	255.33	2.58%	1.68	52.7	6.4%			
5A	4A	1.92	2	5	775	4.04	3.87	15.62	1	0.46	9.8	117.7	4	450	109.5	254.70	254.17	0.48%	1.25	198.3	59.3%			
EG	4A	5.22	3	7	113	0.59	4.23	2.48	0	0	1.4	3.8	3	200	82.3	257.24	254.82	2.94%	1.79	56.2	6.8%			
4A	3A		2	5	892	4.65	3.83	17.81	1	0.46	11.2	121.2	4	450	80.0	254.14	253.54	0.75%	1.55	246.9	49.1%			
3A	6A		0	0	892	4.65	3.83	17.81	1	0.46	11.2	121.2	4	450	34.0	253.49	253.25	0.71%	1.51	239.5	50.6%			
6A	2A		0	0	1527	7.95	3.67	29.22	1	0.46	22.9	144.4	4	450	20.0	252.53	252.35	0.90%	1.70	270.5	53.4%			
2A	1A	1.52	0	0	1527	7.95	3.67	29.22	1	0.46	23.3	144.8	4	450	109.0	252.34	251.34	0.92%	1.72	273.1	53.0%			
1A	ER		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	144.8	4	450	8.0	250.08	249.98	1.25%	2.00	318.7	45.4%			
ER	KKF		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	144.8	2	400	14.5	249.92	249.69	1.59%	2.09	262.3	55.2%			
KKF	KKG		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	144.8	5	300	67.1	249.63	247.77	2.77%	2.14	151.0	95.9%			
KKG	KKH		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	144.8	1	450	11.2	247.14	247.04	0.89%	1.69	269.4	53.8%			
KKH	PUMP		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	144.8	0	600	2.6	246.85	246.80	1.92%	3.01	851.4	17.0%			
<b>TOTAL</b>		<b>89.76</b>	<b>664</b>	<b>1527</b>	<b>1527</b>	<b>7.95</b>	<b>3.67</b>	<b>29.22</b>	<b>1.15</b>	<b>0.46</b>	<b>23.3</b>	<b>303</b>			<b>5900.9</b>					<b>MAX</b>	<b>96%</b>			

<b>ASSUMPTIONS:</b>	
# of people/lot =	2.3
Per capita flow =	450 Lpcd
Indust. / Comm. Flow =	0.4 L/s/ha
Manning's "n" =	0.013
Extraneous Flows:	0.26 L/s/ha
Institutional Flows:	0.32 L/s/ha

<b>PIPE TYPE:</b>	
1	Concrete
2	Asbestos cement
3	Vitrified clay
4	PVC
5	Other

TOWN OF LINDSAY

SANITARY SEWER CALCULATION SHEET

**George St Scenario 2A**

DATE: Sep. 05, 2013

AREA TRIBUTARY TO *GEORGE STREET* PUMPING STATION

From MH	To MH	Res. Area (ha)	No. of Lots	Pop'n	Cum. Pop'n	Cum. Avg. Domestic Q (L/s)	Harmon Peaking Factor	Cum. Peak Domestic Q (L/s)	ICI			Extraneous		Pipe TYPE	Dia. (mm)	Length (m)	U/S Inv. (m)	D/S Inv. (m)	Slope (%)	Vfull (m/s)	Qcap (L/s)	Qpeak/Qcap (%)	Inadequate Velocity	Inadequate Capacity	
									Area (ha)	CUM. (ha)	Q (L/s)	Flow (L/s)	Qpeak (L/s)												
<b>From Hwy7 SPS</b>													<b>30.7</b>												
38A	37A	1.45	57	131	131	0.68	3.80	2.59	0.61	0.61	0.244	0.54	34.1	4	300	100.0	252.25	252.05	0.20%	0.61	43.2	78.8%			
37A	36A		0	0	131	0.68	3.80	2.59		0.61	0.244	0.54	34.1	4	300	100.0	252.02	251.82	0.20%	0.61	43.2	78.8%			
36A	35A		0	0	131	0.68	3.80	2.59		0.61	0.244	0.54	34.1	4	300	100.0	251.79	251.59	0.20%	0.61	43.2	78.8%			
35A	34A	0.83	12	28	159	0.83	3.80	3.14		0.61	0.244	0.75	34.8	4	375	45.0	251.56	251.47	0.20%	0.71	78.4	44.4%			
34A	33A	9.79	132	304	462	2.41	3.80	9.15	2.74	3.35	1.34	3.30	44.5	4	375	54.0	251.42	251.31	0.20%	0.72	79.1	56.2%			
33A	32A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	44.5	4	375	51.0	251.29	251.19	0.20%	0.70	77.6	57.3%			
32A	31A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	44.5	4	375	33.0	251.17	251.10	0.21%	0.73	80.7	55.1%			
31A	20A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	44.5	4	375	59.5	251.08	250.96	0.20%	0.71	78.7	56.5%			
20A	19A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	44.5	4	375	51.0	250.94	250.84	0.20%	0.70	77.6	57.3%			
19A	18A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	44.5	4	375	32.5	250.82	250.76	0.18%	0.68	75.3	59.1%			
18A	12A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	44.5	4	375	100.0	250.74	250.57	0.17%	0.65	72.3	61.5%			
12A	11A	5.91	463	1065	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	85.5	250.55	250.38	0.20%	0.71	78.2	84.5%			
11A	10A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	35.5	250.36	250.28	0.23%	0.75	83.2	79.4%			
10A	9A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	62.5	250.26	250.15	0.18%	0.67	73.5	89.9%			
9A	8A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	99.5	250.13	249.93	0.20%	0.71	78.6	84.1%			
8A	7A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	101.5	249.91	249.71	0.20%	0.70	77.8	84.9%			
7A	6A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	100.0	249.69	249.49	0.20%	0.71	78.4	84.3%			
6A	5A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	100.5	249.47	249.27	0.20%	0.71	78.2	84.5%			
5A	5B		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	525	30.5	249.12	249.06	0.20%	0.88	190.7	34.7%			
<b>ESE Trunk to 5B</b>		87.89	3516	8087	8087	42.12	3.05	128.28					22.85	151.1	4	525	2000.0			0.20%	0.89	192.3	78.6%		
5B	4A	17.1	259	596	#####	53.18	2.95	156.64	2.58	5.93	2.17	32.80	222.3	4	525	53.0	249.06	248.96	0.19%	0.86	186.8	119.0%		*****	
4A	3A	1.3	52	120	#####	53.80	2.94	158.20		5.93	2.17	33.14	224.2	4	525	80.0	248.94	248.78	0.20%	0.89	192.3	116.6%		*****	
3A	2A		0	0	#####	53.80	2.94	158.20		5.93	2.17	33.14	224.2	4	525	65.5	248.76	248.62	0.21%	0.92	198.8	112.8%		*****	
<b>Logie N to 2A</b>		7.17	122	281	281	1.46	3.80	5.55					1.86	7.4	4	200	150.0			0.50%	0.74	23.2	32.0%		
2A	SPS		0	0	#####	55.26	2.93	161.86		5.93	2.17	35.00	229.7	4	525	27.5	248.56	248.48	0.29%	1.07	231.9	99.0%			
<b>TOTAL</b>		<b>131.44</b>	<b>4613</b>	<b>#####</b>	<b>#####</b>	<b>55.26</b>	<b>2.93</b>	<b>161.86</b>	<b>5.93</b>	<b>5.93</b>	<b>2.17</b>	<b>35.00</b>	<b>229.7</b>			<b>3717.5</b>					<b>MAX</b>	<b>119%</b>			

**ASSUMPTIONS:**

# of people/lot =	2.3
Per capita flow =	450 Lpcd
Commercial flow =	0.4 L/s/ha
Manning's "n" =	0.013
Institutional Flow =	0.32 L/s/ha
Extraneous Flows (New Areas):	0.26 L/s/ha

**PIPE TYPE:**

1	Concrete
2	Asbestos cement
3	Vitrified clay
4	PVC
5	Other

TOWN OF LINDSAY

SANITARY SEWER CALCULATION SHEET

**George St Scenario 2B**

DATE: Sep. 05, 2013

AREA TRIBUTARY TO *GEORGE STREET* PUMPING STATION

From MH	To MH	Res. Area (ha)	No. of Lots	Pop'n	Cum. Pop'n	Cum. Avg. Domestic Q (L/s)	Harmon Peaking Factor	Cum. Peak Domestic Q (L/s)	ICI			Extraneous		Pipe TYPE	Dia. (mm)	Length (m)	U/S Inv. (m)	D/S Inv. (m)	Slope (%)	Vfull (m/s)	Qcap (L/s)	Qpeak/Qcap (%)	Inadequate Velocity	Inadequate Capacity
									Area (ha)	CUM. (ha)	Q (L/s)	Flow (L/s)	Qpeak (L/s)											
<b>From Hwy7 SPS</b>													<b>30.7</b>											
38A	37A	1.45	57	131	131	0.68	3.80	2.59	0.61	0.61	0.244	0.54	34.1	4	300	100.0	252.25	252.05	0.20%	0.61	43.2	78.8%		
37A	36A		0	0	131	0.68	3.80	2.59		0.61	0.244	0.54	34.1	4	300	100.0	252.02	251.82	0.20%	0.61	43.2	78.8%		
36A	35A		0	0	131	0.68	3.80	2.59		0.61	0.244	0.54	34.1	4	300	100.0	251.79	251.59	0.20%	0.61	43.2	78.8%		
35A	34A	0.83	12	28	159	0.83	3.80	3.14		0.61	0.244	0.75	34.8	4	375	45.0	251.56	251.47	0.20%	0.71	78.4	44.4%		
34A	33A	9.79	132	304	462	2.41	3.80	9.15	2.74	3.35	1.34	4.01	45.2	4	375	54.0	251.42	251.31	0.20%	0.72	79.1	57.1%		
33A	32A		0	0	462	2.41	3.80	9.15		3.35	1.34	4.01	45.2	4	375	51.0	251.29	251.19	0.20%	0.70	77.6	58.2%		
32A	31A		0	0	462	2.41	3.80	9.15		3.35	1.34	4.01	45.2	4	375	33.0	251.17	251.10	0.21%	0.73	80.7	56.0%		
31A	20A		0	0	462	2.41	3.80	9.15		3.35	1.34	4.01	45.2	4	375	59.5	251.08	250.96	0.20%	0.71	78.7	57.4%		
<b>ESE Trunk to 20A</b>		87.89	3516	8087	8087	42.12	3.05	128.28					22.85	151.1	4	525	2000.0		0.20%	0.89	192.3	78.6%		
20A	19A		0	0	8549	44.53	3.02	134.56		3.35	1.34	26.86	193.5	4	375	51.0	250.94	250.84	0.20%	0.70	77.6	249.2%		*****
19A	18A		0	0	8549	44.53	3.02	134.56		3.35	1.34	26.86	193.5	4	375	32.5	250.82	250.76	0.18%	0.68	75.3	256.8%		*****
18A	12A		0	0	8549	44.53	3.02	134.56		3.35	1.34	26.86	193.5	4	375	100.0	250.74	250.57	0.17%	0.65	72.3	267.6%		*****
12A	11A	5.91	463	1065	9614	50.07	2.97	148.80		3.35	1.34	28.40	209.2	4	375	85.5	250.55	250.38	0.20%	0.71	78.2	267.7%		*****
11A	10A		0	0	9614	50.07	2.97	148.80		3.35	1.34	28.40	209.2	4	375	35.5	250.36	250.28	0.23%	0.75	83.2	251.4%		*****
10A	9A		0	0	9614	50.07	2.97	148.80		3.35	1.34	28.40	209.2	4	375	62.5	250.26	250.15	0.18%	0.67	73.5	284.5%		*****
9A	8A		0	0	9614	50.07	2.97	148.80		3.35	1.34	28.40	209.2	4	375	99.5	250.13	249.93	0.20%	0.71	78.6	266.2%		*****
8A	7A		0	0	9614	50.07	2.97	148.80		3.35	1.34	28.40	209.2	4	375	101.5	249.91	249.71	0.20%	0.70	77.8	268.9%		*****
7A	6A		0	0	9614	50.07	2.97	148.80		3.35	1.34	28.40	209.2	4	375	100.0	249.69	249.49	0.20%	0.71	78.4	266.9%		*****
6A	5A		0	0	9614	50.07	2.97	148.80		3.35	1.34	28.40	209.2	4	375	100.5	249.47	249.27	0.20%	0.71	78.2	267.5%		*****
5A	5B		0	0	9614	50.07	2.97	148.80		3.35	1.34	28.40	209.2	4	525	30.5	249.12	249.06	0.20%	0.88	190.7	109.7%		*****
5B	4A	17.1	259	596	#####	53.18	2.95	156.64	2.58	5.93	2.17	33.51	223.0	4	525	53.0	249.06	248.96	0.19%	0.86	186.8	119.4%		*****
4A	3A	1.3	52	120	#####	53.80	2.94	158.20		5.93	2.17	33.85	224.9	4	525	80.0	248.94	248.78	0.20%	0.89	192.3	117.0%		*****
3A	2A		0	0	#####	53.80	2.94	158.20		5.93	2.17	33.85	224.9	4	525	65.5	248.76	248.62	0.21%	0.92	198.8	113.1%		*****
<b>Logie N to 2A</b>		7.17	122	281	281	1.46	3.80	5.55					1.86	7.4	4	200	150.0		0.50%	0.74	23.2	32.0%		
2A	SPS		0	0	#####	55.26	2.93	161.86		5.93	2.17	35.72	230.4	4	525	27.5	248.56	248.48	0.29%	1.07	231.9	99.4%		
<b>TOTAL</b>		<b>131.44</b>	<b>4613</b>	<b>#####</b>	<b>#####</b>	<b>55.26</b>	<b>2.93</b>	<b>161.86</b>	<b>5.93</b>	<b>5.93</b>	<b>2.17</b>	<b>35.72</b>	<b>230.4</b>			<b>3717.5</b>					<b>MAX</b>	<b>284%</b>		

**ASSUMPTIONS:**

# of people/lot =	2.3
Per capita flow =	450 Lpcd
Commercial flow =	0.4 L/s/ha
Manning's "n" =	0.013
Institutional Flow =	0.32 L/s/ha
Extraneous Flows (New Areas):	0.26 L/s/ha

**PIPE TYPE:**

1	Concrete
2	Asbestos cement
3	Vitrified clay
4	PVC
5	Other

TOWN OF LINDSAY

SANITARY SEWER CALCULATION SHEET

AREA TRIBUTARY TO RIDOUT STREET PUMPING STATION (2013)

**Ridout St Scenario 2 (with Scenario 1 Improvements)**

DATE: Sep. 05, 2013

From MH	To MH	Res. Area (ha)	No. of Lots	Pop'n	Cum. Pop'n	Cum. Avg. Domestic Q (L/s)	Harmon Peaking Factor	Cum. Peak Domestic Q (L/s)	ICI		Extraneous		Pipe TYPE	Dia. (mm)	Length (m)	U/S Inv. (m)	D/S Inv. (m)	Slope (%)	Vfull (m/s)	Qcap (L/s)	Qpeak/Qcap (%)	Inadequate Velocity	Inadequate Capacity	
									Area (ha)	CUM. (ha Q (L/s))	Flow (L/s)	Qpeak (L/s)												
<b>From Kent St.</b>												<b>158.2</b>												
7A	6A	45.32	0	0	635	3.31	3.92	12.96	0	0	11.8	24.7	4	450	14.0	253.29	253.01	2.00%	2.53	403.2	6.1%			
OOD	OOO	13.56	4	9	23	0.12	4.37	0.52	0	0	3.5	4.0	4	250	74.8	257.68	257.05	0.84%	1.11	54.6	7.4%			
<b>From George St.</b>												<b>229.7</b>												
OOO	OOB	2.12	0	0	23	0.12	4.37	0.52	0	0	4.1	234.3	4	375	82.7	256.97	256.67	0.36%	0.96	105.6	221.9%		*****	
OOB	IIZ		10	23	46	0.24	4.32	1.04	0	0	4.1	234.8	4	375	83.2	256.67	256.33	0.41%	1.01	112.1	209.5%		*****	
JJA	IIZ	5.24	9	21	85	0.44	4.26	1.89	0	0	5.4	7.3	2	200	95.1	259.16	256.32	2.99%	1.80	56.7	12.9%			
IIZ	IYY	1.21	0	0	131	0.68	4.21	2.87	0	0	5.8	238.4	2	400	66.3	256.32	256.01	0.47%	1.14	143.3	166.3%		*****	
IYY	IIX		0	0	131	0.68	4.21	2.87	0	0	5.8	238.4	2	400	78.0	255.98	255.77	0.26%	0.85	106.5	223.8%		*****	
IIX	IIW	8.02	225	518	649	3.38	3.91	13.22	1.15	1	0.46	7.8	251.2	4	450	52.3	255.75	255.61	0.26%	0.92	146.4	171.6%		*****
PPS	IIW	0.73	10	23	23	0.12	4.37	0.52	0	0	8.0	8.6	4	200	45.9	256.28	254.88	3.05%	1.82	57.3	14.9%			
IIW	IIV		0	0	672	3.50	3.90	13.66	1	0.46	8.0	251.9	4	450	39.0	255.58	255.46	0.33%	1.02	162.7	154.8%		*****	
IIV	IIU		2	5	676	3.52	3.90	13.75	1	0.46	8.0	252.0	4	450	35.0	255.45	255.30	0.42%	1.16	184.8	136.4%		*****	
IIU	5A		0	0	676	3.52	3.90	13.75	1	0.46	8.0	252.0	4	450	18.7	255.30	255.15	0.80%	1.61	255.3	98.7%			
EJ	5A	4.90	17	39	94	0.49	4.25	2.09	0	0	1.3	3.4	3	200	164.5	259.57	255.33	2.58%	1.68	52.7	6.4%			
5A	4A	1.92	2	5	775	4.04	3.87	15.62	1	0.46	9.8	255.6	4	450	109.5	254.70	254.17	0.48%	1.25	198.3	128.9%		*****	
EG	4A	5.22	3	7	113	0.59	4.23	2.48	0	0	1.4	3.8	3	200	82.3	257.24	254.82	2.94%	1.79	56.2	6.8%			
4A	3A		2	5	892	4.65	3.83	17.81	1	0.46	11.2	259.2	4	450	80.0	254.14	253.54	0.75%	1.55	246.9	105.0%		*****	
3A	6A		0	0	892	4.65	3.83	17.81	1	0.46	11.2	259.2	4	450	34.0	253.49	253.25	0.71%	1.51	239.5	108.2%		*****	
6A	2A		0	0	1527	7.95	3.67	29.22	1	0.46	22.9	282.4	4	450	20.0	252.53	252.35	0.90%	1.70	270.5	104.4%		*****	
2A	1A	1.52	0	0	1527	7.95	3.67	29.22	1	0.46	23.3	282.8	4	450	109.0	252.34	251.34	0.92%	1.72	273.1	103.5%		*****	
1A	ER		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	282.8	4	450	8.0	250.08	249.98	1.25%	2.00	318.7	88.7%			
ER	KKF		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	282.8	2	400	14.5	249.92	249.69	1.59%	2.09	262.3	107.8%		*****	
KKF	KKG		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	282.8	5	300	67.1	249.63	247.77	2.77%	2.14	151.0	187.3%		*****	
KKG	KKH		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	282.8	1	450	11.2	247.14	247.04	0.89%	1.69	269.4	105.0%		*****	
KKH	PUMP		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	282.8	0	600	2.6	246.85	246.80	1.92%	3.01	851.4	33.2%			
<b>TOTAL</b>		<b>89.76</b>	<b>664</b>	<b>1527</b>	<b>1527</b>	<b>7.95</b>	<b>3.67</b>	<b>29.22</b>	<b>1.15</b>	<b>0.46</b>	<b>23.3</b>	<b>441</b>			<b>5900.9</b>					<b>MAX</b>	<b>224%</b>			

**ASSUMPTIONS:**

# of people/lot = 2.3  
 Per capita flow = 450 Lpcd  
 Indust. / Comm. Flow = 0.4 L/s/ha  
 Manning's "n" = 0.013  
 Extraneous Flows: 0.26 L/s/ha  
 Institutional Flows: 0.32 L/s/ha

**PIPE TYPE:**

- 1 Concrete
- 2 Asbestos cement
- 3 Vitrified clay
- 4 PVC
- 5 Other

TOWN OF LINDSAY

SANITARY SEWER CALCULATION SHEET

AREA TRIBUTARY TO GEORGE STREET PUMPING STATION

**George St Scenario 3A (E3 Discharges to SE Trunk)**

DATE: Sep. 05, 2013

From MH	To MH	Res. Area (ha)	No. of Lots	Pop'n	Cum. Pop'n	Cum. Avg. Domestic Q (L/s)	Harmon Peaking Factor	Cum. Peak Domestic Q (L/s)	ICI			Extraneous		Pipe TYPE	Dia. (mm)	Length (m)	U/S Inv. (m)	D/S Inv. (m)	Slope (%)	Vfull (m/s)	Qcap (L/s)	Qpeak/Qcap (%)	Inadequate Velocity	Inadequate Capacity
									Area (ha)	CUM. (ha)	Q (L/s)	Flow (L/s)	Qpeak (L/s)											
<b>From Hwy7 SPS</b>																								
38A	37A	1.45	57	131	131	0.68	3.80	2.59	0.61	0.61	0.244	0.54	136.1	4	300	100.0	252.25	252.05	0.20%	0.61	43.2	314.7%	*****	
37A	36A		0	0	131	0.68	3.80	2.59		0.61	0.244	0.54	136.1	4	300	100.0	252.02	251.82	0.20%	0.61	43.2	314.7%	*****	
36A	35A		0	0	131	0.68	3.80	2.59		0.61	0.244	0.54	136.1	4	300	100.0	251.79	251.59	0.20%	0.61	43.2	314.7%	*****	
35A	34A	0.83	12	28	159	0.83	3.80	3.14		0.61	0.244	0.75	136.8	4	375	45.0	251.56	251.47	0.20%	0.71	78.4	174.5%	*****	
34A	33A	9.79	132	304	462	2.41	3.80	9.15	2.74	3.35	1.34	3.30	146.5	4	375	54.0	251.42	251.31	0.20%	0.72	79.1	185.1%	*****	
33A	32A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	146.5	4	375	51.0	251.29	251.19	0.20%	0.70	77.6	188.7%	*****	
32A	31A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	146.5	4	375	33.0	251.17	251.10	0.21%	0.73	80.7	181.4%	*****	
31A	20A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	146.5	4	375	59.5	251.08	250.96	0.20%	0.71	78.7	186.1%	*****	
20A	19A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	146.5	4	375	51.0	250.94	250.84	0.20%	0.70	77.6	188.7%	*****	
19A	18A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	146.5	4	375	32.5	250.82	250.76	0.18%	0.68	75.3	194.5%	*****	
18A	12A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	146.5	4	375	100.0	250.74	250.57	0.17%	0.65	72.3	202.7%	*****	
12A	11A	5.91	463	1065	1527	7.95	3.67	29.22		3.35	1.34	4.83	168.1	4	375	85.5	250.55	250.38	0.20%	0.71	78.2	215.0%	*****	
11A	10A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	168.1	4	375	35.5	250.36	250.28	0.23%	0.75	83.2	202.0%	*****	
10A	9A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	168.1	4	375	62.5	250.26	250.15	0.18%	0.67	73.5	228.5%	*****	
9A	8A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	168.1	4	375	99.5	250.13	249.93	0.20%	0.71	78.6	213.9%	*****	
8A	7A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	168.1	4	375	101.5	249.91	249.71	0.20%	0.70	77.8	216.0%	*****	
7A	6A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	168.1	4	375	100.0	249.69	249.49	0.20%	0.71	78.4	214.4%	*****	
6A	5A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	168.1	4	375	100.5	249.47	249.27	0.20%	0.71	78.2	214.9%	*****	
5A	5B		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	168.1	4	525	30.5	249.12	249.06	0.20%	0.88	190.7	88.1%		
<b>ESE Trunk to 5B</b>		87.89	3516	8087	8087	42.12	3.05	128.28				22.85	151.1	4	525	2000.0			0.20%	0.89	192.3	78.6%		
5B	4A	17.1	259	596	#####	53.18	2.95	156.64	2.58	5.93	2.17	32.80	324.3	4	525	53.0	249.06	248.96	0.19%	0.86	186.8	173.6%	*****	
4A	3A	1.3	52	120	#####	53.80	2.94	158.20		5.93	2.17	33.14	326.2	4	525	80.0	248.94	248.78	0.20%	0.89	192.3	169.6%	*****	
3A	2A		0	0	#####	53.80	2.94	158.20		5.93	2.17	33.14	326.2	4	525	65.5	248.76	248.62	0.21%	0.92	198.8	164.1%	*****	
<b>Logie N to 2A</b>		7.17	122	281	281	1.46	3.80	5.55				1.86	7.4	4	200	150.0			0.50%	0.74	23.2	32.0%		
2A	SPS		0	0	#####	55.26	2.93	161.86		5.93	2.17	35.00	331.7	4	525	27.5	248.56	248.48	0.29%	1.07	231.9	143.0%	*****	
<b>TOTAL</b>		<b>131.44</b>	<b>4613</b>	<b>#####</b>	<b>#####</b>	<b>55.26</b>	<b>2.93</b>	<b>161.86</b>	<b>5.93</b>	<b>5.93</b>	<b>2.17</b>	<b>35.00</b>	<b>331.7</b>			<b>3717.5</b>				<b>MAX</b>	<b>315%</b>			

<b>ASSUMPTIONS:</b>	
# of people/lot =	2.3
Per capita flow =	450 Lpcd
Commercial flow =	0.4 L/s/ha
Manning's "n" =	0.013
Institutional Flow =	0.32 L/s/ha
Extraneous Flows (New Areas):	0.26 L/s/ha

<b>PIPE TYPE:</b>	
1	Concrete
2	Asbestos cement
3	Vitrified clay
4	PVC
5	Other

TOWN OF LINDSAY

SANITARY SEWER CALCULATION SHEET

AREA TRIBUTARY TO GEORGE STREET PUMPING STATION

**George St Scenario 3B (E3 Discharges to ESE Trunk)**

DATE: Sep. 05, 2013

From MH	To MH	Res. Area (ha)	No. of Lots	Pop'n	Cum. Pop'n	Cum. Avg. Domestic Q (L/s)	Harmon Peaking Factor	Cum. Peak Domestic Q (L/s)	ICI			Extraneous		Pipe TYPE	Dia. (mm)	Length (m)	U/S Inv. (m)	D/S Inv. (m)	Slope (%)	Vfull (m/s)	Qcap (L/s)	Qpeak/Qcap (%)	Inadequate Velocity	Inadequate Capacity	
									Area (ha)	CUM. (ha)	Q (L/s)	Flow (L/s)	Qpeak (L/s)												
<b>From Hwy7 SPS</b>													<b>30.7</b>												
38A	37A	1.45	57	131	131	0.68	3.80	2.59	0.61	0.61	0.244	0.54	34.1	4	300	100.0	252.25	252.05	0.20%	0.61	43.2	78.8%			
37A	36A		0	0	131	0.68	3.80	2.59		0.61	0.244	0.54	34.1	4	300	100.0	252.02	251.82	0.20%	0.61	43.2	78.8%			
36A	35A		0	0	131	0.68	3.80	2.59		0.61	0.244	0.54	34.1	4	300	100.0	251.79	251.59	0.20%	0.61	43.2	78.8%			
35A	34A	0.83	12	28	159	0.83	3.80	3.14		0.61	0.244	0.75	34.8	4	375	45.0	251.56	251.47	0.20%	0.71	78.4	44.4%			
34A	33A	9.79	132	304	462	2.41	3.80	9.15	2.74	3.35	1.34	3.30	44.5	4	375	54.0	251.42	251.31	0.20%	0.72	79.1	56.2%			
33A	32A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	44.5	4	375	51.0	251.29	251.19	0.20%	0.70	77.6	57.3%			
32A	31A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	44.5	4	375	33.0	251.17	251.10	0.21%	0.73	80.7	55.1%			
31A	20A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	44.5	4	375	59.5	251.08	250.96	0.20%	0.71	78.7	56.5%			
20A	19A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	44.5	4	375	51.0	250.94	250.84	0.20%	0.70	77.6	57.3%			
19A	18A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	44.5	4	375	32.5	250.82	250.76	0.18%	0.68	75.3	59.1%			
18A	12A		0	0	462	2.41	3.80	9.15		3.35	1.34	3.30	44.5	4	375	100.0	250.74	250.57	0.17%	0.65	72.3	61.5%			
12A	11A	5.91	463	1065	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	85.5	250.55	250.38	0.20%	0.71	78.2	84.5%			
11A	10A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	35.5	250.36	250.28	0.23%	0.75	83.2	79.4%			
10A	9A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	62.5	250.26	250.15	0.18%	0.67	73.5	89.9%			
9A	8A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	99.5	250.13	249.93	0.20%	0.71	78.6	84.1%			
8A	7A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	101.5	249.91	249.71	0.20%	0.70	77.8	84.9%			
7A	6A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	100.0	249.69	249.49	0.20%	0.71	78.4	84.3%			
6A	5A		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	375	100.5	249.47	249.27	0.20%	0.71	78.2	84.5%			
5A	5B		0	0	1527	7.95	3.67	29.22		3.35	1.34	4.83	66.1	4	525	30.5	249.12	249.06	0.20%	0.88	190.7	34.7%			
<b>From Hwy7 SPS ESE Trunk to 5B</b>													<b>102.0</b>												
		87.89	3516	8087	8087	42.12	3.05	128.28				22.85	253.1	4	600	2000.0			0.20%	0.97	274.6	92.2%			
5B	4A	17.1	259	596	#####	53.18	2.95	156.64	2.58	5.93	2.17	32.80	324.3	4	525	53.0	249.06	248.96	0.19%	0.86	186.8	173.6%		*****	
4A	3A	1.3	52	120	#####	53.80	2.94	158.20		5.93	2.17	33.14	326.2	4	525	80.0	248.94	248.78	0.20%	0.89	192.3	169.6%		*****	
3A	2A		0	0	#####	53.80	2.94	158.20		5.93	2.17	33.14	326.2	4	525	65.5	248.76	248.62	0.21%	0.92	198.8	164.1%		*****	
<b>Logie N to 2A</b>																									
		7.17	122	281	281	1.46	3.80	5.55				1.86	7.4	4	200	150.0			0.50%	0.74	23.2	32.0%			
2A	SPS		0	0	#####	55.26	2.93	161.86		5.93	2.17	35.00	331.7	4	525	27.5	248.56	248.48	0.29%	1.07	231.9	143.0%		*****	
<b>TOTAL</b>		<b>131.44</b>	<b>4613</b>	<b>#####</b>	<b>#####</b>	<b>55.26</b>	<b>2.93</b>	<b>161.86</b>	<b>5.93</b>	<b>5.93</b>	<b>2.17</b>	<b>35.00</b>	<b>331.7</b>	<b>3717.5</b>			<b>MAX</b>		<b>174%</b>						

**ASSUMPTIONS:**

# of people/lot =	2.3
Per capita flow =	450 Lpcd
Commercial flow =	0.4 L/s/ha
Manning's "n" =	0.013
Institutional Flow =	0.32 L/s/ha
Extraneous Flows (New Areas):	0.26 L/s/ha

**PIPE TYPE:**

1	Concrete
2	Asbestos cement
3	Vitrified clay
4	PVC
5	Other

TOWN OF LINDSAY

SANITARY SEWER CALCULATION SHEET

AREA TRIBUTARY TO RIDOUT STREET PUMPING STATION (2013)

**Ridout St Scenario 3**

DATE: Sep. 05, 2013

From MH	To MH	Res. Area (ha)	No. of Lots	Pop'n	Cum. Pop'n	Cum. Avg. Domestic Q (L/s)	Harmon Peaking Factor	Cum. Peak Domestic Q (L/s)	ICI		Extraneous		Pipe TYPE	Dia. (mm)	Length (m)	U/S Inv. (m)	D/S Inv. (m)	Slope (%)	Vfull (m/s)	Qcap (L/s)	Qpeak/Qcap (%)	Inadequate Velocity	Inadequate Capacity	
									Area (ha)	CUM. (ha Q (L/s))	Flow (L/s)	Qpeak (L/s)												
<b>From Kent St.</b>												<b>158.2</b>												
7A	6A	45.32	0	0	635	3.31	3.92	12.96	0	0	11.8	24.7	4	450	14.0	253.29	253.01	2.00%	2.53	403.2	6.1%			
OOD	OOB	13.56	4	9	23	0.12	4.37	0.52	0	0	3.5	4.0	4	250	74.8	257.68	257.05	0.84%	1.11	54.6	7.4%			
<b>From George St.</b>												<b>331.7</b>												
OOB	OOB	2.12	0	0	23	0.12	4.37	0.52	0	0	4.1	336.3	4	375	82.7	256.97	256.67	0.36%	0.96	105.6	318.5%		*****	
OOB	IIZ		10	23	46	0.24	4.32	1.04	0	0	4.1	336.8	4	375	83.2	256.67	256.33	0.41%	1.01	112.1	300.6%		*****	
JJA	IIZ	5.24	9	21	85	0.44	4.26	1.89	0	0	5.4	7.3	2	200	95.1	259.16	256.32	2.99%	1.80	56.7	12.9%			
IIZ	IYY	1.21	0	0	131	0.68	4.21	2.87	0	0	5.8	340.4	2	400	66.3	256.32	256.01	0.47%	1.14	143.3	237.5%		*****	
IYY	IIX		0	0	131	0.68	4.21	2.87	0	0	5.8	340.4	2	400	78.0	255.98	255.77	0.26%	0.85	106.5	319.6%		*****	
IIX	IIW	8.02	225	518	649	3.38	3.91	13.22	1.15	1	0.46	7.8	353.2	2	400	52.3	255.75	255.61	0.26%	0.85	107.0	330.2%		*****
PPS	IIW	0.73	10	23	23	0.12	4.37	0.52	0	0	8.0	8.6	4	200	45.9	256.28	254.88	3.05%	1.82	57.3	14.9%			
IIW	IIV		0	0	672	3.50	3.90	13.66	1	0.46	8.0	353.9	2	400	39.0	255.58	255.46	0.33%	0.95	118.8	297.8%		*****	
IIV	IIU		2	5	676	3.52	3.90	13.75	1	0.46	8.0	354.0	2	400	35.0	255.45	255.30	0.42%	1.07	135.0	262.3%		*****	
IIU	5A		0	0	676	3.52	3.90	13.75	1	0.46	8.0	354.0	2	400	18.7	255.30	255.15	0.80%	1.48	186.5	189.8%		*****	
EJ	5A	4.90	17	39	94	0.49	4.25	2.09	0	0	1.3	3.4	3	200	164.5	259.57	255.33	2.58%	1.68	52.7	6.4%			
5A	4A	1.92	2	5	775	4.04	3.87	15.62	1	0.46	9.8	357.6	4	450	109.5	254.70	254.17	0.48%	1.25	198.3	180.3%		*****	
EG	4A	5.22	3	7	113	0.59	4.23	2.48	0	0	1.4	3.8	3	200	82.3	257.24	254.82	2.94%	1.79	56.2	6.8%			
4A	3A		2	5	892	4.65	3.83	17.81	1	0.46	11.2	361.2	4	450	80.0	254.14	253.54	0.75%	1.55	246.9	146.3%		*****	
3A	6A		0	0	892	4.65	3.83	17.81	1	0.46	11.2	361.2	4	450	34.0	253.49	253.25	0.71%	1.51	239.5	150.8%		*****	
6A	2A		0	0	1527	7.95	3.67	29.22	1	0.46	22.9	384.4	4	450	20.0	252.53	252.35	0.90%	1.70	270.5	142.1%		*****	
2A	1A	1.52	0	0	1527	7.95	3.67	29.22	1	0.46	23.3	384.8	4	450	109.0	252.34	251.34	0.92%	1.72	273.1	140.9%		*****	
1A	ER		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	384.8	4	450	8.0	250.08	249.98	1.25%	2.00	318.7	120.7%		*****	
ER	KKF		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	384.8	2	400	14.5	249.92	249.69	1.59%	2.09	262.3	146.7%		*****	
KKF	KKG		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	384.8	5	300	67.1	249.63	247.77	2.77%	2.14	151.0	254.8%		*****	
KKG	KKH		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	384.8	1	450	11.2	247.14	247.04	0.89%	1.69	269.4	142.8%		*****	
KKH	PUMP		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	384.8	0	600	2.6	246.85	246.80	1.92%	3.01	851.4	45.2%			
<b>TOTAL</b>		<b>89.76</b>	<b>664</b>	<b>1527</b>	<b>1527</b>	<b>7.95</b>	<b>3.67</b>	<b>29.22</b>	<b>1.15</b>	<b>0.46</b>	<b>23.3</b>	<b>543.0</b>			<b>5900.9</b>					<b>MAX</b>	<b>330%</b>			

<b>ASSUMPTIONS:</b>	
# of people/lot =	2.3
Per capita flow =	450 Lpcd
Indust. / Comm. Flow =	0.4 L/s/ha
Manning's "n" =	0.013
Extraneous Flows:	0.26 L/s/ha
Institutional Flows:	0.32 L/s/ha

<b>PIPE TYPE:</b>	
1	Concrete
2	Asbestos cement
3	Vitrified clay
4	PVC
5	Other

TOWN OF LINDSAY

SANITARY SEWER CALCULATION SHEET

AREA TRIBUTARY TO RIDOUT STREET PUMPING STATION (2013)

**Ridout St Scenario 3 (with Scenario 1 Improvements)**

DATE: Sep. 05, 2013

From MH	To MH	Res. Area (ha)	No. of Lots	Pop'n	Cum. Pop'n	Cum. Avg. Domestic Q (L/s)	Harmon Peaking Factor	Cum. Peak Domestic Q (L/s)	ICI		Extraneous		Pipe TYPE	Dia. (mm)	Length (m)	U/S Inv. (m)	D/S Inv. (m)	Slope (%)	Vfull (m/s)	Qcap (L/s)	Qpeak/Qcap (%)	Inadequate Velocity	Inadequate Capacity	
									Area (ha)	CUM. (ha Q (L/s))	Flow (L/s)	Qpeak (L/s)												
<b>From Kent St.</b>												<b>158.2</b>												
7A	6A	45.32	0	0	635	3.31	3.92	12.96	0	0	11.8	24.7	4	450	14.0	253.29	253.01	2.00%	2.53	403.2	6.1%			
OOD	OOB	13.56	4	9	23	0.12	4.37	0.52	0	0	3.5	4.0	4	250	74.8	257.68	257.05	0.84%	1.11	54.6	7.4%			
<b>From George St.</b>												<b>331.7</b>												
OOB	OOB	2.12	0	0	23	0.12	4.37	0.52	0	0	4.1	336.3	4	375	82.7	256.97	256.67	0.36%	0.96	105.6	318.5%		*****	
OOB	IIZ		10	23	46	0.24	4.32	1.04	0	0	4.1	336.8	4	375	83.2	256.67	256.33	0.41%	1.01	112.1	300.6%		*****	
JJA	IIZ	5.24	9	21	85	0.44	4.26	1.89	0	0	5.4	7.3	2	200	95.1	259.16	256.32	2.99%	1.80	56.7	12.9%			
IIZ	IYY	1.21	0	0	131	0.68	4.21	2.87	0	0	5.8	340.4	2	400	66.3	256.32	256.01	0.47%	1.14	143.3	237.5%		*****	
IYY	IIX		0	0	131	0.68	4.21	2.87	0	0	5.8	340.4	2	400	78.0	255.98	255.77	0.26%	0.85	106.5	319.6%		*****	
IIX	IIW	8.02	225	518	649	3.38	3.91	13.22	1.15	1	0.46	7.8	353.2	4	450	52.3	255.75	255.61	0.26%	0.92	146.4	241.2%		*****
PPS	IIW	0.73	10	23	23	0.12	4.37	0.52	0	0	8.0	8.6	4	200	45.9	256.28	254.88	3.05%	1.82	57.3	14.9%			
IIW	IIV		0	0	672	3.50	3.90	13.66	1	0.46	8.0	353.9	4	450	39.0	255.58	255.46	0.33%	1.02	162.7	217.5%		*****	
IIV	IIU		2	5	676	3.52	3.90	13.75	1	0.46	8.0	354.0	4	450	35.0	255.45	255.30	0.42%	1.16	184.8	191.6%		*****	
IIU	5A		0	0	676	3.52	3.90	13.75	1	0.46	8.0	354.0	4	450	18.7	255.30	255.15	0.80%	1.61	255.3	138.6%		*****	
EJ	5A	4.90	17	39	94	0.49	4.25	2.09	0	0	1.3	3.4	3	200	164.5	259.57	255.33	2.58%	1.68	52.7	6.4%			
5A	4A	1.92	2	5	775	4.04	3.87	15.62	1	0.46	9.8	357.6	4	450	109.5	254.70	254.17	0.48%	1.25	198.3	180.3%		*****	
EG	4A	5.22	3	7	113	0.59	4.23	2.48	0	0	1.4	3.8	3	200	82.3	257.24	254.82	2.94%	1.79	56.2	6.8%			
4A	3A		2	5	892	4.65	3.83	17.81	1	0.46	11.2	361.2	4	450	80.0	254.14	253.54	0.75%	1.55	246.9	146.3%		*****	
3A	6A		0	0	892	4.65	3.83	17.81	1	0.46	11.2	361.2	4	450	34.0	253.49	253.25	0.71%	1.51	239.5	150.8%		*****	
6A	2A		0	0	1527	7.95	3.67	29.22	1	0.46	22.9	384.4	4	450	20.0	252.53	252.35	0.90%	1.70	270.5	142.1%		*****	
2A	1A	1.52	0	0	1527	7.95	3.67	29.22	1	0.46	23.3	384.8	4	450	109.0	252.34	251.34	0.92%	1.72	273.1	140.9%		*****	
1A	ER		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	384.8	4	450	8.0	250.08	249.98	1.25%	2.00	318.7	120.7%		*****	
ER	KKF		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	384.8	2	400	14.5	249.92	249.69	1.59%	2.09	262.3	146.7%		*****	
KKF	KKG		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	384.8	5	300	67.1	249.63	247.77	2.77%	2.14	151.0	254.8%		*****	
KKG	KKH		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	384.8	1	450	11.2	247.14	247.04	0.89%	1.69	269.4	142.8%		*****	
KKH	PUMP		0	0	1527	7.95	3.67	29.22	1	0.46	23.3	384.8	0	600	2.6	246.85	246.80	1.92%	3.01	851.4	45.2%			
<b>TOTAL</b>		<b>89.76</b>	<b>664</b>	<b>1527</b>	<b>1527</b>	<b>7.95</b>	<b>3.67</b>	<b>29.22</b>	<b>1.15</b>	<b>0.46</b>	<b>23.3</b>	<b>543</b>			<b>5900.9</b>					<b>MAX</b>	<b>320%</b>			

<b>ASSUMPTIONS:</b>	
# of people/lot =	2.3
Per capita flow =	450 Lpcd
Indust. / Comm. Flow =	0.4 L/s/ha
Manning's "n" =	0.013
Extraneous Flows:	0.26 L/s/ha
Institutional Flows:	0.32 L/s/ha

<b>PIPE TYPE:</b>	
1	Concrete
2	Asbestos cement
3	Vitrified clay
4	PVC
5	Other

# Appendix C

## Southeast Lindsay Development Area Rate Study

Summary of Estimated Construction Costs - Scenario 1

Date: April 2, 2013 (Updated September 5 2013)

Prepared by: AECOM Canada Ltd.

Item	Qty	Units	Unit Price	Total Price	Benefitting Areas	Comments
<b>S Sanitary Sewer Works</b>						
<b>1 Logie Street Sewer Improvements</b>						
1 450 mm Sewer	145.0	m	\$425	\$61,625		
2 1200 mm Conc. Manhole	4	ea.	\$8,500	\$34,000	E1 (All Areas)	Includes Road Restoration
3 Break into Ex MH	2	ea.	\$1,500	\$3,000		
4 Connect Ex 200 mm dia Sewer from Brenda Court	1	LS	\$2,500	\$2,500		
				\$101,125		
<b>2 SE Trunk Extension from MH 12A to MH38A (FUT)</b>						
1 375 mm Sewer on Logie St	426	m	\$400	\$170,400	1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 1-21	Includes Road Restoration
2 300 mm Sewer on Lindsay Street	300	m	\$375	\$112,500		
3 1200 mm Conc. Manhole	11	ea.	\$8,500	\$93,500		
				\$376,400		
<b>3 South Trunk</b>						
1 250 mm Sewer on Lindsay St N of Hwy 7	750	m	\$350	\$262,500	1-1, 1-2, 1-3, 1-4, 1-5	Includes Road Restoration
2 1200 mm Conc. Manhole	8	ea.	\$8,500	\$68,000		
				\$330,500		
<b>4 New Highway 7 Pumping Station</b>						
1 Pumping Station - 30.7 L/s Capacity	1	L.S.	\$500,000	\$500,000		
2 150 mm Forcemain to Southeast Trunk	900	m	\$350	\$315,000		Includes Road Restoration
3 Tie-in to future San MH on Southeast Trunk	1	ea.	\$2,500	\$2,500	1-1, 1-2, 1-3, 1-4, 1-5	Includes Road Restoration
4 Rock Excavation	225	m <sup>3</sup>	\$150	\$33,750		Provisional Item
5 Erosion Protection Measures	1	L.S.	\$10,000	\$10,000		
6 Dewatering Allowance	1	L.S.	\$10,000	\$10,000		Provisional Item
				\$871,250		
<b>5 George Street Pumping Station Improvements</b>						
1 Pumping Station Expansion to 91.7 L/s Capacity	1	L.S.	\$500,000	\$800,000		
2 Connection to Ex 250mm dia Forcemain	1	L.S.	\$5,000	\$5,000	E1 (All Areas)	Includes Road Restoration
3 Rock Excavation	225	m <sup>3</sup>	\$150	\$33,750		Provisional Item
4 Erosion Protection Measures	1	L.S.	\$25,000	\$25,000		Provisional Item
5 Dewatering Allowance	1	L.S.	\$50,000	\$50,000		Provisional Item
				\$913,750		
<b>8 Engineering and Contingencies</b>						
			<b>Subtotals:</b>	\$2,593,025		
1 Contingencies (10%)				\$259,303		
2 Pumping Station Studies (2 Total)				\$50,000		
3 Design Costs (12%)				\$311,163		
4 Contract Admin & Inspection Costs (5%)				\$129,651		
5 Mobilization / Debolization (6%)				\$155,582		
6 HST (13%)				\$454,834.02		
<b>Total Sanitary Work</b>				<b>\$3,953,557</b>		

**Southeast Lindsay Development Area Rate Study**

**TABLE 2 - COST ESTIMATE - LINEAR WATERMAIN INFRASTRUCTURE TO SERVICE BENEFITING AREA E1**

Item	Qty	Units	Unit Cost	Total Cost	Comments
<b>Water Works - Lindsay Street South</b>					
<b>1 Linear Infrastructure - Distribution System</b>					
1	Tie into existing 450mm AC Pipe at Mary St / Lindsay St S	1	ea.	\$4,000	\$4,000
2	300 mm DR18 PVC on Lindsay St S from Mary St to Hwy 7	2000	m	\$450	\$900,000 Assumes trenching operation in pavement areas
3	300 mm DR18 PVC on Hwy 7 from Lindsay St S easterly	600	m	\$380	\$228,000 Assumes trenching operation in boulevard areas
4	River Crossing	90	m	\$1,900	\$171,000 Supply and place liner
5	Tie into existing 300mm PVC at Logie St	1	ea.	\$3,500	\$3,500
6	Fire Hydrant Sets	14	ea.	\$5,000	\$70,000 Design Criteria spacing is 150m for residential and 75m for commercial
7	300 mm Gate Valves along Lindsay Street & Hwy 7	10	ea.	\$2,600	\$26,000 valves at 300 m spacing
8	Air Release Chamber	1	ea.	\$12,000	\$12,000 Located at high point
9	Drain Valve and Chamber	1	ea.	\$12,000	\$12,000 Located at Scugog River
10	Hydrant access cross ditch	8	ea.	\$1,500	\$12,000 Located along north side of Hwy 7
11	300 mm DR18 PVC on Logie Street from Logie St to approx 880m north	880	m	\$330	\$290,400 Assumes watermain is installed during road construction
12	Fire Hydrant Sets along Logie Street	8	ea.	\$5,000	\$40,000 As per Country Club Estates General Plan of Services
13	300mm Gate Valves along Logie Street	11	ea.	\$2,600	\$28,600 As per Country Club Estates General Plan of Services
	Sub-Total # 1 =			\$1,797,500	
2	Mobilization and Demobilization (6%)			\$107,850	
3	Contingency (10%)			\$179,750	
4	Engineering Design (12%)			\$215,700	
5	Contract Administration & Inspection Costs (5%)			\$89,875	
	Sub-Total # 2 =			\$2,390,675	
6	HST (13%)			\$310,788	
	Sub-Total # 3 =			\$2,701,463	
<b>Total Water Works for Benefiting Area E1</b>				<b>\$2,701,463</b>	

# Appendix D

**Table 1-1  
City of Kawartha Lakes  
South East Development Area - Water Services Net Developable Area**

Updated September 5 2013

AECOM Ref No. Dwg 3-2	Development Type	Gross Area (Ha)	Net Developable Area (Ha)	Benefiting Area	Benefiting Area (Net Developable Area)				Unit Flow Rate (L/sec/Ha)	Flow Rate (L/sec)	Benefiting Area ( Estimated Flows)				
					NA	E1	E2	E3			NA	E1	E2	E3	
n/a	Residential	2.70	2.43	NA	2.43				1.121	2.724	2.724				
n/a	Residential	10.95	9.86	NA	9.86				1.121	11.047	11.047				
1-22	Residential	0.90	0.81	NA	0.81				1.121	0.908	0.908				
1-23	Residential	3.29	2.96	NA	2.96				1.121	3.319	3.319				
1-14	Residential	2.98	2.68	NA	2.68				1.121	3.007	3.007				
1-13	Residential	9.70	8.73	NA	8.73				1.121	9.786	9.786				
1-12	Residential	7.40	6.66	NA	6.66				1.121	7.466	7.466				
1-15	Residential	0.30	0.27	NA	0.27				1.121	0.303	0.303				
1-16	Residential	1.00	0.90	NA	0.90				1.121	1.009	1.009				
1-11	Institutional	2.58	2.58	NA	2.58				0.320	0.826	0.826				
1-9	Residential	2.90	2.61	E1		2.61			1.121	2.926		2.926			
1-10	Residential	3.01	2.71	E1		2.71			1.121	3.037		3.037			
1-7	Residential	9.79	8.81	E1		8.81			1.121	9.877		9.877			
1-7	Commercial	1.18	1.06	E1		1.06			0.400	0.425		0.425			
1-7	Institutional	1.56	1.40	E1		1.40			0.320	0.449		0.449			
1-8	Residential	0.83	0.75	E1		0.75			1.121	0.837		0.837			
1-6	Commercial	0.61	0.61	E1		0.61			0.400	0.244		0.244			
1-21	Residential	1.45	1.31	E1		1.31			1.121	1.463		1.463			
1-5	Residential	4.19	3.77	E1		3.77			1.121	4.227		4.227			
1-3	Commercial	1.24	1.24	E1		1.24			0.400	0.496		0.496			
1-4	Commercial	4.09	4.09	E1		4.09			0.400	1.636		1.636			
1-1	Commercial	22.68	14.74	E1		14.74			0.400	5.897		5.897			
1-2	Residential	11.91	10.72	E1		10.72			1.121	12.016		12.016			
2-17	Residential	44.76	40.28	E2			40.28		1.121	45.158			45.158		
2-18	Residential	17.50	15.75	E2			15.75		1.121	17.656			17.656		
2-19	Residential	13.57	12.21	E2			12.21		1.121	13.691			13.691		
2-20	Residential	12.06	10.85	E2			10.85		1.121	12.167			12.167		
3-30	Commercial	37.56	24.41	E3				24.41	0.400	9.766				9.766	
3-32	Commercial	30.01	19.51	E3				19.51	0.400	7.803				7.803	
3-31	Commercial	27.23	17.70	E3				17.70	0.400	7.080				7.080	
3-33	Commercial	24.52	15.94	E3				15.94	0.400	6.375				6.375	
		<b>314.45</b>	<b>248.36</b>			<b>37.88</b>	<b>53.82</b>	<b>79.10</b>	<b>77.56</b>		<b>203.620</b>	<b>40.395</b>	<b>43.530</b>	<b>88.672</b>	<b>31.023</b>

**Table 1-2  
City of Kawartha Lakes  
South East Development Area - Water Services Net Developable Area**

Updated September 5 201

Area Ref. No.	Development Type	Gross Area (ha.)	Net Developable Area (ha.)	Benefiting Area	Benefiting Area (Net Developable Area)			
					NA	E1	E2	E3
NE Area	Residential	2.70	2.43	NA	2.43			
	Residential	10.95	9.86	NA	9.86			
1	Res Intensification	0.42	0.38	NA	0.38			
	Res Intensification	0.48	0.43	NA	0.43			
	Residential	-	-	NA	-			
2	Residential	2.10	1.89	NA	1.89			
	Residential	0.97	0.87	NA	0.87			
	Residential	0.15	0.13	NA	0.13			
3	Residential	4.00	3.60	NA	3.60			
	Residential	-	-	NA	-			
4	Residential	9.70	8.73	NA	8.73			
	Residential	-	-	NA	-			
	Residential	-	-	NA	-			
5	Residential	7.00	6.30	NA	6.30			
	Residential	-	-	NA	-			
6	Res Intensification	0.45	0.41	NA	0.41			
	Res Intensification	1.00	0.90	NA	0.90			
	Residential	-	-	NA	-			
7	Institutional	2.93	2.93	NA	2.93			
8	Residential	5.00	4.50	E2		4.50		
9	Residential	3.50	3.15	E1		3.15		
	Residential	-	-	E1		-		
10	Res Intensification	2.80	2.52	E1		2.52		
	Residential	1.69	1.52	E1		1.52		
11 & 12	Residential	19.10	17.19	E1		17.19		
	Residential	-	-	E1		-		
	Residential	-	-	E1		-		
13	Residential	39.33	35.40	E2			35.40	
	Residential	0.10	0.09	E2			0.09	
14	Residential	17.63	15.87	E2			15.87	
	Institutional	1.00	1.00	E2			1.00	
15	Residential	12.85	11.57	E2			11.57	
16	Residential	11.62	10.46	E2			10.46	
	Residential	0.05	0.05	E2			0.05	
17	Institutional	0.94	0.94	E1		0.94		
	Residential	0.15	0.14	E1		0.14		
18	Commercial	1.74	1.74	E1		1.74		
	Residential	0.05	0.05	E1		0.05		
19	Residential	1.36	1.22	E1		1.22		
20	Commercial	0.55	0.55	E3		0.55		
	Residential	0.17	0.15	E3		0.15		
	Residential	1.30	1.17	E3		1.17		
21	Residential	3.67	3.30	E3		3.30		
22	Commercial	1.24	1.24	E3		1.24		
23	Commercial	3.98	3.98	E3		3.98		
24	Commercial	21.95	14.27	E3		14.27		
25	Residential	10.97	9.87	E3		9.87		
26	Commercial	37.56	24.41	E3			24.41	
27	Residential	30.01	27.01	E3			27.01	
28	Commercial	27.23	17.70	E3			17.70	
CT	Commercial	24.52	15.94	E3			15.94	
<b>TOTAL LAND AREA</b>		<b>324.91</b>	<b>265.84</b>		<b>38.86</b>	<b>63.00</b>	<b>78.92</b>	<b>85.06</b>

AECOM Ref No. Dwg 3-2	Development Type	Gross Area (Ha)	Net Developable Area (Ha)	Benefiting Area	Benefiting Area (Net Developable Area)			
					NA	E1	E2	E3
Area not shown on Dwg	Residential	2.70	2.43	NA	2.43			
		10.95	9.86	NA	9.86			
1-22	Residential	0.90	0.81	NA	0.81			
1-23	Residential	3.29	2.96	NA	2.96			
1-14	Residential	2.98	2.68	NA	2.68			
1-13	Residential	9.70	8.73	NA	8.73			
1-12	Residential	7.40	6.66	NA	6.66			
1-15	Residential	0.30	0.27	NA	0.27			
1-16	Residential	1.00	0.90	NA	0.90			
1-11	Institutional	2.58	2.58	NA	2.58			
?	Residential		0.00	E2			0.00	
1-9	Residential	2.90	2.61	E1		2.61		
1-10	Residential	3.01	2.71	E1		2.71		
1-7	Residential	9.79	8.81	E1		8.81		
	Commercial	1.18	1.18	E1		1.18		
	Institutional	1.56	1.56	E1		1.56		
2-17	Residential	44.76	40.28	E2			40.28	
2-18	Residential	17.50	15.75	E2			15.75	
2-19	Residential	13.57	12.21	E2			12.21	
2-20	Residential	12.06	10.85	E2			10.85	
1-7	Institutional	1.18	1.18	E1		1.18		
1-7	Commercial	1.56	1.56	E1		1.56		
1-8	Residential	0.83	0.75	E1		0.75		
1-6	Commercial	0.61	0.61	E1		0.61		
??								
1-21	Residential	1.45	1.31	E1		1.31		
1-5	Residential	4.19	3.77	E1		3.77		
1-3	Commercial	1.24	1.24	E1		1.24		
1-4	Commercial	4.09	4.09	E1		4.09		
1-1	Commercial	22.68	14.74	E1		14.74		
1-2	Residential	11.91	10.72	E1		10.72		
3-30	Commercial	37.56	24.41	E3			24.41	
3-32	Commercial	30.01	19.51	E3			19.51	
3-31	Commercial	27.23	17.70	E3			17.70	
3-33	Commercial	24.52	15.94	E3			15.94	
		<b>317.19</b>	<b>251.37</b>		<b>37.88</b>	<b>56.83</b>	<b>79.10</b>	<b>77.56</b>

# Appendix E

# Memorandum

To Peter Middaugh, P.Eng

Pages 4

CC

Subject Lindsay - Modeling of the Proposed Southeastern Extension of Water Mains

From Frikkie Becker, P.Eng

Date April 4, 2013

Project Number 60270252 (Task: 1)

## **Evaluation of the Hydraulic Performance the Proposed Southeastern Extension of Water Mains Under Estimated Peak Load And Fire Water Flow Conditions**

### **1. Introduction and Purpose of Memorandum**

The purpose of this memorandum is to report the results of a basic hydraulic modeling exercise that was performed in March 2013 on a proposed new extension to the water network in the southeast of the Town of Lindsay.

This modeling work has been performed to complement and support the Lindsay Southeast Area Development Rate Study being prepared by CN Watson.

The purpose of the modeling was to determine whether the proposed network extensions, comprising 300 mm diameter pipelines as shown in **Figure 1**, will be sufficient to support fire water flows in addition to the expected peak day demands in this area.

The model setup, assumptions, constraints and results are presented below.

### **2. Reference Model**

TSH, now AECOM, has previously performed hydraulic modeling for the City of Kawartha Lakes on the water network of the Town of Lindsay. The results and outcome of this modeling work are found in a report entitled Lindsay Water Distribution System Model, Final Report, and dated September 2007.

This model is herein shortly referred to as the 2007 Lindsay Water Model, and was used as basis and point of departure for the modeling work reported herein.

### **3. Network Setup and Configuration**

For this assignment the 2007 Lindsay Water Model was modified as follows by using the WaterCAD V8i software:

- a. The configuration of the proposed water mains in the southeast extension was modified to match the latest layout planning for this area, as is shown in **Figure 1**.
- b. Diameters for all mainline pipes in this new extension were set at 300 mm (in accordance with direction given by the City).
- c. Water demands were adjusted to account for revised numbers, as reported in more detail in the next section.

The Hazen-Williams C-factor (internal roughness coefficient) for the new pipelines was set to a conservative value for PVC pipe, namely C=120, to make allowance for ageing. This approach is consistent with the approach that was followed in the 2007 Lindsay Water Model.

#### **4. Water Demand and Peak Flow Rates**

##### **4.1. Daily Water Demand**

Peak daily water demands were estimated and are presented in Lindsay Southeast Area Development Rate Study. These demands were, for the purposes of this modeling, applied as fixed demands at representative nodes in the network. Fire flow was applied in addition thereto, as discussed in the next subsection.

##### **4.2. Fire Flow Requirements**

In this section reference is made to publications by:

- a. The Ontario Ministry of the Environment (MOE): Guidelines For The Design Of Water Distribution Systems, July 1985, which is herein shortly referred to herein as the MOE guidelines; and
- b. Fire Underwriters Survey: Water Supply for Public Fire Protection, 1999

Forthcoming from these documents, the following fire flow scenarios were considered:

- a. A minimum fire flow requirement of 30 L/s applied at various nodes in the model (refer to Par. 1 of Section 2.1.4.4 of the MOE guideline);
- b. A compounded fire flow for a conservative population of between 4,000 and 5,000 people in this area of 144 L/s, applied at the most southerly node of the extended network (refer to Table 8-1 of the MOE Design Guidelines for Drinking-Water Systems);
- c. The rate at which modern fire trucks can spray fire water. Trucks of the type used by the City of Toronto are reported to have a discharge capacity of 126 L/s per unit;
- d. A point fire flow of 174 L/s as calculated for a potential large building of say 1,000 m<sup>2</sup> floor area and of the type that has the least fire resistance. The calculation was done by using the procedure outlined in the above noted publication of the Fire Underwriters Survey. Also please note that there are several strategies for considerably reducing the point fire flow requirements for large buildings and thereby allowing much larger buildings to also be covered under this fire flow allowance. Such strategies include on-site storage of fire water, application of fire resistant building materials and methods and provision of automated sprinklers that are divided into zones.

#### **4.3. Residual pressure requirements**

The guideline for minimum pressure to be sustained in a water network under the fire flow condition is 140 kPa (which is about 14 m of water head). This guideline is used as criterion for assessing the sufficiency of the system when subjected to the various fire water flow scenarios.

#### **5. Modeling Output**

The water demands as applied at representative nodes, and the residual pressures at these nodes as reported by the model, are shown in **Figure 2**. These results are for the largest of the fire flow scenarios noted above, namely 174 L/s, when applied at the southern tip of the proposed network.

The results indicate that the proposed 300 mm diameter watermain should be sufficient to meet the stated fire flow scenarios, in addition to the projected peak day water demands. There is one node located at the south end of the system, servicing the east end of area 1-1, with a residual head of 12.7m which is marginally below the guideline of 14m but given the location of the node and the conservative population estimate used in estimating the fire flow the planned system is considered sufficient. Consideration should be given to connecting this dead end main to the watermains servicing the potential E2 development area.

Please also note the following:

- a. These results are based on theoretical modeling outcomes only and have not been verified in the field with model calibration exercises.
- b. The 2007 Lindsay Water Model used for this analysis has not been updated to account for any changes that might have made to the existing network subsequent to the preparation of that model.
- c. Updating of the base model and calibration with the actual network performance is outside of the scope of this assignment, but can be undertaken if commissioned by the City.

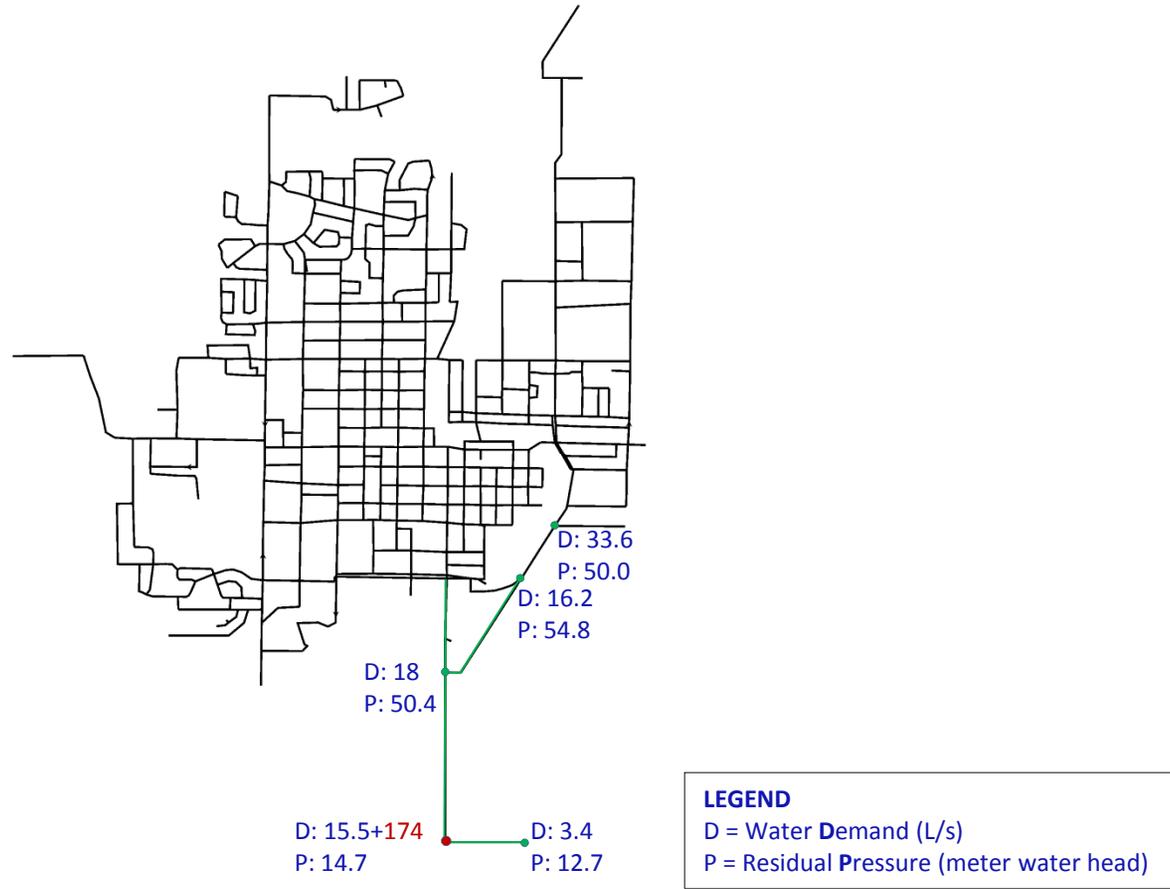
#### **6. Conclusion**

A theoretical analysis has been performed, using a modified version of a previously prepared water network model for the Town of Lindsay, to assess the sufficiency of proposed 300 mm diameter network extensions for meeting fire flows in addition to estimated peak day water demands.

The modeling results indicate that water mains with internal diameter of 300 mm or more would be sufficient.

This finding is subject to the modeling limitations and assumptions, as noted above.

# Scenario: Lindsay Maximum Day



**FIGURE 2: WATER NETWORK MODEL FOR PROPOSED LINDSAY SOUTHEAST EXTENSION – SIMULATION RESULTS**

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**APPENDIX B**

**DEVELOPMENT CHARGE CREDITS**

**City of Kawartha Lakes  
Lindsay South East Development Area  
Summary of Development Charge Credits**

Description	Qty	Units	Unit Price	\$
<b><u>Water</u></b>				
Ron Robinson Credits				
Extra Time Crossing Gas main	1	LS	10,452	10,452
12" Water service from 16" main	1	LS	25,754	25,754
Ron Robinson Credits - Total				36,206
<b><u>Sanitary Sewer</u></b>				
Ron Robinson Credits				
Pumping Station - 176 L/s Capacity	50%	LS	150,000	75,000
Rock Excavation	190.6	m3	125	23,826
600 mm Sewer from Mary St ROW to George St P.S.	232.4	m	435	101,094
600 mm Sewer from Maguire St to Mary St	578	m	370	213,860
1200 mm Conc. Manhole	11	ea	5,500	60,500
Rock Excavation (if required)	58	m3	125	7,250
Ron Robinson Credits - Total				481,530
City Logie/Parkside Project				
Pumping Station - 176 L/s Capacity	500	m2	8	4,170
Tie-in to existing San MH at Parkside Dr	1	LS	1,679	1,679
200 mm Sewer from Parkside Dr to George St	280.5	m	N/A	72,167
1200 mm Conc. Manhole	6	ea	N/A	29,508
Video Inspection	296.5	M	N/A	1,321
City Logie/Parkside Project - Total				108,845

**City of Kawartha Lakes  
Lindsay South East Development Area  
Summary of Other Vendors Sanitary Sewer Credits**

**Sanitary Sewer Works**

Original estimate capital works cost		
Rate of "Construction Price Statistics" Inflation on	\$354,384	224,605
Rate of DC Indexed Inflation on Sanitary/Water Area specific DC	\$1,263	\$961

**South East Area Specific that was not charged**

Year	Building Permit #	<u>Sewer Area</u>	<u>Water Area</u>
		<u>Specific</u>	<u>Specific</u>
		<u>\$ 1,263</u>	<u>\$ 961</u>
2008	5 per Bldg Official's summary	\$ 6,315	\$ 4,805
2009	11	\$ 13,893	\$ 10,571
	1	\$ 1,263	\$ 961
2010	12	\$ 15,156	\$ 11,532
2011	6	\$ 7,578	\$ 5,766
2012	8	\$ 10,104	\$ 7,688
2013	1	\$ 1,263	\$ 961
	44	<u>\$ 55,572</u>	<u>\$ 42,284</u>

Original Balance owing	354,384	224,605
Credit recovery for Sewer	\$ (55,572)	\$ (55,572)
DC owing for Water	<u>\$ 42,284</u>	<u>\$ 42,284</u>
City recognizes Sewer Amount owing	<b>341,096</b>	<b>\$211,317</b>
95 lots remaining * \$2300 Area Specific	<u>\$218,500</u>	<u>\$218,500</u>
Once Subdivision built out - City will reimburse Mr Abraham when they collect DC for sewer from other lots	<u>\$122,596</u>	<u>(\$7,183)</u>

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## **APPENDIX C**

# **PROPOSED LINDSAY SOUTH EAST DEVELOPMENT AREA DEVELOPMENT CHARGES BY-LAW**

# THE CORPORATION OF THE CITY OF KAWARTHA LAKES

## BY-LAW NUMBER 2013-\_\_\_\_

### **A by-law to establish area-specific development charges for the Corporation of the City of Kawartha Lakes – Lindsay South East Development Area**

**WHEREAS** the City of Kawartha Lakes will experience growth through development and re-development;

**AND WHEREAS** development and re-development requires the provision of physical and social services by the City of Kawartha Lakes;

**AND WHEREAS** Council desires to ensure that the capital cost of meeting growth-related demands for or burden on municipal services does not place an excessive financial burden on the City of Kawartha Lakes or its existing taxpayers while at the same time ensuring new taxpayers contribute no more than the net capital cost attributable to providing the current level of municipal services;

**AND WHEREAS** the *Development Charges Act, 1997* (the “Act”) provides that the council of a city may by by-law impose development charges against land to pay for increased capital costs required because of increased needs for services;

**AND WHEREAS** a development charge background study has been completed in accordance with the Act;

**AND WHEREAS** the Council of The Corporation of the City of Kawartha Lakes has given notice of and held a public meeting on the 19<sup>th</sup> day of July, 2013 in accordance with the Act and the regulations thereto;

**NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE CITY OF KAWARTHA LAKES ENACTS AS FOLLOWS:**

**1. INTERPRETATION**

1.1 In this By-law the following items shall have the corresponding meanings:

“Act” means the *Development Charges Act*, as amended, or any successor thereof;

“accessory use” means where used to describe a use, building, or structure that the use, building or structure is naturally and normally incidental, subordinate in purpose of floor area or both, and exclusively devoted to a principal use, building or structure;

“agricultural use” means the use of land and buildings for apiaries, fish farming, animal husbandry or the cultivation of trees, shrubs, flowers, grains, sod, fruits, vegetables and other crops or ornamental plants;

“apartment unit” means any residential unit within a building containing three or more dwelling units where access to each residential unit is obtained through a common entrance or entrances from the street level and the residential units are connected by an interior corridor;

“bedroom” means a habitable room larger than seven square metres, including a den, study or other similar area, but does not include a bathroom, living room, dining room or kitchen;

“board of education” has the same meaning as set out in the *Education Act*, R.S.O. 1990, Chap. E.2, as amended, or any successor thereof;

“Building Code Act” means the *Building Code Act*, S.O. 1992, as amended, or any successor thereof;

“capital cost” means costs incurred or proposed to be incurred by the city or a local board thereof directly or by others on behalf of and as authorized by the city or local board,

- (a) to acquire land or an interest in land, including a leasehold interest,
- (b) to improve land,
- (c) to acquire, lease, construct or improve buildings and structures,
- (d) to acquire, construct or improve facilities including,
  - (i) furniture and equipment other than computer equipment, and
  - (ii) material acquired for circulation, reference or information purposes by a library board as defined in the *Public Libraries Act*, R.S.O. 1990, Chap. P.44, as amended, or any successor thereof; and
  - (iii) rolling stock with an estimated useful life of seven years or more, and
- (e) to undertake studies in connection with any matter under the Act and any of the matters in clauses (a) to (d) above, including the development charge background study

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required for the provision of services designated in this By-law within or outside the city, including interest on borrowing for those expenditures under clauses (a) to (e) above that are growth-related;

“commercial” means any use of land, structures or buildings for the purposes of buying or selling commodities and services, but does not include industrial or agricultural uses, but does include hotels, motels, motor inns and boarding, lodging and rooming houses;

“Council” means the Council of the City of Kawartha Lakes;

“development” means the construction, erection or placing of one or more buildings or structures on land or the making of an addition or alteration to a building or structure that the effect of increasing the size of usability thereof, and includes redevelopment;

“development charge” means a charge imposed with respect to this By-law;

“dwelling unit” means any part of a building or structure used, designed or intended to be used as a domestic establishment in which one or more persons may sleep and are provided with culinary and sanitary facilities for their exclusive use;

“existing” means the number, use and size that existed as of the date this by-law was passed;

“farm building” means any part of a building which is not used for residential purposes and which building is located on 3 or more hectares of land and which building is used solely for farm and farm related activities carried out on the same farm and includes barns, implement sheds, seasonal roadside stands and silos but does not included processing or year round wholesale or retail facilities.

“gross floor area” means:

- (a) in the case of a residential building or structure, the total area of all floors above grade of a dwelling unit measured between the outside surfaces of exterior walls or between the outside surfaces of exterior walls and the centre line of party walls dividing the dwelling unit from any other dwelling unit or other portion of a building; and
- (b) in the case of a non-residential building or structure, or in the case of a mixed-use building or structure in respect of the non-residential portion thereof, the total area of all building floors above or below grade measured between the outside

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surfaces of the exterior walls, or between the outside surfaces of exterior walls and the centre line of party walls dividing a non-residential use and a residential use, except for:

- (i) a room or enclosed area within the building or structure above or below that is used exclusively for the accommodation of heating, cooling, ventilating, electrical, mechanical or telecommunications equipment that service the building;
- (ii) loading facilities above or below grade; and
- (iii) a part of the building or structure below grade that is used for the parking of motor vehicles or for storage or other accessory use;

“industrial” means lands, buildings or structures used or designed or intended for use for manufacturing, processing, fabricating or assembly of raw goods, warehousing or bulk storage of goods, and includes office uses and the sale of commodities to the general public where such uses are accessory to an industrial use, but does not include the sale of commodities to the general public through a warehouse club;

“institutional” means land, buildings, structures or any part thereof used by any organization, group or association for promotion of charitable, educational or benevolent objectives and not for profit or gain. Institutional uses include student residences, nursing homes, and seniors’ accommodation which consist of bedrooms with or without private sanitary facilities, plus common areas for kitchen and eating facilities and common recreation/activity areas;

“Local Board” means a school board, public utility, commission, transportation commission, public library board, board of park management, local board of health, board of commissioners of police, planning board, or any other board, commission, committee, body or local authority established or exercising any power or authority under any general or special Act with respect to any of the affairs or purposes, including school purposes, of the City of Kawartha Lakes or any part or parts thereof;

“local services” means those services, facilities or things which are under the jurisdiction of the city and are related to a plan of subdivision or within the area to which the plan relates in respect of the lands under Sections 41, 51 or 53 of the *Planning Act*, R.S.O. 1990, Chap. P.13, as amended, or any successor thereof;

“multiple dwellings” means all dwellings other than single-detached, semi-detached and apartment unit dwellings;

“non-residential use” means a building or structure of any kind whatsoever used, designed or intended to be used for other than a residential use;

“Official Plan” means the Official Plan adopted for the City, as amended and approved;

“owner” means the owner of land or a person who has made application for an approval for the development of land upon which a development charge is imposed’

“place of worship” means that part of a building or structure that is exempt from taxation as a place of worship under the *Assessment Act*, R.S.O. 1990, Chap. A.31, as amended, or any successor thereof;

“rate” means the interest rate established weekly by the Bank of Canada based on Treasury Bills having a term of 91 days;

“regulation” means any regulation made pursuant to the Act;

“residential dwelling” means a building, occupied or capable of being occupied as a home, residence or sleeping place by one or more persons, containing one or more dwelling units but not including motels, hotels, tents, truck campers, tourist trailers, mobile camper trailers or boarding, lodging or rooming houses;

“residential use” means the use of a building or structure or portion thereof for one or more dwelling units. This also includes a dwelling unit on land that is used for an agricultural use;

“row dwelling” means a building containing three or more attached dwelling units in a single row, each of which dwelling units has an independent entrance from the outside and is vertically separated from any abutting dwelling unit;

“semi-detached dwelling” means a dwelling unit in a residential building consisting of two dwelling units having one vertical wall or one horizontal wall, but not other parts, attached or another dwelling unit where the residential unit are not connected by an interior corridor;

“service” means a service designed in Schedule “A” to this By-law, and “services” shall have a corresponding meaning;

“servicing agreement” means an agreement between a landowner and the city relative to the provision of municipal services to specified land within the city;

“single detached dwelling unit” means a residential building consisting of one dwelling unit and not attached to another structure; and

“Zoning By-Law” means the Zoning By-Law of the City of Kawartha Lakes or any successor thereof passed pursuant to Section 34 of the Planning Act, S.O. 1998.

## **2. DESIGNATION OF SERVICES**

2.1 The categories of services for which development charges are imposed under this By-law are as follows:

- (a) Sanitary Sewer Services;
- (b) Water Services; and
- (c) Studies

2.2 The components of the services designated in section 2.1 are described in Schedule A.

## **3. APPLICATION OF BY-LAW RULES**

3.1 Development charges shall be payable in the amounts set out in this By-law where:

- (a) the lands are located in the area described in Area E1 of the Lindsay South East Development Area as contained in Schedules B and C; and
- (b) the development of the lands requires any of the approvals set out in subsection 3.4(a).

### **Area to Which By-law Applies**

3.2 Subject to section 3.3, this By-law applies to all lands in Area E1 within the Lindsay South East Development Area of City of Kawartha Lakes whether or not the land or use thereof is exempt from taxation under s. 13 or the Assessment Act.

3.3. Notwithstanding clause 3.2 above, this by-law shall not apply to lands that are owned by and used for the purposes of:

- (a) buildings or structures owned by and used for the purposes of any Municipality, County or a local board thereof; or

- (b) a board of education.

### Approvals for Development

- 3.4 (a) Development charges shall be imposed on all lands, buildings or structures that are developed for residential or non-residential uses if the development requires:
- (i) the passing of a zoning by-law or of an amendment to a zoning by-law under section 34 of the *Planning Act*;
  - (ii) the approval of a minor variance under section 45 of the *Planning Act*;
  - (iii) a conveyance of land to which a by-law passed under subsection 50(7) of the *Planning Act* applies;
  - (iv) the approval of a plan of subdivision under section 51 of the *Planning Act*;
  - (v) a consent under section 53 of the *Planning Act*;
  - (vi) the approval of a description under section 50 of the *Condominium Act*, R.S.O. 1990, Chap. C.26, as amended, or any successor thereof; or
  - (vii) the issuing of a permit under the *Building Code Act* in relation to a building or structure.
- (b) No more than one development charge for each service designated in subsection 2.1 shall be imposed upon any lands, buildings or structures to which this By-law applies even though two or more of the actions described in subsection 3.4(a) are required before the lands, buildings or structures can be developed.
- (c) Despite subsection 3.4(b), if two or more of the actions described in subsection 3.4(a) occur at different times, additional development charges shall be imposed if the subsequent action has the effect of increasing the need for services.

### Exemptions

- 3.5 Notwithstanding the provisions of this By-law, development charges shall not be imposed with respect to:
- (a) an enlargement to an existing dwelling unit;
  - (b) one or two additional dwelling units in an existing single detached dwelling; or
  - (c) one additional dwelling unit in any other existing residential building;

- 3.6 Notwithstanding section 3.5(b), development charges shall be imposed if the total gross floor area of the additional one or two units exceeds the gross floor area of the existing dwelling unit.
- 3.7 Notwithstanding section 3.5, development charges shall be imposed if the additional unit has a gross floor area greater than
- i. in the case of a semi-detached or row dwelling, the gross floor area of the existing dwelling unit; and
  - ii. in the case of any other residential building, the gross floor area of the smallest dwelling unit contained in the residential building.
- 3.8 Exemption for Industrial Development:
- 3.8.1 Notwithstanding any other provision of this by-law, no development charge is payable with respect to an enlargement of the gross floor area of an existing industrial building where the gross floor area is enlarged by 50 percent or less.
- 3.8.2 If the gross floor area of an existing industrial building is enlarged by greater than 50 percent, the amount of the development charge payable in respect of the enlargement is the amount of the development charge that would otherwise be payable multiplied by the fraction determined as follows:
- 1) determine the amount by which the enlargement exceeds 50 percent of the gross floor area before the enlargement;
  - 2) divide the amount determined under subsection 1) by the amount of the enlargement
- 3.9 For the purpose of section 3.8 herein, “existing industrial building” is used as defined in the Regulation made pursuant to the Act.

### Amount of Charges

#### Residential

- 3.10 The development charges set out in Schedule D shall be imposed on residential uses of lands, buildings or structures, including a dwelling unit accessory to a non-residential use and, in the case of a mixed use building or structure, on the residential uses in the mixed use building or structure, according to the type of residential unit, and calculated with respect to each of the services according to the type of residential use.

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### Non-Residential

3.11 The development charges described in Schedule D to this by-law shall be imposed on non-residential uses of lands, buildings or structures, and, in the case of a mixed use building or structure, on the non-residential uses in the mixed use building or structure, and calculated with respect to each of the services according to the total gross floor area of the non-residential use.

### Reduction of Development Charges for Redevelopment

3.12 Despite any other provisions of this By-law, where, as a result of the redevelopment of land, a building or structure existing on the same land within 3 years prior to the date of payment of development charges in regard to such redevelopment was, or is to be demolished, in whole or in part, or converted from one principal use to another principal use on the same land, in order to facilitate the redevelopment, the development charges otherwise payable with respect to such redevelopment shall be reduced by the following amounts:

- (a) in the case of a residential building or structure, or in the case of a mixed-use building or structure, the residential uses in the mixed-use building or structure, an amount calculated by multiplying the applicable development charge under subsection 3.10 by the number, according to type, of dwelling units that have been or will be demolished or converted to another principal use; and
- (b) in the case of a non-residential building or structure or, in the case of mixed-use building or structure, the non-residential uses in the mixed-use building or structure, an amount calculated by multiplying the applicable development charges under subsection 3.11, by the gross floor area that has been or will be demolished or converted to another principal use;

provided that such amounts shall not exceed, in total, the amount of the development charges otherwise payable with respect to the redevelopment.

### Time of Payment of Development Charges

3.12 Development charges imposed under this By-law are calculated, payable, and collected upon issuance of a building permit for the development.

- 3.13 Notwithstanding section 3.12, with respect to an approval of a Plan of Subdivision under section 51 of the Planning Act., 1990 amended, the payment of the development charges shall be addressed in the subdivision agreement, subject to any applicable exemptions contained in this By-law, and calculated as follows:
- a) in the case of residential development or the residential portion of a mixed-use development, based upon:
    - i) the proposed number of dwelling units; and
    - ii) with respect to blocks intended for future development, the maximum number of dwelling units permitted under the contemplated zoning;
  - b) in the case of non-residential or the non-residential portion of a mixed-use development, based upon the maximum floor area permitted under the contemplated zoning.
- 3.14 Despite sections 3.12 and 3.12, Council from time to time, and at any time, may enter into agreements providing for all or any part of a development charge to be paid before or after it would otherwise be payable, in accordance with section 27 of the Act.

#### **4. PAYMENT BY SERVICES**

- 4.1 Despite the payment required under subsections 3.11 through 3.14, Council may, by agreement, give a credit towards a development charge in exchange for work that relates to a service to which a development charge relates under this By-law.

#### **5. INDEXING**

- 5.1 Development charges imposed pursuant to this By-law shall be adjusted annually, without amendment to this By-law, on January 1<sup>st</sup> of each year, in accordance with the prescribed index in the Act.

#### **6. SCHEDULES**

- 6.1 The following schedules shall form part of this By-law:

Schedule A	-	Components of Services Designated in section 2.1
Schedule B	-	Map of Lindsay South East Development Area for Sanitary Sewer and Studies Services
Schedule C	-	Map of Lindsay South East Development Area for Sanitary Sewer Services

Schedule D - Schedule of Development Charges

**7. CONFLICTS**

7.1 Where the City and an owner or former owner have entered into an agreement with respect to land within the area to which this By-law applies, and a conflict exists between the provisions of this By-law and such agreement, the provisions of the agreement shall prevail to the extent that there is a conflict.

7.2 Notwithstanding section 7.1, where a development which is the subject of an agreement to which section 7.1 applies, is subsequently the subject of one or more of the actions described in subsection 3.4(a), an additional development charge in respect of the development permitted by the action shall be calculated, payable and collected in accordance with the provisions of this By-law if the development has the effect of increasing the need for services, unless such agreement provides otherwise.

**8. SEVERABILITY**

8.1 If, for any reason, any provision of this By-law is held to be invalid, it is hereby declared to be the intention of Council that all the remainder of this By-law shall continue in full force and effect until repealed, re-enacted, amended or modified.

**9. DATE BY-LAW IN FORCE**

9.1 This By-law shall come into effect at 12:01 AM on \_\_\_\_\_, 2013.

**10. DATE BY-LAW EXPIRES**

10.1 This By-law will expire at 12:01 AM on \_\_\_\_\_, 2018 unless it is repealed by Council at an earlier date.

PASSED THIS \_\_\_\_\_ day of \_\_\_\_\_, 2013.

\_\_\_\_\_  
Mayor

\_\_\_\_\_  
City Clerk

**SCHEDULE "A" TO BY-LAW**

**COMPONENTS OF SERVICES DESIGNATED IN SUBSECTION 2.1**

Sanitary Sewer Services

Sanitary Sewer Collection Infrastructure

Water Services

Water Distribution Infrastructure

Studies

Growth Related Studies





**SCHEDULE "D" TO BY-LAW****SCHEDULE OF DEVELOPMENT CHARGES**

TOTAL DC PAYABLE BY SERVICE	\$/ Residential Unit	\$/Non-Res. GFA in Sq.Mt.
Sanitary Sewer	2,474	14.18
Water	2,008	7.01
Studies	50	0.15
Total	4,532	21.33