

**ENVIRONMENTAL COMPLIANCE APPROVAL**

NUMBER A-500-4277838045

Version: 1.0

Issue Date: October 10, 2024

*Pursuant to section 20.3 of the Environmental Protection Act, Revised Statutes of Ontario (R.S.O.) 1990, c. E. 19 and subject to all other applicable Acts or regulations this Environmental Compliance Approval is issued to:*

2374868 ONTARIO INC.

6678 WELLINGTON RD 34 ROAD  
CAMBRIDGE ONTARIO  
N3C 2V4

*For the following site:*

6678 Wellington Road 34

Town of Puslinch, County of Wellington

*You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:*

a waste disposal site

to be used for the processing of the following types of waste:

excess soil, including liquid soil

## **DEFINITIONS**

*For the purpose of this environmental compliance approval, the following definitions apply:*

1. "Approval" means this entire provisional Environmental Compliance Approval document, issued in accordance with Part II.1 of the EPA, and includes any schedules to it, the application and the supporting documentation listed in Schedule 1, as amended from time to time;
2. "Design and Operations Report" means the document describing all on-site operations, procedures and environmental protection measures, further described in the conditions of this Approval;
3. "Director" means any Ministry employee appointed in writing by the Minister pursuant to section 5 of the EPA as a Director for the purposes of Part V of the EPA;
4. "District Manager" means the District Manager of the local district office of the Ministry in which the Site is geographically located;
5. "EPA" means Environmental Protection Act, R.S.O. 1990, c. E.19, as amended;
6. "Monitoring Plan" means the groundwater and surface water monitoring plan described in Section 6 in Item 3 in Schedule 1;
7. "Minister" means the Minister of the Environment, Conservation and Parks, 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;

8. "Ministry" means the ministry of the Minister;
9. "Operator" means any person, other than the Owner's employees, authorized by the Owner as having the charge, management or control of any aspect of the Site, and includes its successors or assigns;
10. "Owner" means any person that is responsible for the establishment or operation of the Site being approved by this Approval, and includes 2374868 Ontario Inc., its successors and assigns;
11. "OWRA" means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended;
12. "PA" means the Pesticides Act, R.S.O. 1990, c. P.11, as amended;
13. "Provincial Officer" means any person designated in writing by the Minister as a provincial officer pursuant to section 5 of the OWRA or section 5 of the EPA or section 17 of PA;
14. "Regional Director" means the Regional Director of the local regional office of the Ministry in which the Site is located;
15. "Reg. 347" means R.R.O. 1990, Regulation 347: General - Waste Management, made under the EPA, as amended from time to time;
16. "Site" means the facility located at 6678 Wellington Road 34, Cambridge, Ontario, authorized by this Approval;
17. "Soil Rules" means the Ministry's "Rules for Soil Management and Excess Soil Quality Standards" document;
18. "Trained Personnel" means persons knowledgeable in the following through instruction and/or practice:
  - a. relevant waste management legislation, regulations and guidelines;
  - b. major environmental concerns pertaining to the material being handled;
  - c. occupational health and safety concerns pertaining to the processes and materials being handled;
  - d. site management procedures, including the use and operation of the equipment that person is required to operate for the processes and materials being handled by that person;
  - e. emergency response procedures;
  - f. specific written procedures for the control of nuisance conditions;
  - g. specific written procedures for management of unacceptable loads;
  - h. the requirements of this Approval.

## TERMS AND CONDITIONS

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*You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:*

1. The Owner and Operator shall ensure compliance with all the conditions of this Approval and shall ensure that any person authorized to carry out work on or operate any aspect of the Site is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
2. Any person authorized to carry out work on or operate any aspect of the Site shall comply with the conditions of this Approval.
3.
  1. Except as otherwise provided by this Approval, the Site shall be designed, developed, built, operated and maintained in accordance with the application for this Approval, dated March 27, 2024, and the supporting documentation listed in Schedule 1.

2.
  1. Construction and installation of the aspects of the Site described in the application for this Approval must be completed within 5 years of the later of:
    1. the date this Approval is issued; or
    2. if there is a hearing or other litigation in respect of the issuance of this Approval, the date that this hearing or litigation is disposed of, including all appeals.
  2. This Approval ceases to apply in respect of the aspects of the Site noted above that have not been constructed or installed before the later of the dates identified in Condition 3.2.1 above.
4. Where there is a conflict between a provision of any document, including the application, referred to in this Approval, and the conditions of this Approval, the conditions in this Approval shall take precedence.
5. Where there is a conflict between the application and a provision in any documents listed in Schedule 1, the application shall take precedence, unless it is clear that the purpose of the document was to amend the application and that the Ministry approved the amendment.
6. Where there is a conflict between any two documents listed in Schedule 1, other than the application, the document bearing the most recent date shall take precedence.
7. The requirements of this Approval are severable. If any requirement of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this Approval shall not be affected thereby.
8. The issuance of, and compliance with the conditions of, this Approval does not:
  1. relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including municipal by-laws relating to zoning or site plan approval; or
  2. limit in any way the authority of the Ministry to require certain steps be taken or to require the Owner and Operator to furnish any further information related to compliance with this Approval.
9. The Owner and Operator shall take steps to minimize and ameliorate any adverse effect (as defined in the EPA) or impairment of air quality or water quality resulting from operations at the Site, including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
10. Despite an Owner, Operator or any other person fulfilling any obligations imposed by this Approval the person remains responsible for any contravention of any other condition of this Approval or any applicable statute, regulation, or other legal requirement resulting from any act or omission that caused the adverse effect (as defined in the EPA) or impairment of water quality.
11. The Owner shall notify the Director in writing, and forward a copy of the notification to the District Manager, within 30 days of the occurrence of any of the following changes:
  1. the ownership of the Site
  2. the Owner or Operator of the Site;
  3. the name or address of the Owner or Operator;
  4. the partners, where the Owner or Operator is or at any time becomes a partnership and a copy of the most recent declaration filed under the Partnerships Act, R.S.O. 1990, c. P.5 shall be included in the notification; or
  5. the directors, where the Owner of the Operator is or at any time becomes a corporation, and a copy of the most current information filed as required by the Corporations Information Act, R.S.O. 1990, c. C.39 shall be included in the notification.
12. No portion of this Site shall be transferred or encumbered prior to or after closing of the Site unless the Director is notified in advance and sufficient financial assurance is deposited with the Ministry to ensure that these conditions will

be carried out.

13. No person shall hinder or obstruct a Provincial Officer in the performance of their duties, including any and all inspections authorized by the OWRA, the EPA or the PA of any place to which this Approval relates, and without limiting the foregoing to:
  1. enter upon the premises where the Site is located, or the location where the records required by the conditions of this Approval are kept;
  2. have access to, inspect, and copy any records required by the conditions of this Approval;
  3. inspect the practices, procedures, or operations required by the terms and conditions of this Approval; and
  4. sample and monitor for the purposes of assessing compliance with the conditions of this Approval or the EPA, the OWRA or the PA.
14. No later than 20 days from the date of issuance of this Approval, the Owner shall submit financial assurance as defined in Section 131 of the EPA to the Director in the amount of \$119,505. This financial assurance shall be in a form and amount acceptable to the Director and shall provide sufficient funds to pay for compliance with and performance of any action specified in this Approval, including Site clean-up, monitoring and the disposal of all quantities of waste on-site, closure and post-closure care of the Site and contingency plans for the Site.
15. Commencing on March 31, 2029, and every 5 years thereafter, the Owner shall provide to the Director a re-evaluation of the amount of the financial assurance required to facilitate the actions described under condition 14 above. Additional financial assurance, if required, must be submitted to the Director within 20 days of written acceptance of the re-evaluation by the Director.
16. The amount of financial assurance is subject to review at any time by the Director and may be amended at his/her discretion. If any financial assurance is scheduled to expire or notice is received, indicating financial assurance will not be renewed, and satisfactory methods have not been made to replace the financial assurance at least 60 days before the financial assurance terminates, the financial assurance shall forthwith be replaced by cash.
17. Any information requested by the Ministry concerning the Site and its operation under this Approval, including, but not limited to, any records required to be kept by this Approval, shall be provided in a timely manner to the Ministry, upon request. Records shall be retained for 7 years unless otherwise authorized in writing by the Director.
18. The receipt of any information by the Ministry or the failure of the Ministry to prosecute any person or to require any person to take any action, under this Approval or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:
  1. an approval, waiver, or justification by the Ministry of any act or omission of any person that contravenes any term or condition of this Approval or any statute, regulation or other legal requirement; or
  2. acceptance by the Ministry of the information's completeness or accuracy.
19.
  1. The receipt, unloading, loading and transfer of waste and other waste-derived materials may be carried out at the Site between the hours of 7:00am and 6:00pm, Monday through Friday, unless otherwise restricted by municipal by-laws.
  2. Waste may be processed and managed at the Site 24 hours per day, 7 days per week, unless otherwise restricted by municipal by-laws.
20. Only waste generated in the province of Ontario shall be accepted at the Site.
21. No waste other than non-hazardous excess soil that is liquid shall be accepted at the Site.
22. The Site is approved for the following waste management activities:
  1. The receipt, temporary storage, and transfer of excess soil that is liquid, and the temporary storage, testing and

transfer of dry processed soil, process water and other process derivatives.

2. The processing of excess soil that is liquid soil using the equipment and methods described in Item 1 of Schedule 1, including the passive dewatering of excess soil that is liquid using lined swales and ponds.
  3. The temporary storage of process water in lined swales and ponds prior to testing and discharge.
- 23.
1. The amount of waste received at the Site shall not exceed 125 tonnes per day.
  2. The amount of waste and waste-derived materials present at the Site at any one time shall not exceed the following:
    1. 440 cubic metres of liquid waste, including excess soil that is liquid and process water, contained in lined swales and ponds on-site; and
    2. 525 tonnes of all other waste, including dry processed soil and process derivatives.
  3. The Owner shall refuse any load if the receipt of that load could reasonably be expected to cause non-compliance with this Approval, including the receipt and storage limitations set out above.
- 24.
1.
    1. Trained Personnel shall supervise all shipments of waste received at the Site. Prior to any shipment being unloaded, Trained Personnel shall review the accompanying information for that shipment, and examine the contents of the truck where possible, to ensure the waste matches the description provided and that the waste is permitted to be received further to the conditions of this Approval. If any shipment is suspected of containing unapproved waste, that shipment shall be refused and shall not be unloaded at the Site.
    2. Trained Personnel shall examine all shipments of waste while they are being unloaded. If at any time a shipment is discovered to contain unapproved material, the shipment shall be refused and all portions of the shipment that can be recovered shall be removed from the Site.
  2. In the event that a shipment of waste is rejected from the Site, the Owner shall forthwith notify the District Office of the following in writing:
    1. the name of the company that brought the rejected load to the Site;
    2. the license plate number of the vehicle that brought the rejected load to the Site;
    3. a description of the rejected waste and the reason for rejecting the shipment;
    4. the destination of the rejected waste if the driver provides that information.
  3. All liquid soil shall be unloaded directly into the designated soil management area in a manner that prevents spills during transfer.
  4. The Owner shall ensure that:
    1. no process water is discharged directly to a storm sewer, to any waterbody or any other part of the natural environment, or otherwise in a manner that requires approval under Section 53 of the OWRA, unless such an approval is in effect for the Site; and
    2. all process water is otherwise managed in accordance with applicable municipal, provincial and federal requirements, which may include discharge to sanitary sewer as permitted by the local municipality or disposal of the process water off-site in a facility permitted to receive such material.
  5. Notwithstanding Condition 24.4 above, process water may be infiltrated at the Site provided the waste is tested prior to discharge in accordance with the Monitoring Plan.
  6. Dry excess soil recovered from processing of excess soil that is liquid may be stored outdoors in stockpiles in designated areas on an impermeable surface, with any contact water generated to be directed to the on-site drainage swale.

7. The Owner shall ensure that the management of dry excess soil is carried out in a manner that minimizes impacts from wind-blown dust.
  8. Dry excess soils that have been tested shall remain segregated from all other soils on-site.
25. No processed soil shall leave the Site for reuse unless it has been sampled, analysed and managed in accordance with the following:
1. The Owner shall ensure that soil sampling, analysis and the number of samples collected for each stockpile is in accordance with Table 2 of Schedule E in Ontario Regulation 153/04.
  2.
    1. The Owner shall ensure that discrete samples are taken and analysed for:
      1. metals;
      2. hydride-forming metals;
      3. petroleum hydrocarbons (PHCs);
      4. benzene, toluene, ethylbenzene, xylene (BTEX);
      5. volatile organic compounds (VOCs);
      6. polycyclic aromatic hydrocarbons (PAHs);
      7. acid/base/neutral compounds (ABNs);
      8. chlorophenols (CPs).
    2. The Owner shall ensure that each processed soil load leaving the Site is tested in accordance with Schedule 9 in Reg. 347 ("slump test") to ensure the processed soil is solid.
    3. The Owner shall ensure that any additional sampling and analysis specific to the receiving site shall be carried out as required by the local municipality, the local conservation authority and any applicable federal/provincial legislation.
    4. Should the receiving site be subject to the requirements set out in O. Regulation 153/04, the Owner shall ensure that any additional sampling and analysis specific to the receiving site shall be carried out as recommended by the Qualified Person for the receiving site.
  3.
    1. When determining bulk concentrations of contaminants in the processed soil to verify compliance with the Soil Standards, the testing shall be in compliance with the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated July 1, 2011, as amended and in accordance with the industry standards.
    2. The Owner shall submit the samples to an accredited laboratory for the required analysis. All samples shall be handled in accordance with the instructions of the accredited laboratory carrying out the analytical testing.
  4. Processed soil to be sent off-site for beneficial reuse as described Section 5(1)3 in Ontario Regulation 406/19 shall only be sent off-site for reuse in accordance with Section 3 of Ontario Regulation 406/19 and the Soil Rules. All other processed soil shall only be transferred off-site to a waste disposal site that is approved to accept that type of material in accordance with the Environmental Compliance Approval for that site, or to a location not required to obtain an Environmental Compliance Approval to manage that material.
  5. Rock (having a same meaning as in Ontario Regulation 406/19) that does not meet the definition of inert fill set out in Reg. 347 shall only be transferred off-site to a waste disposal site that is approved to accept that type of material in accordance with the Environmental Compliance Approval for that site, or to a location not required to obtain an Environmental Compliance Approval to manage that material.
26. A sign shall be posted and maintained at the entrance to the Site in a manner that is clear and legible, and shall include

the following information:

1. the name of the Site and Owner;
2. this Approval number;
3. the name of the Operator;
4. the normal hours of operation as described in Condition 19 above;
5. the allowed materials that may be accepted at the Site, and any materials explicitly prohibited by conditions of this Approval;
6. a telephone number to which complaints may be directed; and
7. a twenty-four (24) hour emergency telephone number (if different from above).

27. The Site shall be operated and maintained in a secure manner, such that unauthorized persons cannot enter the Site.

28. 1. The Owner shall:

1. construct liners under all soil storage areas and under all process water collection/storage and conveyance pathways on-site no later than 90 days from the date of issuance of this Approval in order to prevent uncontrolled infiltration of process water or contact water at the Site;
2. submit as-built drawings showing construction details for the above-noted liners to the Director no later than 120 days from the date of issuance of this Approval;
3. maintain the above-noted liners in good condition at all times.

2. The Owner shall ensure that the Site is monitored in accordance with the Monitoring Plan noted in Item 3 in Schedule 1, including:

1. sampling of the groundwater wells MW01-20, MW02-20, MW03-20, MW4-23, MW5-23, BH213, BH214, BH219 and the two on-site water supply wells AGW1, APW1 on a quarterly basis with samples to be analyzed for metals, VOCs, PHCF1-F4, SVOCs, and PAHs;
2. sampling of the stormwater management pond on a weekly basis with samples to be analyzed for metals, VOCs, PHCF1-F4, SVOCs, and PAHs;
3. measurement of the static groundwater levels at the eight groundwater monitoring wells (excluding supply wells) quarterly during the groundwater sampling events.

3. All samples shall be submitted to a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory for analysis.

4. Each surface water sample shall be compared against the limits set out in Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Coarse Textured Soils, as provided in the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

5. Process water shall be stored in the on-site temporary holding pond until it has been tested. Process water that does not meet Table 2 Standards as noted above shall not be released into the natural environment, but shall be removed from the Site for treatment or disposal at an approved facility.

6. The Owner shall prepare and submit to the District Manager a groundwater monitoring report, on an annual basis, within 90 days following the end of each operational season. The first report shall cover the first annual period following the date of issuance of this Approval, with subsequent reports covering successive annual periods thereafter.

7. The annual groundwater report shall be prepared in accordance with the following:

1. The report shall be prepared by a qualified person who is a professional geoscientist (P. Geo.) and/or a registered professional engineer (P. Eng.) with relevant hydrogeological expertise.
2. The report shall contain a summary and interpretation of the groundwater monitoring data, and shall include an assessment of the following:
  1. groundwater flow direction;
  2. groundwater quality analytical results;
  3. a statement as to the adequacy of the groundwater monitoring program;
  4. a statement as to the adequacy of the parameters of concern, trigger threshold values and contingency measures under the Groundwater Trigger Mechanism and Contingency Plan as recognized in this Approval.
3. The report shall include a statement from the qualified person on the effectiveness of any engineered controls and associated operational practices in place to mitigate environmental impacts.
4. The report shall include a statement from the qualified person on whether the Reasonable Use Guideline has been met at the property boundary in accordance with the Ministry document entitled "Guideline B-7, Incorporation of the Reasonable Use Concept into Groundwater Management" dated 1994.
5. No modification shall be made to the groundwater monitoring program unless permitted through an amendment to this Approval.
8. The Owner shall adopt the preliminary Trigger Response Plan for the groundwater monitoring program as described in Item 2 in Schedule 1.
9. Within 30 days of collecting 2 years of groundwater monitoring data, and no more than 25 months from the date of issuance of this Approval, the Owner shall submit to the District Manager a Groundwater Trigger Mechanism and Contingency Plan that is protective of drinking water. The groundwater parameters of concern shall be determined after collecting 2 years of groundwater quality data in accordance with the groundwater monitoring program described in this Approval. This document shall be prepared by a qualified person who is a registered professional geoscientist (P. Geo.) and/or a registered professional engineer (P. Eng.) with relevant hydrogeological expertise, and shall be prepared in accordance with the following:
  1. The document shall include a proposal for site-specific groundwater trigger threshold values for parameters of concern in accordance with the Ministry's Guideline B-7 document noted above.
  2. The document shall include proposed trigger mechanisms and contingency measures for the Site.
  3. Once approved by the District Manager, trigger threshold values, trigger mechanisms and contingency measures shall be incorporated into the groundwater monitoring plan for the Site.
  4. No modifications shall be made to the Groundwater Trigger Mechanism and Contingency Plan unless permitted through an amendment to this Approval.
10. No later than 90 days from the date of issuance of this Approval, the Owner shall prepare a Spill Prevention and Contingency Plan for that Site that describes the infrastructure and procedures that will be in place at the Site to prevent spills and all contingency measures to be employed in the event of a spill at the Site.
11. No later than 90 days from the date of issuance of this Approval, the Owner shall prepare a plan to prevent impacts to groundwater from the storage and use of winter maintenance materials including salt.
12. The Owner shall ensure that any water taking is only carried out in accordance with a Permit to Take Water where such a permit is required.
29. The Owner shall maintain a training plan to be used to train all employees that operate the Site.
30. The Owner shall ensure that Trained Personnel are available at all times during the hours of operation of this Site, and that Trained Personnel supervise all management of excess soils that are liquid, processed soils, and process water and

other process derivatives at the Site.

31. An inspection of the entire Site and all equipment on-site shall be conducted each day the Site is in operation to ensure that: the Site is secure; that the operation of the Site is not causing any nuisances; that the operation of the Site is not causing any adverse effects on the environment; and that the Site is being operated in compliance with this Approval. Any deficiencies discovered as a result of the inspection shall be remedied immediately or as soon as practicable, which may require temporarily ceasing operations at the Site if needed.
32. A record of the inspections, including the following information, shall be kept in the daily log book:
  1. the name and signature of person that conducted the inspection;
  2. the date and time of the inspection;
  3. a list of any deficiencies discovered;
  4. any recommendations for remedial action; and
  5. the date, time and description of actions taken.
33. The Site shall be operated and maintained such that vermin, vectors, dust, litter, odour and noise do not create a nuisance.
34. If at any time the Owner receives a complaint regarding an adverse effect (as defined in the EPA) due to operation of the Site, the Owner shall respond to the complaint according to the following procedure:
  1. The Owner shall record and number each complaint, either electronically or in a separate log book, along with the following information:
    1. the nature of the complaint;
    2. the name, address and telephone number of the complainant (if provided);
    3. the date and time the complaint was received;
    4. a description of the weather conditions at the time of the complaint;
    5. a description of the liquid soils, processed soils and process water handling activities taking place at the time of the complaint; and
    6. a description of the known or suspected activity causing the complaint.
  2. The Owner shall:
    1. initiate appropriate steps to determine all possible causes of the complaint;
    2. proceed to take the necessary actions to eliminate the cause of the complaint;
    3. notify the District Manager of the complaint within 24 hours of receiving the complaint;
    4. forward a written response to the District Manager within 5 business days of receiving the complaint, with a copy to the complainant if they have identified themselves, that describes the actions taken to address the complaint; and
    5. forward daily updates to the District Manager, if requested, until the complaint is resolved.
  3. The Owner shall complete and retain on-site a report written within 10 business days of the complaint date, including:
    1. the information required in conditions 34.1 and 34.2.4 above;
    2. a list of the actions taken to resolve the complaint; and

3. recommendations for any remedial measures, managerial changes or operational changes that would reasonably avoid the recurrence of similar incidents in the future.

35. The Owner shall prepare and provide a copy of an emergency response plan to the Fire Department within 30 days of the issuance of this Approval.

36. The emergency response plan shall be kept up to date, and a copy shall be retained and accessible to all staff at all times.

37. The equipment, materials and personnel requirements outlined in the emergency response plan shall be immediately available on the Site at all times. The equipment shall be kept in a good state of repair and in a fully operational condition.

38. Each staff member that operates the Site shall be fully trained in the use of the equipment they are required to operate under the emergency response plan and in the procedures to be employed in the event of an emergency.

39. The Owner shall immediately take all measures necessary to contain and clean up any spill (as defined in the EPA) which may result from the operation of this Site and immediately implement the emergency response plan if required.

40. A Closure Plan shall be submitted to the Director for approval, with a copy to the District Manager, no later than six (6) months before the planned closure date of the Site. The Closure Plan shall include, at a minimum, a description of the work that will be done to facilitate closure of the Site and a schedule for completion of that work.

41. Upon closure, the Site shall be closed in accordance with the approved Closure Plan.

42. No more than 10 days after closure of the Site, the Owner shall notify the Director, in writing, that the Site is closed and that the approved Closure Plan has been implemented.

43. A daily log shall be maintained at the Site, either electronically or in written format, and shall include the following information as a minimum:

1. the date;

2. quantities and sources of all waste received at the Site;

3. estimated quantities of all stockpiled soil on-site at the end of each operating day;

4. quantities and destinations of all waste and waste-derived materials shipped from the Site;

5. a record of all sampling and analysis carried out further to the conditions of this Approval;

6. a record of daily inspections required by this Approval;

7. a record of all maintenance or repair activities carried out on any impermeable liners, water storage or conveyance features, or other waste management infrastructure and equipment on-site;

8. a record of any process upsets or spills with the potential to enter the natural environment, the nature of the spill or process upset and the action taken for the clean up or correction of the spill, the time and date of the spill or process upset, and for spills, the time that the Ministry and other persons were notified of the spill in fulfilment of the reporting requirements in the EPA .

9. a record of any refusals, including the types and amounts of waste refused, reasons for refusal and actions taken;

10. a record of all complaints received regarding operations at the Site.

44. 1. By March 31, 2025, the Owner shall prepare a written report that covers the period from the date of issuance of this Approval until March 31, 2025 that shall be kept on-site and made available to any Provincial Officer upon request.

2. By March 31, 2026, and on an annual basis thereafter, the Owner shall prepare a written report for the previous

calendar year that shall be kept on-site and made available to any Provincial Officer upon request.

3. The report noted above shall include, at a minimum, the following information:
  1. a detailed monthly summary of the type and quantity of all incoming and outgoing liquid soils, processed soils, process water, rock and debris and the destination of all outgoing liquid soils, processed soils, process water, rock and debris along with a summary of all sampling and analysis for outgoing materials;
  2. the results of the sampling and analysis required under the Monitoring Plan;
  3. any environmental and operational problems, that could negatively impact the natural environment (as defined in the EPA), encountered during the operation of the Site and during the facility inspections and any mitigative actions taken;
  4. any changes to the emergency response plan or the Design and Operations Report since the last Annual Report;
  5. any recommendations to minimize environmental impacts from the operation of the Site and to improve Site operations and monitoring programs in this regard.

## REASONS

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*The reasons for the imposition of these terms and conditions are as follows:*

1. 1. The reason for the definitions section is to simplify the wording of the subsequent conditions and define the specific meaning of terms as used in this Approval.
2. The reason for Conditions 1, 2, 4, 5, 6, 7, 8, 9, 10 and 13 is to clarify the legal rights and responsibilities of the Owner and Operator.
3. The reason for Condition 3 is to ensure that the Site is operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.
4. The reasons for Condition 11 are to ensure that the Site is operated under the corporate name which appears on the application form submitted for this approval and to ensure that the Director is informed of any changes.
5. The reasons for Condition 12 are to restrict potential transfer or encumbrance of the Site without the approval of the Director and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this Approval.
6. The reason for Conditions 14, 15 and 16 is to ensure that sufficient funds are available to the Ministry to clean up the Site in the event that the Owner is unable or unwilling to do so.
7. The reason for Conditions 17 and 18 is to ensure that appropriate Ministry staff have ready access to the Site for inspection of facilities, equipment, practices and operations required by the conditions in this Approval. This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the EPA, OWRA and PA.
8. The reason for Condition 19 is to specify the hours of operation for the Site.

9. The reason for Condition 20 is to specify the approved service area from which waste may be accepted at the Site.
10. The reasons for Conditions 21, 22 and 23 are to specify the types of materials that may be accepted at the Site, the maximum amounts of waste that may be stored at the Site, the maximum rate at which the Site may receive and ship waste and the allowable methods of processing based on the Owner's application and supporting documentation.
11. The reason for Condition 24 is to ensure that all wastes received at the Site are properly identified and classified to ensure they are managed in a manner that protects the health and safety of people and the environment.
12. The reasons for Condition 25 is to ensure that all processed material is testing and to ensure that any processed material is only sent off-site for reuse to an appropriate receiving facility.
13. The reason for Condition 26 is to ensure that users of the Site are fully aware of important information and restrictions related to Site operations and access under this Approval.
14. The reason for Condition 27 is to ensure the controlled access and integrity of the Site by preventing unauthorized access when the Site is closed and no site attendant is on duty.
15. The reason for Conditions 28 and 33 is to ensure that the Site is operated in a manner which does not result in a nuisance or a hazard to the health and safety of people and the environment, and to ensure that the Site is monitored to prevent and address impacts groundwater.
16. The reason for Conditions 29 and 30 is to ensure that the Site is operated by properly Trained staff in a manner which does not result in a hazard or nuisance to people or the environment.
17. The reason for Conditions 31 and 32 is to ensure that inspections of all Site grounds and infrastructure are carried out on a regular basis, and that detailed records of Site inspections are recorded and maintained for compliance and information purposes.
18. The reason for Condition 34 is to ensure that any complaints regarding Site operations at the Site are responded to in a timely manner.
19. The reasons for Conditions 35, 36, 37, 38 and 39 is to ensure that an Emergency Response Plan is developed and maintained at the Site, and that staff are properly trained in the operation of the equipment used at the Site and emergency response procedures.
20. The reason for Conditions 40, 41 and 42 is to ensure that the Site is closed in accordance with Ministry standards and to protect the health and safety of the public and the environment.
21. The reason for Condition 43 is to provide for the proper assessment of effectiveness and efficiency of site design and operation, their effect or relationship to any nuisance or environmental impacts, and the occurrence of any public complaints or concerns. Record keeping is necessary to determine compliance with this Approval, the EPA and its regulations.
22. The reason for Condition 44 is to ensure that regular review of site development, operations and monitoring data is documented and any possible improvements to site design, operations or monitoring programs are identified. An annual report is an important tool used in reviewing site activities and for determining the effectiveness of

site design.

## APPEAL PROVISIONS

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In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me and the Ontario Land Tribunal, within 15 days after the service of this notice, require a hearing by the Tribunal. You must also provide notice to, the Minister of the Environment, Conservation and Parks in accordance with Section 47 of the *Environmental Bill of Rights, 1993* who will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

- I. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- II. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

- I. The name of the appellant;
- II. The address of the appellant;
- III. The environmental compliance approval number;
- IV. The date of the environmental compliance approval;
- V. The name of the Director, and;
- VI. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar* Ontario Land Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5 <a href="mailto:OLT.Registrar@ontario.ca">OLT.Registrar@ontario.ca</a>	and	The Minister of the Environment, Conservation and Parks 777 Bay Street, 5th Floor Toronto, Ontario M7A 2J3	and	The Director appointed for the purposes of Part II.1 of the <i>Environmental Protection Act</i> Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5
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**\* Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or [www.olt.gov.on.ca](http://www.olt.gov.on.ca)**

This instrument is subject to Section 38 of the *Environmental Bill of Rights, 1993*, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at [ero.ontario.ca](http://ero.ontario.ca), you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

Dated at Toronto this 10th day of October, 2024



Mohsen Keyvani

Director

appointed for the purposes of Part II.1 of the Environmental Protection Act

c: Eric Nafziger

The following schedules are a part of this environmental compliance approval:

# SCHEDULE 1

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This Schedule 1 includes a list of documents relied upon for review:

1. Environmental Compliance Approval received March 27, 2024 requesting approval of a liquid soil processing site, signed by Eric Nafziger, Site Manager, 2374868 Ontario Inc., including all supporting documentation.
2. Email dated June 25, 2024 from Dan Puddephatt, P.Geo., GHD, to Pamela Grande, P.Geo., MECP, including the attached letter dated June 25, 2024 from Dan Puddephatt, P.Geo., GHD to Pamela Grande, P.Geo., MECP detailing the proposed trigger response plan ("GHD, 2024a. Proposed Trigger Response Plan – Conestoga Badger Inc. June 25").
3. Email dated July 5, 2024 from Dan Puddephatt, P.Geo., GHD, to Pamela Grande, P.Geo., MECP, including the attached document entitled "Hydrogeological Impact Assessment Revision No.1" dated July 2, 2024 ("GHD, 2024b. Hydrogeological Impact Assessment Revision No. 1, 2374868 Ontario Inc., Badger Conestoga Inc. July 5").

**ENVIRONMENTAL COMPLIANCE APPROVAL**

NUMBER A-500-3223236868

Version: 1.0

Issue Date: October 11, 2024

*Pursuant to section 20.3 of the Environmental Protection Act, Revised Statutes of Ontario (R.S.O.) 1990, c. E. 19 and subject to all other applicable Acts or regulations this Environmental Compliance Approval is issued to:*

2374868 ONTARIO INC.

6678 WELLINGTON RD 34 ROAD  
CAMBRIDGE ONTARIO  
N3C 2V4

*For the following site:*

6678 Wellington Road 34

Town of Puslinch, County of Wellington

*You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:*

- One (1) Diesel-fired engine, rated at 50 kilowatts and serving the screening operations;
- Fugitive emissions resulting from the delivery, storage, transfer and stockpiling of materials associated with waste processing operations;

all in accordance with the Application for Approval (Air & Noise) submitted by 2374868 Ontario Inc., dated April 13, 2023 and signed by Eric Nafziger - Site Manager; the supporting information, including the Emission Summary and Dispersion Modelling Report, submitted by GHD Limited, dated December 10, 2021 and signed by Erik Martinez; the Acoustic Assessment Report submitted by GHD Limited, dated April 3, 2024 and signed by Patrick Chen; the additional information provided by Patrick Chen of GHD Limited in the emails dated April 3, 2024, April 12, 2024, May 27, 2024 and July 15, 2024; and, all other documentation associated with the Application.

## **DEFINITIONS**

*For the purpose of this environmental compliance approval, the following definitions apply:*

1. "Acoustic Assessment Report" means the report, prepared in accordance with Publication NPC-233 submitted in support of the application, that documents all sources of noise emissions and Noise Control Measures present at the Facility. "Acoustic Assessment Report" also means the Acoustic Assessment Report prepared by GHD Limited, dated April 3, 2024 and signed by Patrick Chen;
2. "Acoustic Audit" means an investigative procedure consisting of measurements and/or acoustic modelling of all sources of noise emissions due to the operation of the Facility, assessed to determine compliance with the performance limits for the Facility regarding noise emissions, completed in accordance with the procedures set in Publication NPC-103 and reported in accordance with Publication NPC-233;
3. "Acoustic Audit Report" means a report presenting the results of an Acoustic Audit, prepared in accordance with

Publication NPC-233;

4. "Acoustical Consultant" means a person currently active in the field of environmental acoustics and noise/vibration control, who is familiar with Ministry noise guidelines and procedures and has a combination of formal university education, training and experience necessary to assess noise emissions from a Facility;
5. "Approval" means this Environmental Compliance Approval, including the application and supporting documentation listed above;
6. "Best Management Practices Plan" means a document or a set of documents which describe measures to minimize dust emissions from the Facility and/or Equipment;
7. "Company" means 2374868 Ontario Inc. that is responsible for the construction or operation of the Facility and includes any successors and assigns in accordance with section 19 of the EPA;
8. "Director" means a person appointed for the purpose of section 20.3 of the EPA by the Minister pursuant to section 5 of the EPA;
9. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located;
10. "EPA" means the *Environmental Protection Act*, R.S.O. 1990, c.E.19;
11. "Equipment" means the equipment and processes described in the Company's application, this Approval and in the supporting documentation submitted with the application, to the extent approved by this Approval;
12. "Facility" means the entire operation located on the property where the Equipment is located;
13. "Independent Acoustical Consultant" means an Acoustical Consultant who is not representing the Company and was not involved in preparing the Acoustic Assessment Report or the design/implementation of Noise Control Measures for the Facility and/or Equipment. The Independent Acoustical Consultant shall not be retained by the Acoustical Consultant involved in the noise impact assessment or the design/implementation of Noise Control Measures for the Facility and/or Equipment;
14. "Manual" means a document or a set of documents that provide written instructions to staff of the Company;
15. "Minister" means the Minister of the Environment, Conservation and Parks or such other member of the Executive Council as may be assigned the administration of the EPA under the Executive Council Act;
16. "Ministry" means the ministry of the government of Ontario responsible for the EPA and includes all officials, employees or other persons acting on its behalf;
17. "Noise Control Measures" means measures to reduce the noise emissions from the Facility and/or Equipment including, but not limited to, silencers, acoustic louvers, enclosures, absorptive treatment, plenums and barriers;
18. "Point of Reception" means Point of Reception as defined by Publication NPC-300;
19. "Publication NPC-103" means the Ministry Publication NPC-103 of the Model Municipal Noise Control By-Law, Final Report, August 1978, published by the Ministry as amended;
20. "Publication NPC-233" means the Ministry Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October, 1995, as amended;
21. "Publication NPC-300" means the Ministry Publication NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources - Approval and Planning, Publication NPC-300", August 2013, as amended;
22. "Technical Bulletin: Management Approaches for Industrial Fugitive Dust Sources" means the Ministry publication "Technical Bulletin: management approaches for industrial fugitive dust sources", March 8, 2017, as amended;
23. "Truck(s)" means heavy truck(s).

# TERMS AND CONDITIONS

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*You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:*

## 1. OPERATION AND MAINTENANCE

1. The Company shall ensure that the Equipment is properly operated and maintained at all times. The Company shall:
  - a. prepare, not later than three (3) months after the date of this Approval, and update, as necessary, a Manual outlining the operating procedures and a maintenance program for the Equipment, including:
    - i. routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the Equipment suppliers;
    - ii. emergency procedures, including spill clean-up procedures;
    - iii. procedures for any record keeping activities relating to operation and maintenance of the Equipment; and,
    - iv. all appropriate measures to minimize noise and odorous emissions from all potential sources;
  - b. implement the recommendations of the Manual.

## 2. FUGITIVE DUST CONTROL

1. The Company shall develop in consultation with the District Manager, a Best Management Practices Plan for the control of fugitive dust emissions. This Best Management Practices Plan shall:
  - a. at minimum, be prepared in accordance with Ministry Technical Bulletin: Management Approaches for Industrial Fugitive Dust Sources; and
  - b. include a list of all Ministry comments received, if any, on the development of the Best Management Practices Plan, and a description of how each Ministry comment was addressed in the Best Management Practices Plan.
2. The Company shall submit the Best Management Practices Plan to the District Manager not later than three (3) months after the date of this Approval or as otherwise indicated by the District Manager.
3. Upon acceptance of the Best Management Practices Plan by the District Manager, the Company shall immediately implement the Best Management Practices Plan for the control of fugitive dust emissions to provide effective dust suppression measures to any potential sources of fugitive dust emissions resulting from the operation of the Facility.
4. The Company shall update the Best Management Practices Plan as necessary or at the direction of the District Manager.

## 3. RECORD RETENTION

1. The Company shall retain, for a minimum of two (2) years from the date of their creation, all records and information related to or resulting from the recording activities required by this Approval, and make these records available for review by staff of the Ministry upon request. The Company shall retain:
  - a. all records on the maintenance, repair and inspection of the Equipment; and
  - b. all records of any environmental complaints, including:
    - i. a description, time and date of each incident to which the complaint relates;
    - ii. wind direction at the time of the incident to which the complaint relates; and

- iii. a description of the measures taken to address the cause of the incident to which the complaint relates and to prevent a similar occurrence in the future.

#### **4. NOTIFICATION OF COMPLAINTS**

1. The Company shall notify the District Manager, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:
  - a. a description of the nature of the complaint; and
  - b. the time and date of the incident to which the complaint relates.

#### **5. NOISE**

1. The Company shall:
  - a. at all times, ensure that the noise emissions from the Facility comply with the limits set out in Ministry Publication NPC-300;
  - b. maintain the locations of the Equipment, buildings, 3 metre high embankment, and Truck routes as depicted in Figure 1 of the Acoustic Assessment Report at all times that the Facility is operating;
  - c. ensure that the sound emission levels of the Equipment shall not exceed the values specified in Table 1 of the Acoustic Assessment Report;
  - d. limit Truck arrivals and departures during the day-time hours of 7 a.m. to 7 p.m. in accordance with the following:
    - i. a maximum of six (6) heavy truck movements per sixty (60) minute period on truck route "TR1" as depicted in Figure 1 of the Acoustic Assessment Report;
    - ii. a maximum of five (5) heavy truck movements per sixty (60) minute period on truck route "TR2" as depicted in Figure 1 of the Acoustic Assessment Report;
  - e. limit Truck arrivals and departures during the evening-time hours of 7 p.m. to 11 p.m. in accordance with the following:
    - i. a maximum of two (2) heavy truck movements per sixty (60) minute period on truck route "TR1" as depicted in Figure 1 of the Acoustic Assessment Report;
    - ii. a maximum of five (5) heavy truck movements per sixty (60) minute period on truck route "TR2" as depicted in Figure 1 of the Acoustic Assessment Report;
  - f. limit Truck arrivals and departures during the night-time hours of 11 p.m. to 7 a.m. in accordance with the following:
    - i. a maximum of two (2) heavy truck movements per sixty (60) minute period on truck route "TR1" as depicted in Figure 1 of the Acoustic Assessment Report; and
    - ii. a maximum of five (5) heavy truck movements per sixty (60) minute period on truck route "TR2" as depicted in Figure 1 of the Acoustic Assessment Report.
2. The Company shall restrict the operation of the screening Equipment to the day-time hours of 7 a.m. to 7 p.m.

#### **6. CHANGE OF OWNERSHIP**

1. The Company shall notify the Director in writing, and forward a copy of the notification to the District Manager, within thirty (30) days of the occurrence of any of the following changes to the Facility operations:
  - a. the ownership of the Facility;
  - b. the operator of the Facility;

- c. the address of the Company;
- d. the partners, where the Company is or at any time becomes a partnership and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c. B.17, shall be included in the notification; or
- e. the name of the corporation where the Company is or at any time becomes a corporation, other than a municipal corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C.39, shall be included in the notification.

2. In the event of any change in ownership of the Facility, the Company shall notify the successor of the existence of this Approval and provide the successor with a copy of this Approval, and the Company shall provide a copy of the notification to the District Manager and the Director.

## 7. ACOUSTIC AUDIT

1. The Company shall carry out Acoustic Audit measurements on the actual noise emissions due to the operation of the Facility. The Company:

- a. shall carry out Acoustic Audit measurements in accordance with the procedures in Publication NPC-103 at a time when foliage attenuation is at a minimum between the Facility and the Points of Reception;
- b. shall submit an Acoustic Audit Report on the results of the Acoustic Audit, prepared by an Independent Acoustical Consultant, in accordance with the requirements of Publication NPC-233, to the District Manager and the Director, not later than six (6) months after the commencement of operation of the Facility. The Acoustic Audit shall include verification of the sound emission levels of the Equipment and the sound level limits of the Points of Reception; and
- c. shall submit, in conjunction with an Acoustic Audit Report, an Environmental Compliance Approval application requesting an amendment to the Approval to rescind the requirement for an Acoustic Audit Report as per Condition 7.1.b of this Approval.

2. The Director:

- a. may not accept the results of the Acoustic Audit if the requirements of Publication NPC-233 were not followed; and
- b. may require the Company to repeat the Acoustic Audit if the results of the Acoustic Audit are found unacceptable to the Director.

## REASONS

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*The reasons for the imposition of these terms and conditions are as follows:*

1. Condition Nos. 1 and 2 are included to emphasize that the Equipment must be maintained and operated according to a procedure that will result in compliance with the EPA, the Regulations and this Approval.
2. Condition No. 3 is included to require the Company to keep records and to provide information to staff of the Ministry so that compliance with the EPA, the Regulations and this Approval can be verified.
3. Condition No. 4 is included to require the Company to notify staff of the Ministry so as to assist the Ministry with the review of the site's compliance.
4. Condition No. 5.1 is included to provide the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the Facility.
5. Condition No. 5.2 is included to ensure that operation of the screening Equipment is not extended beyond the stated hours to prevent an adverse effect resulting from the operation of the Equipment.
6. Condition No. 6 is included to require the Company to notify/report to the Ministry so that compliance with the EPA, the

regulations and this Approval can be verified.

7. Condition No. 7 is included to require the Company to gather accurate information and submit an Acoustic Audit Report in accordance with procedures set in the Ministry's noise guidelines, so that the environmental impact and subsequent compliance with this Approval can be verified.

## APPEAL PROVISIONS

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In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me and the Ontario Land Tribunal, within 15 days after the service of this notice, require a hearing by the Tribunal. You must also provide notice to, the Minister of the Environment, Conservation and Parks in accordance with Section 47 of the *Environmental Bill of Rights, 1993* who will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

- I. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- II. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

- I. The name of the appellant;
- II. The address of the appellant;
- III. The environmental compliance approval number;
- IV. The date of the environmental compliance approval;
- V. The name of the Director, and;
- VI. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar* Ontario Land Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5 <a href="mailto:OLT.Registrar@ontario.ca">OLT.Registrar@ontario.ca</a>	and	The Minister of the Environment, Conservation and Parks 777 Bay Street, 5th Floor Toronto, Ontario M7A 2J3	and	The Director appointed for the purposes of Part II.1 of the <i>Environmental Protection Act</i> Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5
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**\* Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or [www.olt.gov.on.ca](http://www.olt.gov.on.ca)**

This instrument is subject to Section 38 of the *Environmental Bill of Rights, 1993*, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at [ero.ontario.ca](http://ero.ontario.ca), you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

Dated at Toronto this 11th day of October, 2024



Nancy Orpana

Director

appointed for the purposes of Part II.1 of the Environmental Protection Act

c: Eric Nafziger

Mike Masschaele, GHD Limited

Erik Martinez, GHD Limited

Our ref: 11210029

May 28, 2025

Mr. Fred Taylor, P.Eng, LEP, LSP, LRS, QP  
GHD Limited  
455 Phillip Street  
Waterloo, Ontario N2L 3X2

Subject: **Updated Traffic Operations Assessment for 6678 Wellington County Road 34**

Dear Mr. Taylor:

GHD is pleased to provide this Updated Traffic Operations Assessment for the existing access at 6678 Wellington County Road 34.

This assessment is based on the currently available traffic data of Wellington County Road 34 in the vicinity of the existing access at #6678. Figure 1 shows the location of the access. It is our understanding that the access is shared by two businesses: Badger and Capital Paving. Badger operates a vac-truck business with a fleet of approximately 25 trucks. It is estimated that most of the trucks are on the road and leave the site in morning, say 20 trucks, with half returning in the early afternoon and the remaining half in the later afternoon corresponding to the time between 3 and 6pm. Capital Paving operates an aggregate extraction business with trucks arriving to be loaded with sand /gravel and leaving full at a steady pace. It is also our understanding that the operation is seasonal. Therefore, our estimate of the truck traffic associated with the two businesses likely over-estimates the actual truck traffic at the access.



Figure 1: Access Location

# 1. County Road Traffic

Wellington County provided us the details of newer 2023 traffic data along the full length of Wellington Road 34, east of Wellington Road 32. The traffic data at Wellington Road 34 1km east of Wellington Road 32 which is approximately at the subject access at #6678 Wellington Road 34 is provided in Appendix A. The traffic during the AM and PM peak hours is summarized in Figure 2.

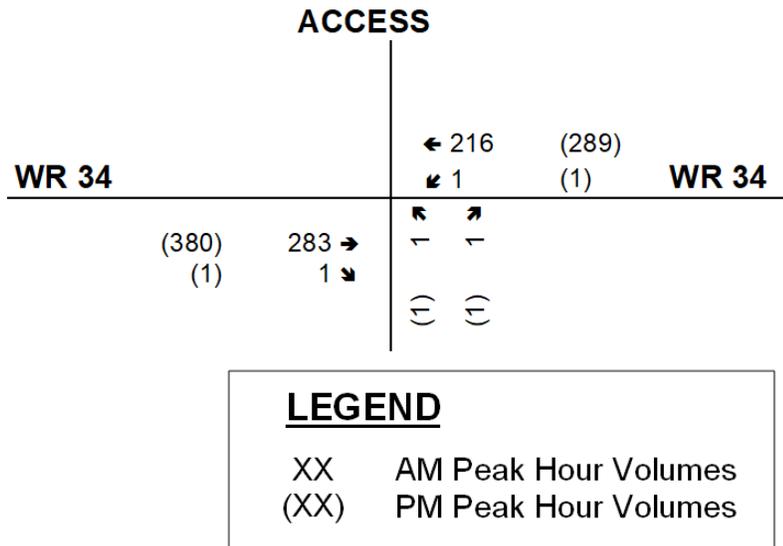


Figure 2: Wellington Road 34 Traffic

# 2. Access Traffic

The Badger traffic is estimated as 20 trucks leaving the access during the AM peak hour and approximately half the fleet returning full during the early afternoon (12-3PM) and the remaining returning in the late afternoon (3-6PM). It is estimated approximately 7 trucks return during the PM peak hour. Figure 3 illustrates the estimated Badger traffic.

Capital Paving traffic is estimated on the basis of the logistics of loading aggregate into trucks at a relatively steady rate of 5 trucks per hour. Therefore, during the AM peak hour, it is estimated that 5 trucks will enter and 5 trucks will exit the access. However, in the evening operations wind down; it is estimated that during the PM peak hour (5-6PM) only trucks leaving the site will be active to deliver one last load of the day. Figure 4 shows the estimated traffic related to Capital Paving.

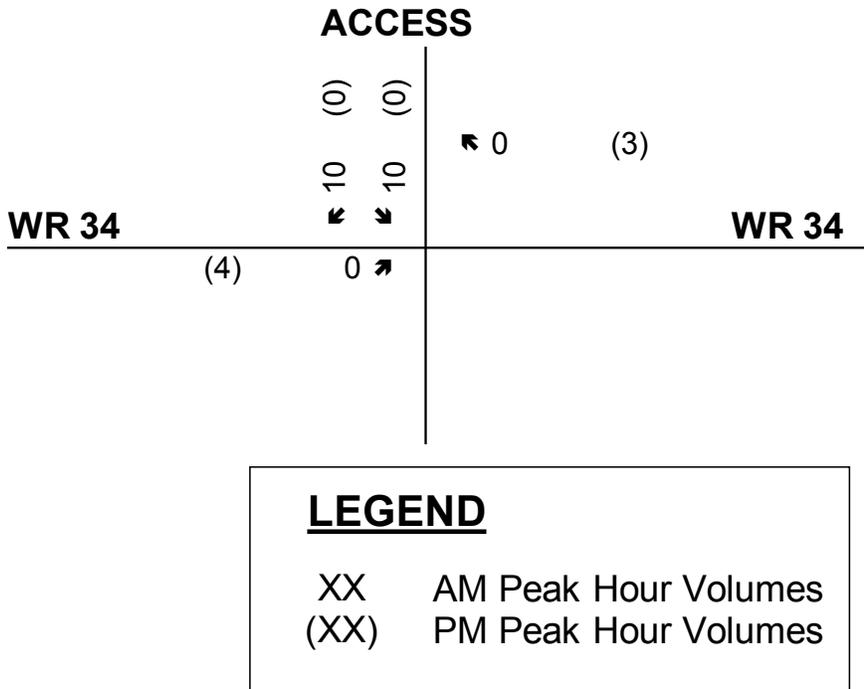


Figure 3: Badger Traffic

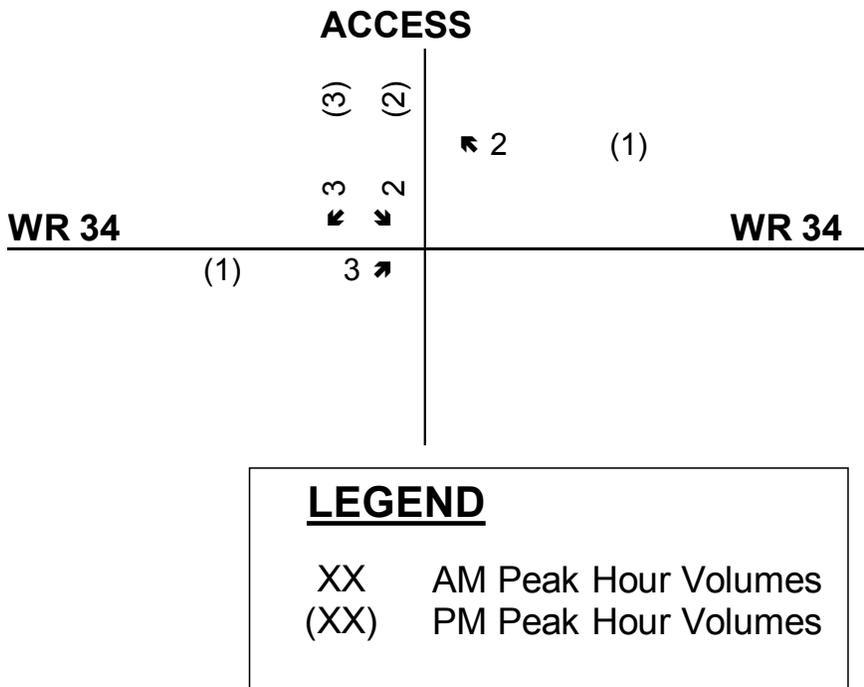


Figure 4: Capital Paving Traffic

### 3. Total Traffic

Combining the traffic on County Road 34 and the traffic turning at the access to #6678, the total traffic is derived. Figure 5 shows the total traffic at the access.

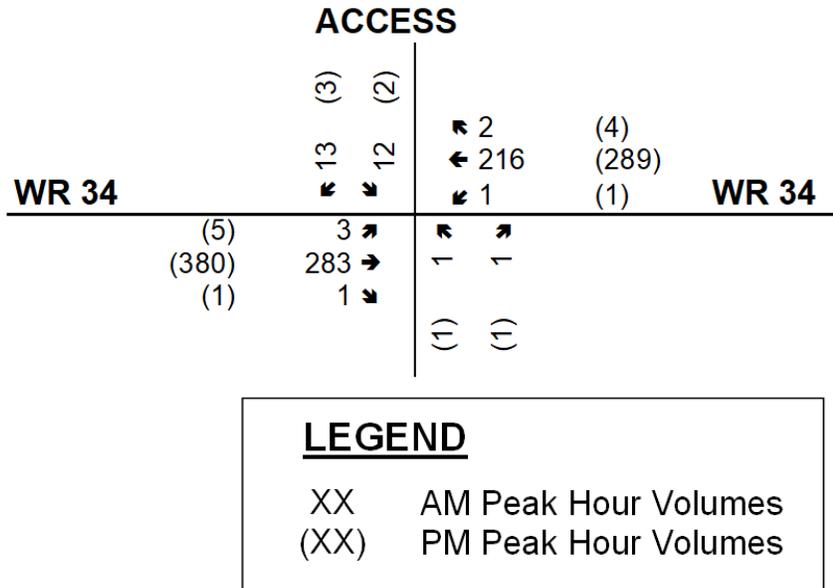


Figure 5: Total Traffic

### 4. Traffic Assessment

Assessment of the traffic at the access used SYNCHRO software. Results indicate good levels of service 'B', or better with individual v/c movements of 0.05, or less indicating substantial reserve capacity. Table 1 provides the summary of the results and Appendix B contains the detailed analysis reports.

Table 1: Total Traffic Conditions

Intersection	Control Type	AM Peak Hour			PM Peak Hour		
		Overall v/c (LOS) Delay in Seconds	Critical/ Key Movements v/c(LOS) Delay in Seconds	95th %ile Queues (m)	Overall v/c (LOS) Delay in Seconds	Critical/ Key Movements v/c(LOS) Delay in Seconds	95th %ile Queues (m)
WR 34 & Access	Unsignalized	SBTLR 0.05 (B) 12	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0 (B) 12 SBTLR = 0.05 (B) 12	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m	NBTLR 0 (B) 14	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0 (B) 14 SBTLR = 0.01 (B) 13	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m

The access is currently in operation and has been for several years with no known reports of collisions. With the traffic on WR34 and the expected traffic turning left (eastbound left) into the access being 1% of the traffic travelling eastbound, a left turn lane is not required.

The access has tapered pavement for the entering vehicles (westbound right) and the exiting vehicles turning right (southbound right).

If you wish to discuss any aspect of the report, please feel free to contact Mr. Roland Roovers. We trust that the above noted information is suitable for your purposes.

Sincerely,

GHD



**Roland Roovers, P.Eng.**  
Senior Transportation Manager

**+1 905 752-4348**  
roland.roovers@ghd.com

Attach. Appendices A-B

RR/sq

# Appendix A

## Traffic Data

WR 34 1km east of WR 32

AM peak hour	June 7 2023	Aug 23 2023	Oct 11 2023
WB	216	131	152
EB	283	294	317
Total	499	425	469

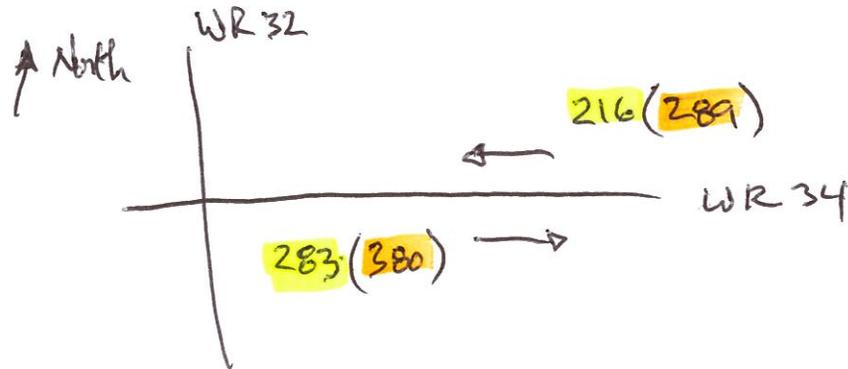
AM %Trucks	June 7 2023
WB	5%
EB	9%

AM PHF	June 7 2023
WB	0.81
EB	0.90

PM peak hour	June 7 2023	Aug 23 2023	Oct 11 2023
WB	289	381	394
EB	380	224	246
Total	669	605	640

PM %Trucks	June 7 2023
WB	14%
EB	17%

PM PHF	June 7 2023
WB	0.85
EB	0.95



GHD Analysis

Start Time	Cars & Trailers	2 Axle Long	Trucks										Total				
			Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi					
00:00/23	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
01:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
02:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
03:15	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
04:30	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
04:45	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:00	0	6	4	0	0	0	0	0	0	0	0	0	0	0	0	0	10
05:15	0	14	6	0	0	0	0	0	0	0	0	0	0	0	0	0	20
05:30	0	12	2	0	0	0	0	0	1	0	0	0	0	0	0	0	15
05:45	0	7	5	0	0	1	0	0	0	0	0	0	0	0	0	0	13
06:00	0	12	5	0	0	0	0	0	1	0	0	0	0	0	0	0	18
06:15	0	16	4	0	0	0	0	0	0	0	0	0	0	0	0	0	20
06:30	0	47	16	0	0	1	0	0	2	0	0	0	0	0	0	0	66
06:45	0	20	10	0	0	0	0	0	1	1	1	1	0	0	0	0	33
07:00	0	27	18	0	1	0	0	1	0	0	0	0	0	0	0	0	47
07:15	0	24	19	0	1	0	0	0	1	1	0	0	1	0	0	0	47
07:30	0	33	13	0	2	1	0	0	2	0	0	0	0	0	0	0	51
07:45	0	104	60	0	4	1	0	1	4	2	1	0	1	0	0	0	178
08:00	0	35	26	1	2	0	0	0	0	0	0	0	1	0	0	0	65
08:15	2	47	21	0	1	0	0	0	0	3	0	0	0	0	0	0	74
08:30	0	46	23	0	2	0	1	2	0	2	0	3	0	0	0	0	79
08:45	0	35	21	0	3	0	0	0	3	2	1	0	0	0	0	0	65
09:00	2	163	91	1	8	0	1	2	3	7	1	3	1	0	0	0	283
09:15	0	44	22	0	3	0	0	2	1	3	1	0	0	0	0	0	76
09:30	0	32	14	0	1	1	0	1	1	1	0	0	0	0	0	0	51
09:45	0	33	11	0	0	0	1	0	1	2	0	0	0	0	0	0	48
10:00	0	38	18	0	0	2	0	0	3	1	1	0	0	0	0	0	63
10:15	0	147	65	0	4	3	1	3	6	7	2	0	0	0	0	0	238
10:30	0	24	13	1	0	1	1	1	0	1	0	0	0	0	0	0	42
10:45	0	22	10	1	2	0	0	1	1	0	0	0	0	0	0	0	37
11:00	0	25	11	1	1	0	0	0	0	0	1	0	0	0	0	0	39
11:15	1	13	8	0	1	0	0	0	0	0	0	0	0	0	0	0	23
11:30	1	84	42	3	4	1	1	2	1	1	1	0	0	0	0	0	141
11:45	0	14	7	0	0	0	0	0	0	0	0	0	0	0	0	0	21
12:00	0	15	9	0	1	0	0	0	1	0	0	0	0	0	0	0	26
12:15	0	22	15	0	1	0	1	0	1	0	1	0	0	0	0	0	41
12:30	0	27	11	0	0	1	1	1	1	0	0	0	0	0	0	0	42
12:45	0	78	42	0	2	1	2	1	3	0	1	0	0	0	0	0	130
13:00	1	18	7	1	1	1	0	1	0	0	0	0	0	0	0	0	30
13:15	0	19	9	0	0	2	0	0	0	1	0	0	0	0	0	0	31
13:30	1	18	8	0	0	0	0	0	0	2	1	0	0	0	0	0	30
13:45	0	21	12	0	1	1	0	0	0	1	0	0	0	0	0	0	36
14:00	2	76	36	1	2	4	0	1	0	4	1	0	0	0	0	0	127
Total	5	721	360	5	24	12	5	10	19	21	7	3	2				1194
Percent	0.4%	60.4%	30.2%	0.4%	2.0%	1.0%	0.4%	0.8%	1.6%	1.8%	0.6%	0.3%	0.2%				

Hourly

3

4

4

0

20

66

178

283 EB AM Peak Hour  
7-8 AM

238

141

130

127

EB AM Trucks	3	EB AM PHF	65
	4		74
	10		79
	9		65
	26	0.896	
	9%		

Inters AM PHF	112
	141
	135
	111
	0.885

Start Time	Cars & Trailers		2 Axle Long	2 Axle		3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle		>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
	Bikes	Trailers		Buses	6 Tire				Double	Double					
12 PM	0	19	10	0	0	1	0	1	1	1	1	0	0	0	34
12:15	0	19	12	0	0	0	0	0	0	0	0	0	0	0	31
12:30	0	21	9	1	0	2	0	1	1	0	0	0	0	0	35
12:45	2	15	7	0	0	1	0	2	1	0	1	0	0	0	29
	2	74	38	1	0	4	0	4	3	1	2	0	0	0	129
13:00	3	19	13	1	0	2	0	1	4	1	1	0	0	0	45
13:15	0	22	11	0	0	2	0	0	1	1	2	0	1	0	40
13:30	0	19	7	0	0	3	0	0	1	0	0	0	0	0	30
13:45	1	30	12	0	0	4	0	1	2	1	1	0	0	0	52
	4	90	43	1	0	11	0	2	8	3	4	0	1	0	167
14:00	0	31	10	0	1	3	0	0	1	0	0	0	1	0	47
14:15	2	30	16	0	0	2	0	0	2	1	1	0	0	0	54
14:30	2	28	11	0	0	3	0	1	3	2	0	0	0	1	51
14:45	2	21	12	1	1	3	0	0	2	1	0	0	0	0	43
	6	110	49	1	2	11	0	1	8	4	1	0	2	0	195
15:00	1	32	12	0	0	1	0	0	3	1	1	0	1	0	52
15:15	2	35	12	0	0	5	0	0	3	2	0	0	1	0	60
15:30	0	53	17	0	1	2	1	1	3	0	0	0	0	0	78
15:45	3	42	15	0	0	5	0	0	2	1	4	0	1	0	73
	6	162	56	0	1	13	1	1	11	4	5	0	3	0	263
16:00	0	48	23	1	0	4	2	0	4	2	5	0	2	0	91
16:15	0	57	23	0	1	3	0	1	3	3	4	0	3	0	98
16:30	0	56	21	0	1	2	0	0	2	0	6	0	3	0	91
16:45	0	67	21	0	2	2	1	0	3	1	2	0	1	0	100
	0	228	88	1	4	11	3	1	12	6	17	0	9	0	380
17:00	0	55	20	0	0	2	0	1	1	2	5	0	0	0	86
17:15	0	52	16	0	0	2	0	1	2	0	3	0	1	0	77
17:30	0	40	20	0	0	2	0	1	0	1	1	0	0	0	65
17:45	1	37	8	0	0	0	1	0	1	0	2	0	1	0	51
	1	184	64	0	0	6	1	3	4	3	11	0	2	0	279
18:00	2	41	10	1	0	0	0	0	0	0	1	2	1	0	58
18:15	0	27	15	0	0	0	0	0	0	0	0	0	0	0	42
18:30	0	38	9	0	0	0	0	0	0	0	1	0	0	0	48
18:45	0	36	10	0	0	0	0	0	0	0	1	1	0	0	48
	2	142	44	1	0	0	0	0	0	3	3	1	0	0	196
19:00	0	30	10	0	0	0	0	0	1	1	0	0	0	0	42
19:15	0	23	5	0	0	0	0	0	0	0	4	1	1	0	33
19:30	0	18	4	0	0	0	0	0	0	0	1	1	1	0	25
19:45	0	15	3	0	0	0	0	0	0	0	0	0	0	0	18
	0	86	22	0	0	0	0	0	1	1	1	5	2	0	118
20:00	0	18	3	0	0	1	0	0	0	0	0	0	0	0	22
20:15	0	17	3	0	0	0	0	0	0	0	0	0	0	0	20
20:30	0	14	5	0	0	1	2	0	0	0	0	2	0	0	24
20:45	2	8	2	0	0	0	0	0	0	0	0	0	0	0	12
	2	57	13	0	0	2	2	0	0	0	0	2	0	0	78
21:00	0	15	3	0	0	1	0	0	0	0	0	0	0	0	19
21:15	0	9	1	0	0	0	0	0	0	0	0	0	0	0	10
21:30	0	19	3	0	0	0	0	0	0	0	0	0	0	0	22
21:45	0	17	3	0	0	0	0	0	1	0	0	0	0	0	21
	0	60	10	0	0	1	0	0	1	0	0	0	0	0	72
22:00	0	11	4	0	1	0	0	0	1	0	0	0	0	0	17
22:15	0	9	2	0	0	0	0	0	0	0	0	0	0	0	11
22:30	0	7	0	0	0	0	0	0	1	0	0	0	0	0	8
22:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	0	28	6	0	1	0	0	0	2	0	0	0	0	0	37
23:00	0	7	2	0	0	0	0	0	0	0	0	0	0	0	9
23:15	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
23:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
23:45	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
	0	18	3	0	0	0	0	0	0	0	0	0	0	0	21
Total	23	1239	436	5	8	59	7	12	50	22	44	10	20	0	1935
Percent	1.2%	64.0%	22.5%	0.3%	0.4%	3.0%	0.4%	0.6%	2.6%	1.1%	2.3%	0.5%	1.0%	0	
Grand Total	28	1960	796	10	32	71	12	22	69	43	51	13	22	0	3129
Percent	0.9%	62.6%	25.4%	0.3%	1.0%	2.3%	0.4%	0.7%	2.2%	1.4%	1.6%	0.4%	0.7%	0	

0  
129  
167  
195  
263  
380 EB PM Peak Hour  
4-5 PM  
279  
196  
118  
78  
72  
37  
21

EB PM Trucks	EB PM PHF	Inters PM PHF
19	91	176
18	98	169
14	91	161
12	100	163
63	0.950	0.950
17%		

WB Start Time	Bikes	Cars & Trailers	2 Axle Long	2 Axle 6 Tire Buses	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06:07:23	0	0	0	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	1	0	0	0	0	0	0	0	0	0	0	1
00:45	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	1
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	1	0	0	0	0	0	0	0	0	0	0	1
03:00	0	1	0	0	0	0	0	0	0	0	0	0	1
03:15	0	2	0	0	0	0	0	0	0	0	0	0	2
03:30	0	1	0	0	0	0	0	0	0	0	0	0	1
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	4	0	0	0	0	0	0	0	0	0	0	4
04:15	0	2	0	0	0	0	0	0	0	0	0	0	2
04:30	0	3	1	0	0	0	0	0	0	0	0	0	4
04:45	0	1	2	0	0	0	0	2	0	0	0	0	5
05:00	0	7	1	0	0	0	0	0	0	0	0	0	8
05:15	0	13	4	0	0	0	0	2	0	0	0	0	19
05:30	0	5	2	0	0	0	0	0	0	0	0	0	7
05:45	0	7	3	0	0	0	0	0	0	0	0	0	10
06:00	0	17	3	0	0	0	0	0	1	0	0	0	21
06:15	0	16	6	0	1	0	0	1	1	0	0	0	25
06:30	0	45	14	0	0	1	0	1	2	0	0	0	63
06:45	0	22	8	0	0	0	0	0	0	0	1	0	31
07:00	0	20	14	0	0	0	0	0	0	0	0	0	34
07:15	0	22	11	0	0	1	0	0	1	1	0	0	37
07:30	0	32	11	0	0	1	0	0	0	0	0	0	44
07:45	0	96	44	0	0	2	0	1	1	1	0	1	146
08:00	1	30	13	0	0	2	0	0	0	0	1	0	47
08:15	2	43	19	0	0	1	0	0	0	2	0	0	67
08:30	2	37	15	0	1	0	0	0	0	1	0	0	56
08:45	0	30	14	0	0	1	0	0	0	0	0	0	46
09:00	5	140	61	0	1	4	0	1	0	3	1	0	216
09:15	0	35	13	0	1	1	0	1	1	0	0	0	53
09:30	0	21	16	0	0	1	0	0	0	2	0	1	41
09:45	0	36	8	0	1	0	0	0	0	0	0	0	45
10:00	1	25	10	0	1	0	0	0	0	1	0	0	38
10:15	1	117	47	0	3	2	0	1	1	0	4	1	177
10:30	0	17	15	0	2	0	1	0	1	1	2	0	39
10:45	0	23	11	0	2	2	0	0	0	0	0	0	38
11:00	0	30	14	0	0	0	0	0	2	1	0	0	47
11:15	0	23	18	0	0	0	0	1	0	0	0	0	42
11:30	0	93	58	0	4	2	1	1	1	3	3	0	166
11:45	0	14	9	0	0	1	0	0	0	0	1	0	25
12:00	0	21	10	0	2	1	0	0	1	1	0	0	36
12:15	1	22	9	0	1	2	0	0	1	0	1	0	38
12:30	0	22	9	0	1	0	0	0	0	1	0	0	33
12:45	1	79	37	0	4	4	0	0	2	2	1	2	132
13:00	0	27	7	0	0	0	1	0	0	0	0	0	35
13:15	2	26	9	0	0	1	0	0	0	1	0	0	39
13:30	0	18	6	0	1	1	0	0	1	1	0	0	29
13:45	0	21	8	0	0	2	0	0	0	1	0	0	32
14:00	2	92	30	0	1	4	1	0	1	2	2	0	135
Total	9	681	295	0	13	19	2	3	9	10	14	3	1060
Percent	0.8%	64.2%	27.8%	0.0%	1.2%	1.8%	0.2%	0.3%	0.8%	0.9%	1.3%	0.3%	0.2%

1  
0  
1  
4  
19  
63  
146  
177  
166  
132  
135

216 WB AM Peak Hour  
7-8 AM

WB AM Trucks	WB AM PHF
3	47
3	67
2	56
2	46
10	0.806
5%	

WB Start Time	Bikes	Cars & Trailers	2 Axle Long	2 Axle 6 Tire Buses	3 Axle Single	4 Axle Single	<5 Ax Double	5 Axle Double	>6 Ax Double	<6 Ax Multi	6 Axle Multi	>6 Ax Multi	Total
12 PM	0	21	8	0	2	1	1	1	2	0	0	0	37
12:15	2	29	12	0	1	0	0	3	0	1	0	0	49
12:30	3	15	5	0	0	0	1	0	0	0	0	0	25
12:45	0	22	8	0	1	1	0	0	0	1	0	0	34
	5	87	33	0	4	2	2	6	1	3	2	0	145
13:00	0	25	10	0	0	2	0	0	1	2	0	0	40
13:15	0	22	12	0	0	0	0	2	1	1	0	0	39
13:30	0	20	8	0	0	3	0	2	1	1	1	0	36
13:45	0	24	13	0	0	1	1	2	3	2	0	0	47
	0	91	43	0	0	6	1	6	6	6	1	0	162
14:00	0	23	15	0	0	0	1	1	1	3	0	0	46
14:15	2	12	11	0	1	2	0	2	2	2	1	0	36
14:30	0	26	9	0	0	1	2	1	1	3	1	0	45
14:45	0	33	16	0	0	1	4	1	2	4	0	0	63
	2	94	51	0	1	4	7	5	6	12	2	1	190
15:00	1	40	9	0	2	0	0	3	3	2	0	0	63
15:15	0	35	12	0	2	2	0	2	2	6	1	0	64
15:30	0	44	9	0	1	1	0	1	1	1	1	2	62
15:45	2	36	19	0	2	2	0	4	1	2	0	1	72
	3	155	49	0	7	5	0	10	7	11	2	2	261
16:00	0	55	14	0	3	0	0	1	2	4	3	0	85
16:15	2	47	14	0	1	2	0	0	0	2	2	0	71
16:30	1	41	22	0	1	1	0	0	0	1	2	0	70
16:45	0	34	18	0	0	2	0	1	1	5	2	0	63
	3	177	68	0	5	5	0	2	3	12	9	0	289
17:00	0	41	9	0	0	1	0	3	1	0	0	0	55
17:15	0	45	13	0	1	0	1	2	0	1	2	1	68
17:30	1	30	12	0	0	0	0	0	1	1	2	0	48
17:45	0	38	12	0	0	0	1	0	0	0	0	0	51
	1	154	46	0	1	1	2	5	2	2	4	1	222
18:00	0	33	12	0	0	0	0	0	1	2	2	0	51
18:15	2	26	9	0	1	0	3	0	0	1	0	0	42
18:30	0	24	6	0	0	0	0	2	0	0	0	2	35
18:45	0	30	3	0	1	0	0	0	1	1	2	1	39
	2	113	30	0	2	0	3	2	2	4	4	3	167
19:00	0	28	5	0	0	0	0	0	0	0	0	0	33
19:15	0	21	2	0	0	0	1	0	1	1	0	0	26
19:30	0	17	9	0	0	0	0	0	0	0	0	0	26
19:45	0	17	4	0	0	0	1	0	0	0	0	0	22
	0	83	20	0	0	0	2	0	0	1	0	0	107
20:00	1	12	2	0	0	0	0	0	0	1	0	0	16
20:15	0	19	7	0	0	0	1	0	0	0	0	0	27
20:30	0	17	5	0	0	0	0	0	0	0	1	2	25
20:45	0	16	3	0	0	0	0	0	0	0	0	0	19
	1	64	17	0	0	0	1	0	0	1	1	2	87
21:00	0	7	2	0	0	0	0	0	0	1	0	0	10
21:15	0	13	1	0	0	0	0	0	0	1	0	0	15
21:30	0	6	1	0	0	0	0	0	0	1	0	0	8
21:45	0	9	0	0	0	0	0	0	0	0	0	0	9
	0	35	4	0	0	0	0	0	0	3	0	0	42
22:00	0	15	2	0	0	0	0	0	0	0	0	0	17
22:15	0	4	1	0	0	0	0	0	0	0	0	0	5
22:30	0	7	0	0	0	0	0	0	0	0	0	0	7
22:45	0	4	0	0	0	0	0	0	0	0	0	0	4
	0	30	3	0	0	0	0	0	0	0	0	0	33
23:00	0	3	0	0	0	0	0	0	0	0	0	0	3
23:15	0	1	0	0	0	0	0	0	0	0	0	0	1
23:30	0	4	0	0	0	0	0	0	0	0	0	0	4
23:45	0	2	0	0	0	0	0	0	0	0	0	0	2
	0	10	0	0	0	0	0	0	0	0	0	0	10
Total	17	1093	364	0	20	23	18	36	28	55	25	9	1715
Percent	1.0%	63.7%	21.2%	0.0%	1.2%	1.3%	1.0%	2.1%	1.6%	3.2%	1.5%	0.5%	1.6%
Grand Total	26	1774	659	0	33	42	20	39	37	65	39	12	2775
Percent	0.9%	63.9%	23.7%	0.0%	1.2%	1.5%	0.7%	1.4%	1.3%	2.3%	1.4%	0.4%	1.0%

Total

145

162

190

261

WB PM Trucks	WB PM PHF
16	85
8	71
6	70
11	63
41	0.850
14%	

289 WB PM Peak Hour  
4-5 PM

222

167

107

87

42

33

10

EB, WB	Cars & Trailers	2 Axle Long	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Double	5 Axle Double	>6 Ax Double	<6 Ax Multi	6 Axle Multi	>6 Ax Multi	Total	
06:07/23	0	0	0	0	1	0	0	0	0	0	0	1	
00:15	0	0	0	0	0	0	0	0	0	0	0	0	
00:30	0	1	0	0	0	0	0	0	0	0	0	1	
00:45	0	1	1	0	0	0	0	0	0	0	0	2	
	0	2	1	0	1	0	0	0	0	0	0	4	
01:00	0	2	0	0	0	0	0	0	0	0	0	2	
01:15	0	0	0	0	0	0	0	0	0	0	0	0	
01:30	0	1	0	0	0	0	0	0	0	0	0	1	
01:45	0	1	0	0	0	0	0	0	0	0	0	1	
	0	4	0	0	0	0	0	0	0	0	0	4	
02:00	0	1	0	0	0	0	0	0	0	0	0	1	
02:15	0	0	0	0	0	0	0	0	0	0	0	0	
02:30	0	0	0	0	0	0	0	0	0	0	0	0	
02:45	0	3	1	0	0	0	0	0	0	0	0	4	
	0	4	1	0	0	0	0	0	0	0	0	5	
03:00	0	1	0	0	0	0	0	0	0	0	0	1	
03:15	0	2	0	0	0	0	0	0	0	0	0	2	
03:30	0	1	0	0	0	0	0	0	0	0	0	1	
03:45	0	0	0	0	0	0	0	0	0	0	0	0	
	0	4	0	0	0	0	0	0	0	0	0	4	
04:00	0	5	1	0	0	0	0	0	0	0	0	6	
04:15	0	5	2	0	0	0	0	0	0	0	0	7	
04:30	0	4	2	0	0	0	2	0	0	0	0	8	
04:45	0	13	5	0	0	0	0	0	0	0	0	18	
	0	27	10	0	0	0	2	0	0	0	0	39	
05:00	0	17	4	0	0	0	1	0	0	0	0	22	
05:15	0	14	8	0	1	0	0	0	0	0	0	23	
05:30	0	29	8	0	0	0	1	1	0	0	0	39	
05:45	0	32	10	0	1	0	1	1	0	0	0	45	
	0	92	30	0	2	0	3	2	0	0	0	129	
06:00	0	42	18	0	0	0	1	1	1	0	1	64	
06:15	0	47	32	0	1	0	1	0	0	0	0	81	
06:30	0	46	30	0	1	1	0	2	2	1	0	84	
06:45	0	65	24	0	2	2	0	2	0	0	0	95	
	0	200	104	0	4	3	0	5	3	2	0	324	
07:00	1	65	39	1	2	2	0	0	0	1	1	112	
07:15	4	90	40	0	1	1	0	0	3	2	0	141	
07:30	2	83	38	0	3	0	1	2	0	2	1	135	
07:45	0	65	35	0	3	1	0	1	3	2	1	111	
	7	303	152	1	9	4	1	3	3	7	4	499	
08:00	0	79	35	0	4	1	0	3	2	3	2	129	
08:15	0	53	30	0	1	2	0	1	1	1	2	92	
08:30	0	69	19	0	1	0	1	0	1	2	0	93	
08:45	1	63	28	0	1	2	0	0	3	1	2	101	
	1	264	112	0	7	5	1	4	7	7	6	415	
09:00	0	41	28	1	2	1	2	1	1	2	2	81	
09:15	0	45	21	1	4	2	0	1	1	0	0	75	
09:30	0	55	25	1	1	0	0	0	2	2	0	86	
09:45	1	36	26	0	1	0	0	1	0	0	0	65	
	1	177	100	3	8	3	2	3	2	4	4	307	
10:00	0	28	16	0	0	1	0	0	0	0	1	46	
10:15	0	36	19	0	3	1	0	0	2	1	0	62	
10:30	1	44	24	0	2	2	1	0	2	0	2	79	
10:45	0	49	20	0	1	1	1	1	1	0	0	75	
	1	157	79	0	6	5	2	1	5	2	2	262	
11:00	1	45	14	1	1	1	1	1	0	0	0	65	
11:15	2	45	18	0	0	3	0	0	0	2	0	70	
11:30	1	36	14	0	1	1	0	0	1	3	2	59	
11:45	0	42	20	0	1	3	0	0	0	1	1	68	
	4	168	66	1	3	8	1	1	6	3	0	262	
Total	14	1402	655	5	37	31	7	13	28	31	21	2254	
Percent	0.6%	62.2%	29.1%	0.2%	1.6%	1.4%	0.3%	0.6%	1.2%	1.4%	0.9%	0.3%	0.2%

Total EB, WB

4

4

5

4

39

129

324

EB, WB AM Trucks	EB, WB AM PHF
6	112
7	141
12	135
11	111
36	0.885
7%	

499 EB, WB AM Peak Ho  
7-8 AM

415

307

262

262

EB, WB Start Time	Cars & Trailers		2 Axle Long	2 Axle 6 Tire		3 Axle Single	4 Axle Single		<5 Axl Double	5 Axle Double		>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
	Bikes	Trailers		Buses	6 Tire		Single	Double		Double	Double					
12 PM	0	40	18	0	2	2	1	2	2	3	1	0	0	0	71	
12:15	2	48	24	0	1	0	0	3	0	1	1	0	0	0	80	
12:30	3	36	14	1	0	2	1	2	1	0	0	0	0	0	60	
12:45	2	37	15	0	1	2	0	3	1	0	2	0	0	0	63	
	7	161	71	1	4	6	2	10	4	4	4	0	0	0	274	
13:00	3	44	23	1	0	4	0	1	5	3	1	0	0	0	85	
13:15	0	44	23	0	0	2	0	2	2	2	2	0	2	0	79	
13:30	0	39	15	0	0	6	0	2	2	1	1	0	0	0	66	
13:45	1	54	25	0	0	5	1	3	5	3	1	0	1	0	99	
	4	181	86	1	0	17	1	8	14	9	5	0	3	0	329	
14:00	0	54	25	0	1	3	1	1	2	3	0	0	0	0	93	
14:15	4	42	27	0	1	4	0	2	4	3	2	0	1	0	90	
14:30	2	54	20	0	0	4	2	2	4	5	1	1	1	0	96	
14:45	2	54	28	1	1	4	4	1	4	5	0	0	2	0	106	
	8	204	100	1	3	15	7	6	14	16	3	1	7	0	385	
15:00	2	72	21	0	2	1	0	3	6	3	1	0	4	0	115	
15:15	2	70	24	0	2	7	0	2	5	8	1	0	3	0	124	
15:30	0	97	26	0	2	3	1	2	4	1	1	1	2	0	140	
15:45	5	78	34	0	2	7	0	4	3	3	4	1	4	0	145	
	9	317	105	0	8	18	1	11	18	15	7	2	13	0	524	
16:00	0	103	37	1	3	4	2	1	6	6	8	0	5	0	176	
16:15	2	104	37	0	2	5	0	1	3	5	6	0	4	0	169	
16:30	1	97	43	0	2	3	0	0	2	1	8	0	4	0	161	
16:45	0	101	39	0	2	4	1	1	4	6	4	0	1	0	163	
	3	405	156	1	9	16	3	3	15	18	26	0	14	0	669	
17:00	0	96	29	0	0	3	0	4	2	2	5	0	0	0	141	
17:15	0	97	29	0	1	2	1	3	2	1	5	1	3	0	145	
17:30	1	70	32	0	0	2	0	1	1	2	3	0	1	0	113	
17:45	1	75	20	0	0	0	2	0	1	0	2	0	1	0	102	
	2	338	110	0	1	7	3	8	6	5	15	1	5	0	501	
18:00	2	74	22	1	0	0	0	0	1	2	3	2	2	0	109	
18:15	2	53	24	0	1	0	3	0	0	1	0	0	0	0	84	
18:30	0	62	15	0	0	0	0	2	0	0	1	2	1	0	83	
18:45	0	66	13	0	1	0	0	0	1	1	3	2	0	0	87	
	4	255	74	1	2	0	3	2	2	4	7	6	3	0	363	
19:00	0	58	15	0	0	0	0	0	1	1	0	0	0	0	75	
19:15	0	44	7	0	0	0	1	0	1	1	0	4	1	0	59	
19:30	0	35	13	0	0	0	0	0	0	0	1	1	1	0	51	
19:45	0	32	7	0	0	0	1	0	0	0	0	0	0	0	40	
	0	169	42	0	0	0	2	0	2	2	1	5	2	0	225	
20:00	1	30	5	0	0	1	0	0	0	1	0	0	0	0	38	
20:15	0	36	10	0	0	0	1	0	0	0	0	0	0	0	47	
20:30	0	31	10	0	0	1	2	0	0	0	1	4	0	0	49	
20:45	2	24	5	0	0	0	0	0	0	0	0	0	0	0	31	
	3	121	30	0	0	2	3	0	0	1	1	4	0	0	165	
21:00	0	22	5	0	0	1	0	0	0	1	0	0	0	0	29	
21:15	0	22	2	0	0	0	0	0	0	1	0	0	0	0	25	
21:30	0	25	4	0	0	0	0	0	0	1	0	0	0	0	30	
21:45	0	26	3	0	0	0	0	0	1	0	0	0	0	0	30	
	0	95	14	0	0	1	0	0	1	3	0	0	0	0	114	
22:00	0	26	6	0	1	0	0	0	1	0	0	0	0	0	34	
22:15	0	13	3	0	0	0	0	0	0	0	0	0	0	0	16	
22:30	0	14	0	0	0	0	0	0	1	0	0	0	0	0	15	
22:45	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5	
	0	58	9	0	1	0	0	0	2	0	0	0	0	0	70	
23:00	0	10	2	0	0	0	0	0	0	0	0	0	0	0	12	
23:15	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6	
23:30	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6	
23:45	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7	
	0	28	3	0	0	0	0	0	0	0	0	0	0	0	31	
Total	40	2332	800	5	28	82	25	48	78	77	69	19	47	0	3650	
Percent	1.1%	63.9%	21.9%	0.1%	0.8%	2.2%	0.7%	1.3%	2.1%	2.1%	1.9%	0.5%	1.3%			
Grand Total	54	3734	1455	10	65	113	32	61	106	108	90	25	51		5904	
Percent	0.9%	63.2%	24.6%	0.2%	1.1%	1.9%	0.5%	1.0%	1.8%	1.8%	1.5%	0.4%	0.9%			

Total

274

329

385

524

EB, WB PM Trucks	EB, WB PM PHF
35	176
26	169
20	161
23	163
104	0.950
16%	

669 EB, WB PM Peak Ho  
4-5 PM

501

363

225

165

114

70

31

5904 EB, WB TOTAL

Start Time	Bikes	Cars & Trailers	2 Axle Long	2 Axle Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Double	5 Axle Double	>6 Ax Double	<6 Ax Multi	6 Axle Multi	>6 Ax Multi	Total
08:23:23	0	1	0	0	0	0	0	0	0	0	0	0	0	1
00:15	1	5	0	0	0	0	0	0	0	0	0	0	0	6
00:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	9	0	0	0	0	0	0	0	0	0	0	0	10
01:00	0	1	0	0	0	0	0	0	0	1	0	0	0	2
01:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	0	3	0	0	0	0	0	0	0	1	0	0	0	4
02:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:15	0	4	1	0	0	0	0	0	0	0	0	0	0	5
02:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:45	0	4	0	0	0	0	1	0	0	0	0	0	0	5
	0	11	2	0	0	0	1	0	0	0	0	0	0	14
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	3	0	0	0	0	0	0	1	0	0	0	0	4
03:45	0	4	1	0	0	0	0	0	0	0	0	0	0	5
	0	8	1	0	0	0	0	0	1	0	0	0	0	10
04:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:15	0	6	5	0	0	0	0	0	2	1	0	0	0	14
04:30	0	9	2	0	0	0	0	0	0	2	0	0	0	13
04:45	0	10	3	0	0	0	0	0	2	1	0	0	0	16
	0	29	10	0	0	0	0	0	4	4	0	0	0	47
05:00	0	15	4	0	0	1	0	0	0	0	0	0	0	20
05:15	0	22	12	0	0	1	0	0	0	1	0	0	0	36
05:30	0	24	6	0	0	2	0	0	0	0	0	0	0	32
05:45	0	31	12	0	0	2	0	0	1	0	0	0	0	46
	0	92	34	0	0	6	0	0	1	1	0	0	0	134
06:00	0	25	5	0	0	1	0	0	4	1	0	0	0	36
06:15	0	29	11	0	1	0	0	0	3	0	2	0	0	46
06:30	0	33	7	0	0	0	0	1	0	1	0	0	0	42
06:45	0	36	11	0	1	0	0	0	1	1	1	0	0	51
	0	123	34	0	2	1	0	1	8	3	3	0	0	175
07:00	0	41	8	0	1	2	2	4	0	0	1	0	0	59
07:15	0	54	16	0	2	1	1	0	1	1	0	0	0	76
07:30	0	66	12	0	1	3	0	1	0	0	1	0	0	83
07:45	0	56	11	0	2	0	1	0	3	0	3	0	0	76
	0	216	47	0	6	6	4	5	4	1	5	0	0	294
08:00	0	65	8	1	1	0	0	1	0	1	1	0	1	79
08:15	0	59	11	0	0	1	0	0	2	0	2	0	0	75
08:30	0	54	13	0	1	0	0	0	1	0	0	0	0	69
08:45	0	38	12	0	0	1	0	0	2	0	2	0	0	55
	0	216	44	1	2	2	0	1	5	1	5	0	1	278
09:00	0	46	16	0	3	0	0	0	0	0	1	0	0	66
09:15	0	31	15	0	2	0	0	0	1	0	1	0	0	50
09:30	0	26	12	0	0	2	0	0	0	0	1	0	0	41
09:45	0	21	8	0	1	0	0	0	0	0	0	0	1	31
	0	124	51	0	6	2	0	0	1	0	3	0	1	188
10:00	0	21	12	0	0	1	2	2	1	0	0	0	0	39
10:15	0	23	7	0	1	0	0	0	1	0	0	0	0	32
10:30	0	32	8	0	0	2	1	0	1	0	2	0	0	46
10:45	0	21	8	0	0	2	0	0	0	0	1	0	0	32
	0	97	35	0	1	5	3	2	3	0	3	0	0	149
11:00	0	24	11	0	1	1	0	0	0	0	1	0	1	39
11:15	0	20	12	0	0	1	1	0	0	0	0	0	0	34
11:30	0	17	9	0	1	0	0	0	0	0	2	0	0	29
11:45	0	24	11	0	2	0	0	0	2	0	0	0	0	39
	0	85	43	0	4	2	1	0	2	0	3	0	1	141
Total	1	1013	301	1	21	24	9	9	29	11	22	0	3	1444
Percent	0.1%	70.2%	20.8%	0.1%	1.5%	1.7%	0.6%	0.6%	2.0%	0.8%	1.5%	0.0%	0.2%	

Hourly

10

4

14

10

47

134

175

294 EB AM Peak Hour  
7-8 AM

278

188

149

141

EB AM Trucks	EB AM PHF
10	59
6	76
6	83
9	76
31	0.886
11%	

Inters AM PHF
88
108
118
111
0.900

Start Time	Bikes	Cars & Trailers	2 Axle Long	2 Axle Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12 PM	0	12	8	0	2	1	0	0	0	0	0	0	0	23
12:15	0	34	6	0	1	0	2	1	1	0	0	0	0	45
12:30	0	26	9	0	0	1	0	0	0	0	1	0	0	37
12:45	0	20	3	0	0	1	0	0	1	0	1	0	0	27
	0	92	26	0	3	3	2	1	2	0	2	0	1	132
13:00	0	18	4	0	0	0	0	0	1	0	1	0	0	24
13:15	0	22	6	0	0	0	1	0	1	1	0	0	0	31
13:30	0	21	8	0	0	0	0	0	0	0	0	0	0	29
13:45	0	19	8	0	1	0	1	1	0	1	0	0	0	31
	0	80	26	0	1	0	2	1	2	1	0	0	0	115
14:00	0	25	7	0	1	1	1	0	0	0	1	0	0	36
14:15	0	26	9	0	1	0	2	0	1	0	1	0	0	40
14:30	0	19	6	0	0	0	1	0	1	0	0	0	0	27
14:45	0	27	5	0	0	0	0	0	2	0	1	0	0	35
	0	97	27	0	2	1	4	0	4	0	3	0	0	138
15:00	1	25	4	0	0	0	0	0	1	0	1	0	0	32
15:15	0	37	15	0	1	0	0	0	0	0	0	0	0	53
15:30	1	26	12	0	0	0	0	1	0	0	1	0	0	41
15:45	0	28	14	0	0	1	0	0	0	0	0	0	0	43
	2	116	45	0	1	1	0	1	1	0	2	0	0	169
16:00	0	39	11	0	1	0	0	0	1	0	3	0	1	56
16:15	0	45	6	0	0	0	0	1	0	0	2	0	0	54
16:30	0	45	11	0	0	0	0	0	0	0	4	0	1	61
16:45	0	38	11	0	0	0	1	0	1	0	2	0	0	53
	0	167	39	0	1	0	1	1	2	0	11	0	2	224
17:00	0	61	6	0	0	0	0	0	0	0	2	0	1	70
17:15	0	43	8	0	0	0	0	0	0	0	3	0	0	54
17:30	0	48	7	0	0	0	0	0	0	0	0	0	0	55
17:45	1	21	8	0	0	0	0	0	0	0	0	0	0	30
	1	173	29	0	0	0	0	0	0	0	5	0	1	209
18:00	0	23	6	0	0	0	0	0	1	0	0	0	0	30
18:15	0	19	6	0	0	0	0	0	1	0	0	0	0	26
18:30	0	31	0	0	0	0	0	0	0	1	0	0	0	32
18:45	0	20	2	0	0	0	0	0	0	0	1	0	0	23
	0	93	14	0	0	0	0	0	2	1	1	0	0	111
19:00	0	11	5	0	0	0	0	0	0	0	0	0	0	16
19:15	0	18	2	0	0	0	0	0	0	0	1	0	0	21
19:30	0	12	3	0	0	0	0	0	0	0	0	0	0	15
19:45	0	12	2	0	0	0	0	0	0	0	0	0	0	14
	0	53	12	0	0	0	0	0	0	0	1	0	0	66
20:00	0	15	7	0	0	1	0	0	0	0	3	0	0	26
20:15	0	14	1	0	0	0	0	0	0	0	0	0	0	15
20:30	0	5	1	0	0	0	0	0	0	0	0	0	0	6
20:45	0	8	1	0	0	0	0	0	0	0	0	0	0	9
	0	42	10	0	0	1	0	0	0	0	3	0	0	56
21:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
21:15	0	9	2	0	0	1	0	0	0	0	0	0	0	12
21:30	0	6	1	0	0	0	0	0	0	0	0	0	0	7
21:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
	0	24	5	0	0	1	0	0	0	0	0	0	0	30
22:00	0	5	0	0	0	0	0	1	0	0	0	0	0	6
22:15	0	7	5	0	0	0	0	0	0	0	0	0	0	12
22:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
22:45	0	6	1	0	0	0	1	0	0	0	0	0	0	8
	0	22	6	0	0	0	1	1	0	0	0	0	0	30
23:00	0	3	3	0	0	0	0	0	0	0	0	0	0	6
23:15	0	2	1	0	0	1	0	0	0	0	0	0	0	4
23:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1
23:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	0	7	5	0	0	1	0	0	0	0	0	0	0	13
Total	3	966	244	0	8	8	10	5	13	3	29	0	4	1293
Percent Grand Total	0.2%	74.7%	18.9%	0.0%	0.6%	0.6%	0.8%	0.4%	1.0%	0.2%	2.2%	0.0%	0.3%	2737
Percent	0.1%	72.3%	19.9%	0.0%	1.1%	1.2%	0.7%	0.5%	1.5%	0.5%	1.9%	0.0%	0.3%	

0

Total

132

115

138

169

224 EB PM Peak Hour  
4-5 PM

EB PM Trucks	EB PM PHF
6	56
3	54
5	61
4	53
18	
8%	0.918

Inters PM PHF
121
128
165
191
0.792

209

111

66

56

30

30

13

WB Start Time	Bikes	Cars & Trailers	2 Axle Long	2 Axle 6 Tire Buses	3 Axle Single	4 Axle Single	<5 Ax Double	5 Axle Double	>6 Ax Double	<6 Ax Multi	6 Axle Multi	>6 Ax Multi	Total
06:23:23	0	2	0	0	0	0	0	0	0	0	0	0	2
00:15	0	1	1	0	0	0	0	0	0	0	0	0	2
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	2	0	0	0	0	0	0	0	0	0	0	2
	0	5	1	0	0	0	0	0	0	0	0	0	6
01:00	0	1	0	0	0	0	0	0	0	0	0	0	1
01:15	0	1	0	0	0	0	0	0	0	0	0	0	1
01:30	0	3	0	0	0	0	0	0	0	0	0	0	3
01:45	0	1	0	0	0	0	0	0	0	0	0	0	1
	0	6	0	0	0	0	0	0	0	0	0	0	6
02:00	0	4	0	0	0	0	0	0	0	0	0	0	4
02:15	0	3	0	0	0	0	0	0	0	0	0	0	3
02:30	0	1	0	0	0	0	0	0	0	0	0	0	1
02:45	0	2	0	0	0	0	0	0	0	0	0	0	2
	0	10	0	0	0	0	0	0	0	0	0	0	10
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	1	1	0	0	0	0	0	0	0	0	0	2
03:30	0	2	1	0	0	0	0	0	0	0	0	0	3
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	3	2	0	0	0	0	0	0	0	0	0	5
04:00	0	1	1	0	0	0	0	0	0	0	0	0	2
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	1	2	0	0	0	0	0	0	0	0	0	3
04:45	0	3	0	0	0	0	0	0	0	0	0	0	3
	0	5	3	0	0	0	0	0	0	0	0	0	8
05:00	0	2	1	0	0	0	0	0	0	0	0	0	3
05:15	0	4	3	0	0	0	0	0	0	0	0	0	7
05:30	0	4	6	0	0	0	0	0	0	0	0	0	10
05:45	0	3	7	0	0	0	1	0	0	0	0	0	11
	0	13	17	0	0	0	1	0	0	0	0	0	31
06:00	0	6	1	0	0	0	2	0	0	1	0	0	10
06:15	0	10	6	0	0	0	1	0	0	0	0	0	17
06:30	0	16	4	0	1	0	1	0	0	0	0	0	22
06:45	0	23	6	0	0	1	2	0	0	0	0	0	32
	0	55	17	0	1	1	6	0	0	1	0	0	81
07:00	0	20	5	0	0	0	1	0	0	3	0	0	29
07:15	1	22	5	0	0	0	1	2	1	0	0	0	32
07:30	0	22	8	0	0	1	2	1	0	1	0	0	35
07:45	0	21	9	0	1	1	2	0	0	0	0	1	35
	1	85	27	0	1	2	5	2	2	1	4	0	131
08:00	0	22	8	0	0	0	0	2	0	3	0	0	35
08:15	0	30	8	0	0	1	0	0	1	0	0	1	41
08:30	0	20	6	0	1	1	0	1	0	2	0	0	31
08:45	0	20	8	0	0	0	0	1	1	0	0	0	30
	0	92	30	0	1	2	0	4	2	0	5	1	137
09:00	0	19	1	0	0	1	0	1	0	1	0	1	24
09:15	0	20	3	0	1	0	0	0	0	0	0	1	25
09:30	0	20	17	0	0	2	0	1	1	0	2	0	43
09:45	0	16	8	1	1	0	0	0	2	0	1	0	29
	0	75	29	1	2	3	0	2	3	0	4	2	121
10:00	0	13	7	0	1	0	0	0	0	1	1	0	23
10:15	0	16	19	0	1	2	0	1	0	1	0	0	40
10:30	0	17	9	0	1	1	0	0	2	0	0	0	30
10:45	0	20	6	0	0	1	0	0	1	1	0	0	29
	0	66	41	0	3	4	0	1	3	1	2	1	122
11:00	0	26	10	0	0	0	1	0	0	2	0	1	40
11:15	0	9	9	0	0	1	0	1	0	0	0	0	20
11:30	0	26	9	0	0	1	2	0	0	0	0	0	38
11:45	0	27	12	0	1	1	0	0	1	1	2	0	46
	0	88	40	0	1	3	3	1	3	2	0	2	144
Total	1	503	207	1	9	15	15	10	11	5	18	1	802
Percent	0.1%	62.7%	25.8%	0.1%	1.1%	1.9%	1.9%	1.2%	1.4%	0.6%	2.2%	0.1%	0.7%

6  
6  
10  
5  
8  
31  
81  
137  
121  
122  
144

131 WB AM Peak Hour  
7-8 AM

WB AM Trucks	WB AM PHF
4	29
4	32
5	35
5	35
18	0.936
14%	

WB Start Time	Cars & Trailers		2 Axle Long	2 Axle 6 Tire		3 Axle Single	4 Axle Single		<5 Ax Double	5 Axle Double		>6 Ax Double	<6 Ax Multi	6 Axle Multi		>6 Ax Multi	Total
	Bikes	Trailers		Buses	6 Tire		Single	Double		Double	Double			Multi	Multi		
12:00	0	14	10	0	1	0	0	0	0	1	0	0	2	0	0	0	28
12:15	0	15	10	0	0	3	0	0	0	1	0	0	0	0	0	0	29
12:30	1	29	13	0	0	1	0	1	2	0	0	1	0	0	0	0	48
12:45	0	17	4	0	0	0	0	0	0	0	0	1	0	0	0	0	22
	1	75	37	0	1	4	0	1	4	0	0	4	0	0	0	0	127
13:00	0	24	6	0	2	1	0	0	0	1	0	0	0	0	0	0	34
13:15	0	20	15	0	0	0	0	0	0	0	0	0	0	0	0	0	35
13:30	0	18	3	0	1	0	0	0	0	1	0	0	0	0	0	0	23
13:45	0	16	13	0	0	1	0	0	1	0	0	1	1	0	0	0	33
	0	78	37	0	3	2	0	0	3	0	0	1	1	0	0	0	125
14:00	0	26	6	0	0	0	0	0	0	0	0	0	0	0	1	0	33
14:15	0	17	6	0	1	1	0	0	0	0	0	0	0	0	0	0	25
14:30	0	19	6	0	2	1	0	0	0	0	1	0	0	0	0	0	29
14:45	0	38	16	0	2	0	0	1	4	0	0	1	0	0	0	0	62
	0	100	34	0	5	2	0	1	4	1	0	1	0	1	0	0	149
15:00	0	40	7	0	1	0	0	0	1	1	1	1	0	0	0	0	51
15:15	0	37	7	0	0	0	1	1	1	0	0	2	0	0	0	0	49
15:30	0	38	6	0	0	1	0	1	2	0	0	1	0	1	0	0	50
15:45	0	52	11	0	0	0	0	0	1	0	0	0	0	0	1	0	65
	0	167	31	0	1	1	1	2	5	1	4	0	2	0	2	0	215
16:00	0	51	8	0	2	0	0	0	2	0	2	0	0	0	0	0	65
16:15	0	56	11	0	1	1	0	0	3	0	1	0	0	1	0	0	74
16:30	0	75	21	0	1	2	0	0	1	0	4	0	0	0	0	0	104
16:45	0	98	25	0	1	3	1	1	7	0	2	0	0	0	0	0	138
	0	280	65	0	5	6	1	1	13	0	9	0	1	0	1	0	381
17:00	0	89	20	0	0	0	0	1	2	1	3	0	1	0	1	0	117
17:15	0	80	19	0	0	1	0	0	0	0	2	0	0	0	0	0	102
17:30	0	59	13	0	0	0	0	0	1	0	2	0	0	0	0	0	75
17:45	0	37	3	0	1	0	0	0	0	0	1	0	0	0	0	0	42
	0	265	55	0	1	1	0	1	3	1	8	0	1	0	1	0	336
18:00	0	33	4	0	0	0	1	0	1	0	0	0	0	0	0	0	39
18:15	0	37	6	0	0	0	0	0	1	0	1	0	0	0	0	0	45
18:30	0	31	4	0	0	0	0	0	1	0	0	0	0	0	0	0	36
18:45	0	16	2	0	0	0	0	0	0	0	1	0	0	0	0	0	19
	0	117	16	0	0	0	1	0	3	0	2	0	0	0	0	0	139
19:00	0	29	2	0	0	0	0	0	0	0	0	0	0	0	0	0	31
19:15	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	17
19:30	0	32	5	0	0	0	0	0	0	0	0	0	0	0	0	0	37
19:45	0	27	0	0	0	0	0	0	0	0	1	0	0	0	0	0	28
	0	103	9	0	0	0	0	0	0	0	1	0	0	0	0	0	113
20:00	0	14	4	0	0	1	0	0	0	0	0	0	0	0	0	0	19
20:15	0	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	15
20:30	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	16
20:45	0	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	16
	0	55	10	0	0	1	0	0	0	0	0	0	0	0	0	0	66
21:00	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
21:15	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8
21:30	0	4	1	0	0	2	0	0	0	0	0	0	0	0	0	0	7
21:45	0	6	0	0	0	0	0	0	0	0	1	0	0	0	0	0	7
	0	27	2	0	0	2	0	0	0	1	0	0	0	0	0	0	32
22:00	0	9	0	0	0	1	0	0	0	0	0	0	0	0	0	0	10
22:15	0	5	1	0	0	0	0	0	0	0	1	0	0	0	0	0	7
22:30	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
22:45	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
	0	25	1	0	0	1	0	0	0	0	1	0	0	0	0	0	28
23:00	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
23:15	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	10
23:30	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7
23:45	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7
	0	31	3	0	0	0	0	0	0	0	0	0	0	0	0	0	34
Total	1	1323	300	0	16	20	3	6	35	4	31	1	5	0	0	0	1745
Percent	0.1%	75.8%	17.2%	0.0%	0.9%	1.1%	0.2%	0.3%	2.0%	0.2%	1.8%	0.1%	0.3%				
Grand Total	2	1826	507	1	25	35	18	16	46	9	49	2	11				2547
Percent	0.1%	71.7%	19.9%	0.0%	1.0%	1.4%	0.7%	0.6%	1.8%	0.4%	1.9%	0.1%	0.4%				

0  
127  
125  
149  
215  
336  
113  
66  
32  
28  
34

WB PM Trucks	WB PM PHF
6	65
7	74
8	104
15	138
36	0.690
9%	

381 WB PM Peak Hour  
4-5 PM

EB, WB	Cars &		2 Axle	2 Axle		3 Axle	4 Axle		<5 Axl	5 Axle		>6 Axl	<6 Axl	6 Axle	>6 Axl	Total	Total	EB, WB
Start	Bikes	Trailers	Long	Buses	6 Tire	Single	Single	Double	Double	Double	Multi	Multi	Multi	Multi	Multi			
08:23:23	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
00:15	1	6	1	0	0	0	0	0	0	0	0	0	0	0	0	8		
00:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
00:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
	1	14	1	0	0	0	0	0	0	0	0	0	0	0	0	16		16
01:00	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	3		
01:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
01:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
01:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
	0	9	0	0	0	0	0	0	0	1	0	0	0	0	0	10		10
02:00	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6		
02:15	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8		
02:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
02:45	0	6	0	0	0	0	1	0	0	0	0	0	0	0	0	7		
	0	21	2	0	0	0	1	0	0	0	0	0	0	0	0	24		24
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
03:15	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2		
03:30	0	5	1	0	0	0	0	0	1	0	0	0	0	0	0	7		
03:45	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5		
	0	11	3	0	0	0	0	0	1	0	0	0	0	0	0	15		15
04:00	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6		
04:15	0	6	5	0	0	0	0	0	2	1	0	0	0	0	0	14		
04:30	0	10	4	0	0	0	0	0	0	2	0	0	0	0	0	16		
04:45	0	13	3	0	0	0	0	0	2	1	0	0	0	0	0	19		
	0	34	13	0	0	0	0	4	4	0	0	0	0	0	0	55		55
05:00	0	17	5	0	0	1	0	0	0	0	0	0	0	0	0	23		
05:15	0	26	15	0	0	1	0	0	0	1	0	0	0	0	0	43		
05:30	0	28	12	0	0	2	0	0	0	0	0	0	0	0	0	42		
05:45	0	34	19	0	0	2	1	0	1	0	0	0	0	0	0	57		
	0	105	51	0	0	6	1	0	1	1	0	0	0	0	0	165		165
06:00	0	31	6	0	0	1	2	0	4	1	1	0	0	0	0	46		
06:15	0	39	17	0	1	0	1	0	3	0	2	0	0	0	0	63		
06:30	0	49	11	0	1	0	1	1	0	1	0	0	0	0	0	64		
06:45	0	59	17	0	1	1	2	0	1	1	1	0	0	0	0	83		
	0	178	51	0	3	2	6	1	8	3	4	0	0	0	0	256		256
07:00	0	61	13	0	1	2	3	4	0	0	4	0	0	0	0	88		
07:15	1	76	21	0	2	1	1	1	3	2	0	0	0	0	0	108		
07:30	0	87	20	0	1	4	2	2	0	0	2	0	0	0	0	118		
07:45	0	77	20	0	3	1	3	0	3	0	3	0	1	0	0	111		
	1	301	74	0	7	8	9	7	6	2	9	0	1	0	0	425		425
08:00	0	87	16	1	1	0	0	3	0	1	4	0	1	0	0	114		
08:15	0	89	19	0	0	2	0	0	3	0	2	0	1	0	0	116		
08:30	0	74	19	0	2	1	0	1	1	0	2	0	0	0	0	100		
08:45	0	58	20	0	0	1	0	1	3	0	2	0	0	0	0	85		
	0	308	74	1	3	4	0	5	7	1	10	0	2	0	0	415		415
09:00	0	65	17	0	3	1	0	1	0	0	2	0	1	0	0	90		
09:15	0	51	18	0	3	0	0	0	1	0	1	0	1	0	0	75		
09:30	0	46	29	0	0	4	0	1	1	0	3	0	0	0	0	84		
09:45	0	37	16	1	2	0	0	0	2	0	1	0	0	0	0	60		
	0	199	80	1	8	5	0	2	4	0	7	0	3	0	0	309		309
10:00	0	34	19	0	1	1	2	2	1	0	1	0	1	0	0	62		
10:15	0	39	26	0	2	2	0	1	1	0	1	0	0	0	0	72		
10:30	0	49	17	0	1	3	1	0	3	0	2	0	0	0	0	76		
10:45	0	41	14	0	0	3	0	0	1	1	1	0	0	0	0	61		
	0	163	76	0	4	9	3	3	6	1	5	1	0	0	0	271		271
11:00	0	50	21	0	1	1	1	0	0	2	1	0	2	0	0	79		
11:15	0	29	21	0	0	2	1	1	0	0	0	0	0	0	0	54		
11:30	0	43	18	0	1	1	2	0	0	0	2	0	0	0	0	67		
11:45	0	51	23	0	3	1	0	0	3	1	2	0	1	0	0	85		
	0	173	83	0	5	5	4	1	3	3	5	0	3	0	0	285		285
Total	2	1516	508	2	30	39	24	19	40	16	40	1	9	0	0	2246		
Percent	0.1%	67.5%	22.6%	0.1%	1.3%	1.7%	1.1%	0.8%	1.8%	0.7%	1.8%	0.0%	0.4%					

Total EB, WB

16

10

24

15

55

165

256

425 EB, WB AM Peak Ho  
7-8 AM

EB, WB AM Trucks	EB, WB AM PHF
14	88
10	108
11	118
14	111
49	0.900
12%	

415

309

271

285

EB, WB	Bikes	Cars & Trailers	2 Axle Long	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12 PM	0	26	18	3	1	0	0	1	0	2	0	0	51
12:15	0	49	16	1	3	2	1	2	0	0	0	0	74
12:30	1	55	22	0	2	0	1	2	0	2	0	0	85
12:45	0	37	7	0	1	0	0	1	0	2	0	1	49
	1	167	63	4	7	2	2	6	0	6	0	1	259
13:00	0	42	10	2	1	0	0	2	0	1	0	0	58
13:15	0	42	21	0	0	1	0	1	1	0	0	0	66
13:30	0	39	11	0	1	0	0	1	0	0	0	0	52
13:45	0	35	21	1	1	1	1	1	1	1	1	0	64
	0	158	63	4	2	2	1	5	2	2	1	0	240
14:00	0	51	13	1	1	1	0	0	0	1	0	1	69
14:15	0	43	15	2	1	2	0	1	0	1	0	0	65
14:30	0	38	12	2	1	1	0	1	1	0	0	0	56
14:45	0	65	21	2	0	0	1	6	0	2	0	0	97
	0	197	61	7	3	4	1	8	1	4	0	1	287
15:00	1	65	11	1	0	0	0	2	1	2	0	0	83
15:15	0	74	22	1	0	1	1	1	0	2	0	0	102
15:30	1	64	18	0	1	0	2	2	0	2	0	1	91
15:45	0	80	25	0	1	0	0	1	0	0	0	1	108
	2	283	76	2	2	1	3	6	1	6	0	2	384
16:00	0	90	19	3	0	0	0	3	0	5	0	1	121
16:15	0	101	17	1	1	0	1	3	0	3	0	1	128
16:30	0	120	32	1	2	0	0	1	0	8	0	1	165
16:45	0	136	36	1	3	2	1	8	0	4	0	0	191
	0	447	104	6	6	2	2	15	0	20	0	3	605
17:00	0	150	26	0	0	0	1	2	1	5	0	2	187
17:15	0	123	27	0	0	1	0	0	0	5	0	0	156
17:30	0	107	20	0	0	0	0	1	0	2	0	0	130
17:45	1	58	11	1	0	0	0	0	0	1	0	0	72
	1	438	84	1	1	0	1	3	1	13	0	2	545
18:00	0	56	10	0	0	1	0	2	0	0	0	0	69
18:15	0	56	12	0	0	0	0	2	0	1	0	0	71
18:30	0	62	4	0	0	0	0	1	1	0	0	0	68
18:45	0	36	4	0	0	0	0	0	0	2	0	0	42
	0	210	30	0	0	1	0	5	1	3	0	0	250
19:00	0	40	7	0	0	0	0	0	0	0	0	0	47
19:15	0	33	4	0	0	0	0	0	0	1	0	0	38
19:30	0	44	8	0	0	0	0	0	0	0	0	0	52
19:45	0	39	2	0	0	0	0	0	0	1	0	0	42
	0	156	21	0	0	0	0	0	0	2	0	0	179
20:00	0	29	11	0	0	2	0	0	0	3	0	0	45
20:15	0	28	2	0	0	0	0	0	0	0	0	0	30
20:30	0	17	5	0	0	0	0	0	0	0	0	0	22
20:45	0	23	2	0	0	0	0	0	0	0	0	0	25
	0	97	20	0	2	0	0	0	0	3	0	0	122
21:00	0	14	2	0	0	0	0	0	0	0	0	0	16
21:15	0	16	3	0	1	0	0	0	0	0	0	0	20
21:30	0	10	2	0	2	0	0	0	0	0	0	0	14
21:45	0	11	0	0	0	0	0	0	1	0	0	0	12
	0	51	7	0	3	0	0	0	1	0	0	0	62
22:00	0	14	0	0	1	0	1	0	0	0	0	0	16
22:15	0	12	6	0	0	0	0	0	0	1	0	0	19
22:30	0	10	0	0	0	0	0	0	0	0	0	0	10
22:45	0	11	1	0	0	1	0	0	0	0	0	0	13
	0	47	7	0	1	1	1	0	0	1	0	0	58
23:00	0	13	3	0	0	0	0	0	0	0	0	0	16
23:15	0	11	2	0	1	0	0	0	0	0	0	0	14
23:30	0	6	2	0	0	0	0	0	0	0	0	0	8
23:45	0	8	1	0	0	0	0	0	0	0	0	0	9
	0	38	8	0	1	0	0	0	0	0	0	0	47
Total	4	2289	544	24	28	13	11	48	7	60	1	9	3038
Percent	0.1%	75.3%	17.9%	0.0%	0.8%	0.9%	0.4%	1.6%	0.2%	2.0%	0.0%	0.3%	
Grand Total	6	3805	1052	2	54	67	37	88	23	100	2	18	5284
Percent	0.1%	72.0%	19.9%	0.0%	1.0%	1.3%	0.7%	0.6%	1.7%	0.4%	1.9%	0.0%	0.3%

Total  
259  
240  
287  
384  
605  
545  
179  
122  
62  
58  
47  
5284 EB, WB TOTAL

EB, WB PM Trucks	EB, WB PM PHF
12	121
10	128
13	165
19	191
54	0.792
9%	

605 EB, WB PM Peak Ho  
4-5 PM

WR 34 - 1.0 km East of WR 32  
Date Start: 11-Oct-23 Date End:

Start Time	Cars & Trailers		2 Axle Long	2 Axle		3 Axle Single	4 Axle		<5 Axl Double	5 Axle		>6 Axl Double	<6 Axl Multi	6 Axle		>6 Axl Multi	Total
	Bikes	Trailers		Buses	6 Tire		Single	Double		Multi	Multi						
10/11/23	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
00:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
01:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:45	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
03:30	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
03:45	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
04:00	0	2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	4
04:15	0	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	13
04:30	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5
04:45	0	12	3	0	0	0	0	0	0	0	0	0	0	0	0	0	15
	0	27	9	0	0	0	0	0	1	0	0	0	0	0	0	0	37
05:00	0	11	4	0	0	1	0	0	2	0	0	0	0	0	0	0	18
05:15	0	15	5	0	0	1	0	0	0	0	0	0	0	0	0	0	21
05:30	0	23	8	0	1	1	0	0	4	0	0	0	0	0	0	0	37
05:45	0	37	11	0	1	0	0	0	1	0	0	0	0	0	0	0	50
	0	86	28	0	2	3	0	0	7	0	0	0	0	0	0	0	126
06:00	0	26	6	0	1	1	0	0	1	0	0	0	0	0	0	0	35
06:15	0	37	9	0	0	0	0	0	2	0	1	0	0	0	0	0	49
06:30	0	39	9	0	1	0	0	0	1	0	1	0	0	0	0	0	51
06:45	0	36	16	0	0	1	0	2	5	0	1	0	0	0	0	0	61
	0	138	40	0	2	2	0	2	9	0	3	0	0	0	0	0	196
07:00	0	48	10	0	1	1	0	0	3	1	2	0	0	0	0	0	66
07:15	0	57	19	0	1	0	0	0	1	0	0	0	0	0	0	0	78
07:30	0	65	18	0	0	2	2	0	1	0	3	0	0	0	0	0	91
07:45	0	59	14	0	2	0	1	1	1	2	2	0	0	0	0	0	82
	0	229	61	0	4	3	1	1	6	3	7	0	0	0	0	0	317
08:00	0	63	18	0	3	1	0	0	2	0	2	0	0	1	0	0	90
08:15	0	58	18	0	0	2	0	0	3	0	1	0	0	0	0	0	82
08:30	1	51	9	0	2	1	0	1	0	0	1	0	0	0	0	0	66
08:45	0	48	13	0	2	1	0	0	1	0	1	0	0	0	0	0	66
	1	220	58	0	7	5	0	1	6	0	5	0	1	0	0	0	304
09:00	0	38	19	0	2	0	0	0	1	0	2	0	0	0	0	0	62
09:15	0	32	15	0	1	0	1	2	0	0	2	0	0	0	0	0	53
09:30	0	24	9	0	1	0	2	0	1	0	1	0	0	0	0	0	38
09:45	0	17	7	0	0	0	0	2	0	0	1	0	0	0	0	0	27
	0	111	50	0	4	0	3	4	2	0	6	0	0	0	0	0	180
10:00	0	17	9	0	0	1	0	0	0	0	1	0	0	0	0	0	28
10:15	0	22	8	0	0	1	0	0	0	0	0	0	0	0	0	0	31
10:30	0	22	9	0	1	1	2	2	1	0	2	0	0	0	0	0	40
10:45	0	26	11	0	0	2	0	0	0	2	0	0	0	0	0	0	41
	0	87	37	0	1	5	2	2	1	2	3	0	0	0	0	0	140
11:00	0	21	9	0	1	0	0	1	1	0	0	0	0	0	0	0	33
11:15	0	16	9	0	1	1	0	0	0	0	1	0	0	0	0	0	28
11:30	0	11	5	0	1	1	2	2	1	0	1	0	0	0	0	0	24
11:45	0	21	12	0	0	0	0	0	0	0	1	0	0	0	0	0	34
	0	69	35	0	3	2	2	3	2	0	3	0	0	0	0	0	119
Total	1	998	318	0	23	20	10	13	34	5	27	0	1	0	0	0	1450
Percent	0.1%	68.8%	21.9%	0.0%	1.6%	1.4%	0.7%	0.9%	2.3%	0.3%	1.9%	0.0%	0.1%				

Hourly

5

5

8

13

37

126

196

317 EB AM Peak Hour  
7-8 AM

304

180

140

119

EB AM Trucks	EB AM PHF
8	66
2	78
8	91
9	82
27	0.871
9%	

Inters AM PHF
96
118
132
123
0.888

0

Start Time	Bikes	Cars & Trailers	2 Axle Long	2 Axle Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Double	5 Axle Double	>6 Ax Double	<6 Ax Multi	6 Axle Multi	>6 Ax Multi	Total
12 PM	0	16	5	0	0	0	0	1	1	0	0	0	0	23
12:15	0	21	10	0	2	1	0	0	0	1	0	0	0	35
12:30	0	18	8	0	1	0	0	1	1	0	0	0	1	30
12:45	0	17	6	0	2	0	2	0	0	0	1	0	0	28
	0	72	29	0	5	1	2	2	2	1	1	0	1	116
13:00	0	16	5	0	0	1	0	0	1	2	0	0	0	25
13:15	0	19	9	0	0	0	0	0	0	0	1	0	0	29
13:30	0	15	4	0	0	0	0	0	1	0	0	0	0	20
13:45	1	15	4	0	1	0	2	0	1	0	0	0	1	25
	1	65	22	0	1	1	2	0	3	2	1	0	1	99
14:00	0	21	6	0	0	0	0	0	0	2	1	0	0	30
14:15	0	22	9	0	1	0	0	0	1	0	1	0	0	34
14:30	0	23	4	0	0	0	0	0	0	0	0	0	1	28
14:45	0	23	4	0	1	0	0	0	0	2	0	0	0	30
	0	89	23	0	2	0	0	0	1	4	2	0	1	122
15:00	0	24	5	0	0	1	0	0	1	0	0	0	0	31
15:15	0	35	12	0	0	0	0	0	0	1	1	0	0	49
15:30	0	31	10	0	1	0	0	0	0	0	0	0	1	43
15:45	0	32	11	0	0	0	0	3	0	0	1	0	0	47
	0	122	38	0	1	1	0	3	1	1	2	0	1	170
16:00	1	47	12	0	0	0	0	0	0	0	2	0	0	62
16:15	0	40	16	0	0	0	0	0	0	1	1	0	2	60
16:30	0	56	9	0	0	0	0	0	0	0	3	0	1	69
16:45	0	43	8	0	0	0	0	1	1	0	2	0	0	55
	1	186	45	0	0	0	0	1	1	1	8	0	3	246
17:00	0	61	10	0	0	0	0	0	1	1	3	0	0	76
17:15	0	44	12	0	0	0	0	0	1	0	3	0	0	60
17:30	0	46	9	0	0	0	2	0	0	0	0	0	0	57
17:45	0	27	7	0	0	0	0	0	0	0	0	0	0	34
	0	178	38	0	0	0	2	0	2	1	6	0	0	227
18:00	0	25	11	0	0	0	0	0	1	0	1	0	0	38
18:15	0	19	4	0	0	0	0	0	0	0	0	0	0	23
18:30	0	23	4	1	0	0	0	0	0	2	1	0	0	31
18:45	0	18	6	0	0	0	0	0	0	1	1	0	1	27
	0	85	25	1	0	0	0	0	1	3	3	0	1	119
19:00	0	6	3	0	0	0	2	0	0	0	1	0	1	13
19:15	0	11	2	0	0	0	0	0	0	1	0	0	0	14
19:30	0	10	2	0	0	0	1	2	0	0	0	0	0	15
19:45	0	8	2	0	0	0	0	0	0	1	0	0	0	11
	0	35	9	0	0	0	3	2	0	2	1	0	1	53
20:00	0	13	3	0	0	0	0	0	0	0	2	0	0	18
20:15	0	7	1	0	0	0	1	0	0	1	0	0	0	10
20:30	0	6	2	0	0	1	0	0	0	0	0	0	0	9
20:45	0	6	1	0	0	0	0	0	0	0	0	0	0	7
	0	32	7	0	0	1	1	0	0	1	2	0	0	44
21:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
21:15	0	8	1	0	0	0	0	0	0	0	0	0	0	9
21:30	0	7	0	0	0	0	0	0	0	0	0	0	0	7
21:45	0	4	2	0	0	0	0	0	0	0	0	0	0	6
	0	23	4	0	0	0	0	0	0	0	0	0	0	27
22:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
22:15	0	7	2	0	0	1	0	0	0	0	0	0	0	10
22:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
22:45	0	2	0	0	0	1	0	0	0	0	0	0	0	3
	0	15	4	0	0	2	0	0	0	0	0	0	0	21
23:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
23:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
23:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1
23:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
	0	7	3	0	0	0	0	0	0	0	0	0	0	10
Total	2	909	247	1	9	6	10	8	11	16	26	0	9	1254
Percent	0.2%	72.5%	19.7%	0.1%	0.7%	0.5%	0.8%	0.6%	0.9%	1.3%	2.1%	0.0%	0.7%	
Grand Total	3	1907	565	1	32	26	20	21	45	21	53	0	10	2704
Percent	0.1%	70.5%	20.9%	0.0%	1.2%	1.0%	0.7%	0.8%	1.7%	0.8%	2.0%	0.0%	0.4%	

Total

116

99

122

170

246 EB PM Peak Hour  
4-5 PM

EB PM Trucks	EB PM PHF
2	62
4	60
4	69
4	55
14	0.891
6%	

Inters PM PHF
128
136
182
194
0.825

227

119

53

44

27

21

10

WB Start Time	Bikes	Cars & Trailers	2 Axle Long	2 Axle Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Double	5 Axle Double	>6 Ax Double	<6 Ax Multi	6 Axle Multi	>6 Ax Multi	Total
10/11/23	0	1	0	0	0	0	0	0	0	0	0	0	0	1
00:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	2	1	0	0	0	0	0	0	0	0	0	0	3
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	0	7	0	0	0	0	0	0	0	0	0	0	0	7
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:45	0	1	1	0	0	0	0	0	0	0	0	0	0	2
	0	3	3	0	0	0	0	0	0	0	0	0	0	6
05:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
05:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
05:30	0	5	8	0	0	0	0	0	0	0	0	0	0	13
05:45	0	9	3	0	0	0	0	0	0	0	0	0	0	12
	0	17	14	0	0	0	0	0	0	0	0	0	0	31
06:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
06:15	0	11	8	0	0	0	0	0	0	0	0	0	0	19
06:30	0	12	7	0	0	0	0	0	0	0	0	0	0	19
06:45	0	27	5	0	0	0	0	0	0	0	0	0	0	32
	0	57	23	0	0	0	0	0	0	0	0	0	0	80
07:00	0	22	6	0	0	0	0	0	0	0	2	0	0	30
07:15	0	30	8	0	0	0	0	1	0	0	0	0	1	40
07:30	0	30	10	0	0	0	1	0	0	0	0	0	0	41
07:45	0	31	8	0	0	0	0	0	2	0	0	0	0	41
	0	113	32	0	0	0	1	0	3	0	2	0	1	152
08:00	1	27	8	0	0	1	0	0	0	0	1	0	0	38
08:15	0	27	15	0	0	1	0	2	0	2	0	0	0	47
08:30	0	29	4	0	1	0	0	2	0	0	0	0	1	37
08:45	0	20	12	0	0	1	0	0	0	0	0	0	0	33
	1	103	39	0	0	3	0	4	0	2	1	0	1	155
09:00	0	26	4	0	0	0	0	2	0	0	1	0	0	33
09:15	0	18	3	0	0	1	0	0	0	0	0	0	1	23
09:30	0	24	10	0	0	1	0	0	2	0	0	0	0	37
09:45	0	14	7	0	1	0	2	0	0	0	1	0	1	26
	0	82	24	0	1	2	2	2	2	0	2	0	2	119
10:00	0	11	8	0	1	1	2	0	0	2	0	0	0	25
10:15	0	19	8	0	0	1	0	0	0	0	1	0	0	29
10:30	0	11	8	0	0	0	1	2	0	0	0	0	0	22
10:45	0	16	10	0	1	0	0	0	0	1	1	0	1	30
	0	57	34	0	2	2	3	2	0	3	2	0	1	106
11:00	0	20	7	0	1	1	0	0	1	0	0	1	0	31
11:15	0	15	14	0	1	1	0	0	2	0	0	0	0	33
11:30	0	13	7	0	0	0	0	1	1	0	0	0	1	23
11:45	0	18	11	0	1	2	2	0	2	1	1	0	0	38
	0	66	39	0	3	4	2	1	6	1	1	1	1	125
Total	1	512	210	0	7	11	8	9	11	6	8	1	6	790
Percent	0.1%	64.8%	26.6%	0.0%	0.9%	1.4%	1.0%	1.1%	1.4%	0.8%	1.0%	0.1%	0.8%	

4  
3  
7  
2  
6  
31  
80  
155  
119  
106  
125

152 WB AM Peak Hour  
7-8 AM

WB AM Trucks	WB AM PHF
2	30
2	40
1	41
2	41
7	0.927
5%	

WB Start Time	Bikes	Cars & Trailers	2 Axle Long	2 Axle 6 Tire Buses	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12 PM	0	20	9	0	0	0	1	1	0	0	0	1	32
12:15	0	19	11	0	0	2	2	0	0	2	0	0	36
12:30	0	25	12	0	1	4	0	2	0	1	0	0	45
12:45	0	14	4	0	1	0	0	1	0	1	0	0	21
	0	78	36	0	2	6	2	1	4	4	0	1	134
13:00	0	15	6	0	0	0	0	0	3	0	0	0	24
13:15	0	19	6	0	0	0	0	0	1	0	0	0	26
13:30	0	14	4	0	0	0	0	1	2	2	0	0	23
13:45	0	13	5	0	1	0	0	3	1	0	0	0	23
	0	61	21	0	1	0	0	4	7	2	0	0	96
14:00	0	21	7	0	0	1	0	0	0	0	0	0	29
14:15	0	17	4	1	0	0	0	0	1	1	0	0	24
14:30	0	14	3	1	1	0	4	0	0	0	0	0	23
14:45	0	29	8	0	1	1	1	0	2	0	1	0	43
	0	81	22	2	2	2	5	0	3	1	1	0	119
15:00	0	44	8	0	1	1	0	0	2	0	1	0	57
15:15	0	36	7	0	0	1	2	0	2	0	1	0	49
15:30	0	58	12	1	0	0	1	0	1	0	2	0	75
15:45	0	69	13	0	0	0	0	0	4	0	1	0	88
	0	207	40	1	1	2	3	0	9	0	5	0	269
16:00	0	47	10	0	2	1	2	0	1	0	1	0	66
16:15	0	55	13	0	2	1	0	0	2	0	2	0	76
16:30	0	94	15	0	0	1	1	0	1	0	1	0	113
16:45	0	95	27	0	2	3	0	0	7	0	4	0	139
	0	291	65	0	6	6	3	0	11	0	8	0	394
17:00	0	94	25	0	1	1	0	0	2	0	3	0	126
17:15	0	79	22	0	1	1	1	0	2	0	3	0	110
17:30	0	52	14	0	0	1	0	0	0	0	1	0	68
17:45	0	30	6	0	0	0	2	0	0	1	0	0	40
	0	255	67	0	2	3	3	0	4	1	7	0	344
18:00	0	33	5	0	0	1	0	0	0	2	0	0	41
18:15	0	36	8	0	0	0	2	0	0	0	0	0	46
18:30	0	25	5	0	1	0	0	2	1	0	1	0	35
18:45	0	20	1	0	0	0	0	0	0	0	0	0	21
	0	114	19	0	1	1	2	1	0	3	0	0	143
19:00	0	22	3	0	0	1	0	2	0	0	0	0	28
19:15	0	9	2	0	0	0	2	0	0	1	0	0	14
19:30	0	28	3	0	0	0	0	1	1	0	0	0	33
19:45	1	20	2	0	0	0	0	0	0	0	0	1	24
	1	79	10	0	0	1	2	3	1	1	0	0	99
20:00	0	10	3	0	0	0	0	1	0	0	1	1	16
20:15	0	11	1	0	0	2	1	0	0	1	0	0	16
20:30	0	10	1	0	0	0	0	2	0	0	0	0	13
20:45	0	6	0	0	0	1	0	3	0	0	0	1	11
	0	37	5	0	0	3	1	6	0	1	1	1	56
21:00	0	7	0	0	0	0	2	0	0	1	0	0	10
21:15	0	7	1	0	0	0	0	0	0	0	0	0	8
21:30	0	7	1	0	0	3	0	0	0	0	1	0	12
21:45	0	3	0	0	0	1	0	0	0	2	0	0	6
	0	24	2	0	0	4	2	0	0	3	1	0	36
22:00	0	7	0	0	0	0	0	0	0	0	0	0	7
22:15	0	5	0	0	0	0	0	0	0	1	0	0	6
22:30	0	5	0	0	0	0	0	0	0	0	0	0	5
22:45	0	4	1	0	0	0	0	0	0	0	0	0	5
	0	21	1	0	0	0	0	0	0	1	0	0	23
23:00	0	6	1	0	0	0	0	0	0	0	0	0	7
23:15	0	5	1	0	0	0	0	0	0	0	0	0	6
23:30	0	7	0	0	0	0	0	0	0	0	0	0	7
23:45	0	4	1	0	0	0	0	0	0	0	0	0	5
	0	22	3	0	0	0	0	0	0	0	0	0	25
Total	1	1270	291	3	15	28	23	16	40	10	30	1	1738
Percent	0.1%	73.1%	16.7%	0.2%	0.9%	1.6%	1.3%	0.9%	2.3%	0.6%	1.7%	0.1%	0.6%
Grand Total	2	1782	501	3	22	39	31	25	51	16	38	2	2528
Percent	0.1%	70.5%	19.8%	0.1%	0.9%	1.5%	1.2%	1.0%	2.0%	0.6%	1.5%	0.1%	0.6%

Total

134

96

119

269

WB PM Trucks	WB PM PHF
9	66
8	76
4	113
17	139
38	0.709
10%	

394 WB PM Peak Hour  
4-5 PM

344

143

99

56

36

23

25

EB, WB	Cars & Trailers	2 Axle Long	2 Axle Buses	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total	Total	EB, WB
10/11/23	0	2	0	0	0	0	0	0	0	0	0	2		
00:15	0	4	0	0	0	0	0	0	0	0	0	4		
00:30	0	0	0	0	0	0	0	0	0	0	0	0		
00:45	0	3	0	0	0	0	0	0	0	0	0	3		
	0	9	0	0	0	0	0	0	0	0	0	9		9
01:00	0	3	0	0	0	0	0	0	0	0	0	3		
01:15	0	1	0	0	0	0	0	0	0	0	0	1		
01:30	0	1	1	0	0	0	0	0	0	0	0	2		
01:45	0	2	0	0	0	0	0	0	0	0	0	2		
	0	7	1	0	0	0	0	0	0	0	0	8		8
02:00	0	4	0	0	0	0	0	0	0	0	0	4		
02:15	0	3	0	0	0	0	0	0	0	0	0	3		
02:30	0	3	0	0	0	0	0	0	0	0	0	3		
02:45	0	5	0	0	0	0	0	0	0	0	0	5		
	0	15	0	0	0	0	0	0	0	0	0	15		15
03:00	0	0	0	0	0	0	0	0	0	0	0	0		
03:15	0	2	0	0	0	0	0	0	0	0	0	2		
03:30	0	7	1	0	0	0	0	0	0	0	0	8		
03:45	0	5	0	0	0	0	0	0	0	0	0	5		
	0	14	1	0	0	0	0	0	0	0	0	15		15
04:00	0	3	2	0	0	0	0	1	0	0	0	6		
04:15	0	10	3	0	0	0	0	0	0	0	0	13		
04:30	0	4	3	0	0	0	0	0	0	0	0	7		
04:45	0	13	4	0	0	0	0	0	0	0	0	17		
	0	30	12	0	0	0	1	0	0	0	0	43		43
05:00	0	13	6	0	1	0	0	2	0	0	0	22		
05:15	0	16	6	0	1	0	0	0	0	0	0	23		
05:30	0	28	16	0	1	0	0	4	0	0	0	50		
05:45	0	46	14	0	1	0	0	1	0	0	0	62		
	0	103	42	0	2	3	0	7	0	0	0	157		157
06:00	0	33	9	0	1	1	0	1	0	0	0	45		
06:15	0	48	17	0	0	0	0	2	0	1	0	68		
06:30	0	51	16	0	1	0	0	1	0	1	0	70		
06:45	0	63	21	0	0	1	0	2	5	0	1	93		
	0	195	63	0	2	2	0	9	0	3	0	276		276
07:00	0	70	16	0	1	1	0	3	1	4	0	96		
07:15	0	87	27	0	1	0	0	2	0	0	0	118		
07:30	0	95	28	0	0	2	3	0	1	0	3	132		
07:45	0	90	22	0	2	0	1	3	2	2	0	123		
	0	342	93	0	4	3	4	1	9	3	9	469		469
08:00	1	90	26	0	3	2	0	0	2	0	3	128		
08:15	0	85	33	0	0	3	0	2	3	2	1	129		
08:30	1	80	13	0	3	1	0	3	0	0	1	103		
08:45	0	68	25	0	2	2	0	0	1	0	1	99		
	2	323	97	0	8	8	0	5	6	2	6	459		459
09:00	0	64	23	0	2	0	0	2	1	0	3	95		
09:15	0	50	18	0	1	1	1	2	0	0	2	76		
09:30	0	48	19	0	1	1	2	0	3	0	1	75		
09:45	0	31	14	0	1	0	2	2	0	0	2	53		
	0	193	74	0	5	2	5	6	4	0	8	299		299
10:00	0	28	17	0	1	2	2	0	0	2	1	53		
10:15	0	41	16	0	0	2	0	0	0	0	1	60		
10:30	0	33	17	0	1	1	3	4	1	0	2	62		
10:45	0	42	21	0	1	2	0	0	0	3	1	71		
	0	144	71	0	3	7	5	4	1	5	5	246		246
11:00	0	41	16	0	2	1	0	1	2	0	0	64		
11:15	0	31	23	0	2	2	0	0	2	0	1	61		
11:30	0	24	12	0	1	1	2	3	2	0	1	47		
11:45	0	39	23	0	1	2	2	0	2	1	2	72		
	0	135	74	0	6	6	4	4	8	1	4	244		244
Total	2	1510	528	0	30	31	18	22	45	11	35	2240		
Percent	0.1%	67.4%	23.6%	0.0%	1.3%	1.4%	0.8%	1.0%	2.0%	0.5%	1.6%	0.0%	0.3%	

EB, WB AM Trucks	EB, WB AM PHF
10	96
4	118
9	132
11	123
34	0.888
7%	

469 EB, WB AM Peak Ho  
7-8 AM

EB, WB Start Time	Cars & Trailers		2 Axle Long	2 Axle 6 Tire		3 Axle Single	4 Axle Single		<5 Axl Double	5 Axle Double		>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
	Bikes	Trailers		Buses	6 Tire		Single	Double		Double	Double					
12 PM	0	36	14	0	0	0	0	2	2	0	0	0	0	0	1	55
12:15	0	40	21	0	2	3	2	0	0	1	2	0	0	0	0	71
12:30	0	43	20	0	2	4	0	1	3	0	1	0	1	0	1	75
12:45	0	31	10	0	3	0	2	0	1	0	2	0	0	0	0	49
	0	150	65	0	7	7	4	3	6	1	5	0	2	0	2	250
13:00	0	31	11	0	0	1	0	0	4	2	0	0	0	0	0	49
13:15	0	38	15	0	0	0	0	0	1	0	1	0	0	0	0	55
13:30	0	29	8	0	0	0	0	1	3	2	0	0	0	0	0	43
13:45	1	28	9	0	2	0	2	3	2	0	0	0	0	1	1	48
	1	126	43	0	2	1	2	4	10	4	1	0	1	0	1	195
14:00	0	42	13	0	0	1	0	0	0	2	1	0	0	0	0	59
14:15	0	39	13	1	1	0	0	0	2	1	1	0	0	0	0	58
14:30	0	37	7	1	1	0	4	0	0	0	0	0	0	0	1	51
14:45	0	52	12	0	2	1	1	0	2	2	1	0	0	0	0	73
	0	170	45	2	4	2	5	0	4	5	3	0	1	0	1	241
15:00	0	68	13	0	1	2	0	0	3	0	1	0	0	0	0	88
15:15	0	71	19	0	0	1	2	0	2	1	2	0	0	0	0	98
15:30	0	89	22	1	1	0	1	0	1	0	2	0	1	1	1	118
15:45	0	101	24	0	0	0	0	3	4	0	2	0	1	1	1	135
	0	329	78	1	2	3	3	3	10	1	7	0	2	2	1	439
16:00	1	94	22	0	2	1	2	0	1	0	3	0	2	0	2	128
16:15	0	95	29	0	2	1	0	0	2	1	3	0	3	0	3	136
16:30	0	150	24	0	0	1	1	0	1	0	4	0	1	1	1	182
16:45	0	138	35	0	2	3	0	1	8	0	6	0	1	1	1	194
	1	477	110	0	6	6	3	1	12	1	16	0	7	1	7	640
17:00	0	155	35	0	1	1	0	0	3	1	6	0	0	0	0	202
17:15	0	123	34	0	1	1	1	0	3	0	6	0	1	1	1	170
17:30	0	98	23	0	0	1	2	0	0	0	1	0	0	0	0	125
17:45	0	57	13	0	0	0	2	0	0	1	0	0	0	1	0	74
	0	433	105	0	2	3	5	0	6	2	13	0	2	2	2	571
18:00	0	58	16	0	0	1	0	0	1	0	3	0	0	0	0	79
18:15	0	55	12	0	0	0	2	0	0	0	0	0	0	0	0	69
18:30	0	48	9	1	1	0	0	2	1	2	2	0	0	0	0	66
18:45	0	38	7	0	0	0	0	0	0	1	1	0	1	1	1	48
	0	199	44	1	1	1	2	2	2	3	6	0	1	1	1	262
19:00	0	28	6	0	0	1	2	2	0	0	1	0	1	0	1	41
19:15	0	20	4	0	0	0	2	0	0	2	0	0	0	0	0	28
19:30	0	38	5	0	0	0	1	3	1	0	0	0	0	0	0	48
19:45	1	28	4	0	0	0	0	0	0	1	0	0	1	0	1	35
	1	114	19	0	0	1	5	1	3	1	3	1	0	2	2	152
20:00	0	23	6	0	0	0	0	1	0	0	3	1	0	0	0	34
20:15	0	18	2	0	0	2	2	0	0	2	0	0	0	0	0	26
20:30	0	16	3	0	0	1	0	2	0	0	0	0	0	0	0	22
20:45	0	12	1	0	0	1	0	3	0	0	0	0	1	1	1	18
	0	69	12	0	0	4	2	6	0	2	3	1	1	1	1	100
21:00	0	11	1	0	0	0	2	0	0	1	0	0	0	0	0	15
21:15	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	17
21:30	0	14	1	0	0	3	0	0	0	0	1	0	0	0	0	19
21:45	0	7	2	0	0	1	0	0	0	2	0	0	0	0	0	12
	0	47	6	0	0	4	2	0	0	3	1	0	0	0	0	63
22:00	0	10	2	0	0	0	0	0	0	0	0	0	0	0	0	12
22:15	0	12	2	0	0	1	0	0	0	1	0	0	0	0	0	16
22:30	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
22:45	0	6	1	0	0	1	0	0	0	0	0	0	0	0	0	8
	0	36	5	0	0	2	0	0	0	1	0	0	0	0	0	44
23:00	0	9	2	0	0	0	0	0	0	0	0	0	0	0	0	11
23:15	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	8
23:30	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
23:45	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
	0	29	6	0	0	0	0	0	0	0	0	0	0	0	0	35
Total	3	2179	538	4	24	34	33	24	51	26	56	1	19	1	19	2992
Percent	0.1%	72.8%	18.0%	0.1%	0.8%	1.1%	1.1%	0.8%	1.7%	0.9%	1.9%	0.0%	0.6%			
Grand Total	5	3689	1066	4	54	65	51	46	96	37	91	2	26	2	26	5232
Percent	0.1%	70.5%	20.4%	0.1%	1.0%	1.2%	1.0%	0.9%	1.8%	0.7%	1.7%	0.0%	0.5%			

Total

250

195

241

439

EB, WB PM Trucks	EB, WB PM PHF
11	128
12	136
8	182
21	194
52	0.825
8%	

640 EB, WB PM Peak Ho  
4-5 PM

571

262

152

100

63

44

35

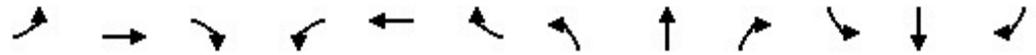
5232 EB, WB TOTAL

# Appendix B

**Total Traffic SYNCHRO Reports**

Volume  
2: WR 34 & Access

05/28/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	3	283	1	1	216	2	1	0	1	12	0	13
Future Volume (vph)	3	283	1	1	216	2	1	0	1	12	0	13
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.81	0.81	0.81	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	9%	9%	9%	5%	5%	5%	7%	7%	7%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	314	1	1	267	2	1	0	1	14	0	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	318	0	0	270	0	0	2	0	0	29	0
Intersection Summary												

# HCM Unsignalized Intersection Capacity Analysis

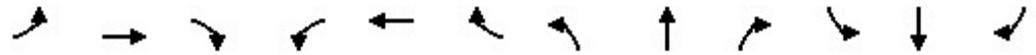
## 2: WR 34 & Access

05/28/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	283	1	1	216	2	1	0	1	12	0	13
Future Volume (Veh/h)	3	283	1	1	216	2	1	0	1	12	0	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.81	0.81	0.81	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	3	314	1	1	267	2	1	0	1	14	0	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	269			315			606	592	314	592	591	268
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	269			315			606	592	314	592	591	268
tC, single (s)	4.2			4.1			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			100	100	100	97	100	98
cM capacity (veh/h)	1255			1228			393	411	714	409	412	759
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	318	270	2	29								
Volume Left	3	1	1	14								
Volume Right	1	2	1	15								
cSH	1255	1228	507	537								
Volume to Capacity	0.00	0.00	0.00	0.05								
Queue Length 95th (m)	0.1	0.0	0.1	1.3								
Control Delay (s)	0.1	0.0	12.1	12.1								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.1	0.0	12.1	12.1								
Approach LOS			B	B								
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			27.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Volume  
2: WR 34 & Access

05/28/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	5	380	1	1	289	4	1	0	1	2	0	3
Future Volume (vph)	5	380	1	1	289	4	1	0	1	2	0	3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	17%	17%	17%	14%	14%	14%	7%	7%	7%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	400	1	1	340	5	1	0	1	2	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	406	0	0	346	0	0	2	0	0	5	0
Intersection Summary												

HCM Unsignalized Intersection Capacity Analysis  
2: WR 34 & Access

05/28/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	380	1	1	289	4	1	0	1	2	0	3
Future Volume (Veh/h)	5	380	1	1	289	4	1	0	1	2	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	5	400	1	1	340	5	1	0	1	2	0	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	345			401			758	758	400	756	756	342
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	345			401			758	758	400	756	756	342
tC, single (s)	4.3			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.4			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			100	100	100	99	100	100
cM capacity (veh/h)	1135			1096			315	329	639	317	330	689
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	406	346	2	5								
Volume Left	5	1	1	2								
Volume Right	1	5	1	3								
cSH	1135	1096	422	469								
Volume to Capacity	0.00	0.00	0.00	0.01								
Queue Length 95th (m)	0.1	0.0	0.1	0.2								
Control Delay (s)	0.1	0.0	13.6	12.8								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.1	0.0	13.6	12.8								
Approach LOS			B	B								
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization			33.7%		ICU Level of Service				A			
Analysis Period (min)			15									



# **Design and Operations Report**

## **Waste Processing Facility**

2374868 Ontario Inc.

March 26, 2024

<b>Project name</b>		Badger 2374868 Ont Inc.					
<b>Document title</b>		Design and Operations Report   Waste Processing Facility					
<b>Project number</b>		11210029					
<b>File name</b>		Document2					
<b>Status Code</b>	<b>Revision</b>	<b>Author</b>	<b>Reviewer</b>		<b>Approved for issue</b>		
			<b>Name</b>	<b>Signature</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
S4		Amelia Soutar	Fred Taylor		Fred Taylor		3/26/2024

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Table 1 Soil Analytical Data - 2023

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Figure 2	Site Layout
Figure 3	Topography
Figure 4	Process Flow Diagram

## Appendices

Appendix A	Zoning
Appendix B	Legal Survey
Appendix C	Traffic Study
Appendix D	Stormwater Management Plan (GHD, August 2022) (Text, Figures, Drawings and Tables only, no Appendices)
Appendix E	Aggregate Resources Act (ARA) Policy A.R. 6.00.03
Appendix F	Tracking Record Form
Appendix G	Inspection and Maintenance Form
Appendix H	Training Form
Appendix I	Environmental Emergency and Contingency Plan
Appendix J	Complaint Procedure Form

# 1. Introduction

This Design and Operations (D&O) Report has been prepared to support an application by 2374868 Ontario Inc. (the Applicant), for an Ontario Ministry of the Environment Conservation and Parks (MECP) Environmental Compliance Approval (ECA) (Waste Processing). The D&O Report describes the Applicant's hydrovac processing facility operations located at 6678 Wellington Road 34 in Wellington County, Township of Puslinch, Ontario (Site). The Site is located on a portion of a larger Property as shown on Figure 1. 2374868 Ontario Inc. owns the Property and operates the processing site. An application for an ECA (Air and Noise) also has been submitted. Based on pre consultation with MECP, an ECA (Industrial Sewage Works) is not required as a Stormwater Management Plan is included with the D&O Report.

The Facility receives soil mixed with water (liquid soil or nonhazardous waste) from hydrovacating operations conducted by Site personnel and trucks at multiple sites in southern Ontario. The soil water mixture is placed in stockpiles, water gravity drains off to a stormwater management pond, and the dry soil is sampled for chemical analysis to confirm that it is acceptable for use in rehabilitation for the closed Ontario Ministry of Natural Resources and Forestry (MNRF) licensed aggregate pit on the Property and other receiving sites.

## 1.1 Scope and Limitations

*This report: has been prepared by GHD for 2374868 Ontario Inc. and may only be used and relied on by 2374868 Ontario Inc. for the purpose agreed between GHD and 2374868 Ontario Inc. as set out in section 01 of this report.*

*GHD otherwise disclaims responsibility to any person other than 2374868 Ontario Inc. arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.*

*The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.*

*The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.*

*The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 01 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.*

### **Accessibility of documents**

*If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.*

# 2. Facility Design

## 2.1 Location and Land Use

The Property is legally described as Lot 8, Concession 3 in Wellington County, the Township of Puslinch and consists of a 40-hectare property. The northern two thirds of the Property is zoned as Extractive (EXI) and the southern one third is zoned as Agricultural (A). The liquid soil receiving and processing area of the Site covers a 2.2 hectares (ha) portion of the Extractive Industrial (EXI) zoned parcel as shown on Figure 2. Capital Paving Inc. is the Site licensee and has an agreement with the Applicant to complete Site rehabilitation. The MNRF approved Pit Rehabilitation Plan provides for soil importation and associated infrastructure for rehabilitation. The current zoning also allows some of the Site operations and an application for a minor zoning amendment to include the specific allowed uses was submitted to the Township of Puslinch in December 2020. A figure showing the zoning around the Property is provided in Appendix A. In March 2024, following discussion with MECP, MECP provided an email which indicates that they would

consider issuing the Waste ECA without the necessary zoning by-law amendment in place. A copy of the email is provided in Appendix A.

The adjacent property land use to the west is an operating aggregate extraction pit, to the north is agricultural land, to the east is forested conservation land, and to the south are residential and agricultural lands. The topography of the Site is shown on Figure 3.

## 2.2 Layout

A copy of a legal survey of the Property is provided in Appendix B and was used along with topographical and other information to prepare a Site layout (Figure 2). As shown on Figure 2, the Site operations include the following:

- Site access
- Office building
- Vehicle parking areas
- Soil and water management
- Security

The Property has some wooden fencing on the south, east and north sides.

An approximately 6.0 metre (m) wide fire access route and sufficient fire truck turnaround in the yard area has been designated at the Site and remains unobstructed. Parking for hydrovac trucks and employee vehicles are located around the building.

Empty trucks and vehicles related to the operations and employee vehicles can also be parked in the agricultural area of the Property for overflow management, and for safety considerations as needed.

## 2.3 Hydrogeological Assessment

The Property currently has two active potable water wells (see Figure 2). The first well is located at the Site and the second well is located on the Agricultural parcel. Up to 50,000 liters per day of groundwater is pumped from the Site well to use to fill hydrovac trucks before they leave the Site.

During pre-consultation for the Waste ECA, the MECP requested that an Hydrogeological Impact Assessment (HIA) be completed for MECP's review prior to the application being submitted. An HIA was prepared and submitted in December 2020. The MECP provided review and comments on the HIA in a letter dated January 25, 2021. The Applicant/GHD provided responses to the MECP comments in a letter dated April 21, 2021 (GHD, 2021a). Based on the acceptance of the response to comments, MECP indicated that the ECA application could then be submitted and the application was submitted in December 2021. Since the original application was submitted in 2021, the Applicant has continued to conduct routine soil, surface water, and groundwater monitoring and also completed additional groundwater investigations.

A revised HIA was prepared to update the December 2020 HIA with the results of the additional groundwater investigations (new monitoring wells), monitoring information and provide a more up-to-date evaluation of the Site hydrogeological setting and groundwater quality conditions. In March 2024, HIA (Revision No. 1) has also been submitted to MECP for their information and review and comment.

The 2024 HIA has the following conclusions:

*Based on the results of the hydrogeological assessment presented above, the following conclusions are provided:*

1. *The results of groundwater and surface water monitoring confirm that Site operations conducted for the past 10 years have had no significant impact on groundwater or surface water quality.*
2. *On the basis of past performance, there are no anticipated impacts to groundwater resources from Site operations, provided that environmental practices related to soil and slurry importation and handling meet or exceed those practices undertaken in the past.*

3. *The groundwater and surface water regimes can be adequately monitored to ensure a timely response to potential degradation in water quality.*
4. *An appropriate contingency measure to be considered in the event of an impact to groundwater resources from Site-related activities are the replacement of downgradient water supplies with wells completed in a deeper aquifer.*

## **2.4 Building**

The Office Building is a barn style open concept with a steel frame wood and metal structure with a concrete foundation and floor. The building is used as an office to support operations, miscellaneous materials and small equipment storage.

## **2.5 Operating Times**

The Site typically operates from 7 am to 6pm Monday to Friday with trucks leaving in the morning and returning in the afternoon to unload. Some trucks make multiple trips from/to the Site during the day. The Site also occasionally provides hydrovac services outside typical operating hours (e.g., after hours and weekends). The Site operates for 50 weeks of the year.

## **2.6 Truck Traffic**

Hydrovac trucks enter and exit the Site via the access road from the entrance at Wellington Road 34. There is a maximum of 25 hydrovac trucks operating from the Site. A Traffic Study was completed in 2020 which indicated that the hydrovac truck traffic would not cause significant impacts to existing traffic on Road 34. A copy of the Traffic Study is provided in Appendix C. It also is noted that without the hydrovac operation rehabilitation of the closed licensed pit would still require a similar amount of truck traffic to provide imported soil for rehabilitation activities. The Truck Traffic Study was submitted to the Township as part of the zoning bylaw application.

## **2.7 Service Area/Waste Accepted**

The hydrovac trucks work throughout southern Ontario where liquid soil is collected from utility, municipal and commercial sites to ensure that utility strikes and damage do not occur during intrusive work (e.g., utility and roadwork). No hydrovac is done at environmental or other sites with known soil impacts. Hydrovac truck loads that may be impacted (e.g., determined by Site information, visual inspection, and odours) are sent directly to a permitted MECP treatment or disposal facility and only return to the Site after all of the contents have been removed.

## **2.8 Security**

The Property has a single traffic entrance/exit and there is fencing on a portion of the southern Property boundaries. The Site uses a security camera system to provide continuous monitoring. The monitoring is live during operating hours and based on motion sensing after hours. Unauthorized access to the Facility is not expected to be a significant concern.

## **2.9 Storm Water Management**

Most of the Property surface cover is woodlots, vegetated areas, and grass. The open areas of the Site are gravel covered, grassed, or compacted soil. The water drainage from the soil stockpiles is collected in a vegetated drainage swale which runs east west and drains into an on-site pond.

There are no direct point source discharges of stormwater off site. The following items are noted regarding existing stormwater drainage:

- Sheet flow discharge along the vegetated drainage swale promotes settling of suspended solids, reduces erosion.
- Yard inspections and maintenance are conducted daily as needed to keep outside areas clean and minimize potential impacts to storm water.
- The accumulated sediment in the drainage swale to the pond is excavated on a weekly basis and processed with other liquid soils to minimize potential impacts to surface water quality.
- Weekly sampling of the pond water for over 5 ½ years has indicated no exceedances of applicable MECP Standards (Table 2).<sup>1</sup>

As part of the application for a zoning bylaw amendment, the Applicant has committed to provided a low permeability liner system beneath the liquid soil unloading/processing area, the temporary pond, the drainage swale and the final pond. The liner system was provided to minimize potential impacts to groundwater beneath the Site operations area. The water in the final pond will be held (and no further process water added) until testing results are received to confirm water quality meets Table 2 Standards, and then the water will be released for irrigation of the vegetation in the pit rehabilitation areas.

An application for an ECA (Industrial Sewage Works – Storm water), including a Stormwater Management Plan (SWMP), was submitted to MECP in February 2021 to govern Site stormwater management. MECP indicated that the Sewage Works ECA was not required as the SWMP provided with the D&O Report adequately addresses stormwater management [the correspondence with MECP and the SWMP (GHD, August 2022) are provided in Appendix D].

## 2.10 Air and Noise

The Site building has electric and propane heating and cooling as well as fans to provide employee comfort. Exhaust from trucks, earth moving equipment, and employee vehicles and a small trommel screen are the only air and noise emission sources. Extended vehicle idling, air brakes, and excessive engine noise are prohibited.

In 2023, an application for an ECA (Air and Noise), including an Acoustic Assessment Report and an Emission Summary and Dispersion Modelling report, was submitted to MECP to govern Site air and noise emissions. The Air and Noise assessment demonstrates that there are no significant emissions related to Site and operations are in compliance with municipal and MECP requirements.

## 2.11 Environmental Impact Study (EIS)

In 2020 and 2021, a comprehensive EIS was completed to assess natural heritage features (e.g., plant and wildlife habitats) at the Site and adjacent properties in accordance with accepted MEP and conservation agency regulations and practices. The EIS demonstrated that Site operations did not cause adverse effects to natural heritage features at the Site and recommended some measures be put in places (e.g., silt fencing in some areas) to maintain buffer areas. The EIS was submitted to the Township and some revisions were completed to address comments received from the Township's consultant.

---

<sup>1</sup> Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011, and updates as issued.

## 3. Soil Operations

### 3.1 Receiving

The Applicant receives a maximum of 250 tonnes of liquid soil per day which is typically comprised of 175 tonnes of water and 75 tonnes of soil. All liquid soil is unloaded for drying in the designated stockpile area. A maximum of 3 weeks of accumulated dry soil is stored at the Site at any one time (total 1,125 tonnes).

### 3.2 Processing

Soil is processed in the following steps and a process flow diagram is shown on Figure 4:

- Trucks arrive on site and offload in the designated soil management area.
- Material can dewater for a few days to a week until the material has dried sufficiently to excavate and place in stable stockpiles. Water gravity drains from stockpiled soil and is directed to the drainage swale.
- Stockpiles of dry soil (approximately 9 m in diameter, 3 m in height) are generated for sampling.
- A maximum of 563 CM storage capacity (1,125 tonnes based on 2 tonnes/CM)
- The Site uses a system of marked stockpile locations to allow for soil and data tracking and processing.
- Based on sampling results, dried soil is transported to rehabilitation areas or appropriate off-site disposal/receiving sites.

No more than 3 weeks of accumulated soil are stockpiled at the Site at any one time 25 trucks per day, 7.5 tonnes per truck (5.25 tonnes of water and 2.25 tonnes of soil each) for a typical weekly dry soil accumulation of 375 tonnes.

The dried soil is suitable for use as pit rehabilitation material under the MNRF approved Pit Rehabilitation Plan for the on site/adjacent pit. Some small quantities of aggregate or topsoil product also are generated from some hydrovac loads and are separated using a trommel screen for recycling or beneficial reuse, largely for pit rehabilitation activities.

Soil stockpiles are limited to heights which are not a visual nuisance to surrounding property owners or structurally unstable. Stockpiled soils remain in the same stockpile until soil sampling has been completed and analytical laboratory results are received. There are three types of soil stockpiles present at any one time:

1. Un sampled stockpiles.
2. Sampled stockpiles, analytical data not yet received.
3. Sampled stockpiles, analytical data received.

### 3.3 Characterization

Stockpile soil sampling has been conducted on a weekly basis since 2017 to characterize soil quality. In May 2020, weekly sampling was continued with an expanded parameter list. Soil samples are submitted to a MECP accredited analytical laboratory for the following analyses:

- O. Reg. 153/04 Metals and Inorganics
- Volatile organic compounds (VOCs)
- Petroleum Hydrocarbons (PHCs) F1 to F4
- Semi VOCs (SVOCs)
- Polychlorinated Biphenyls (PCBs)

The analytical data is first compared to MECP Table 1<sup>2</sup> Standards. The large majority (>85%) of soil meets Table 1 Standards and as such is used for rehabilitation of the on site/adjacent pit in accordance with the approved Pit Rehabilitation Plan and 2008 Aggregate Resources Act (ARA) policy 6.00.03 (Appendix E).

The soil analytical data for 2023 is provided in Table 1. It is noted that 2008 ARA Policy 6.00.03 states in part "... where the imported material is not being placed within 1.5 metres of the surface, the criteria under Table 1 for sodium adsorption ratio and electrical conductivity do not have to be met." Low level exceedances Table 1 Standards for EC and SAR occasionally occur, and these soils are used for pit rehabilitation in accordance with this policy.

The typical soil stockpile is about 100 CM or 200 tonnes. Soil stockpiles are sampled at a frequency as provided in O. Reg. 153/04 Table 2 Minimum Stockpile Sampling Frequency as well as consideration for Excess Soil Regulations O. Reg 406. The Rules for Soil Management and Excess Soil Standards (MECP, November 2019) also provide guidance on the number of samples to be collected per the size of the stockpile and appropriate laboratory analysis for soil characterization. The soil stockpile sampling frequency is as follows:

**Table 1** Stockpile Soil Sampling (from Table 2 – Schedule E of O. Reg. 153/04)

Item	Column 1 Stockpile Volume (m <sup>3</sup> )	Column 2 Minimum Number of Samples
1.	≤ 130	3
2.	> 130 to 220	4
3.	> 220 to 320	5

### 3.4 Risk Screening

Ontario Regulation 406/19 and the accompanying document entitled "Rules for Soil Management and Excess Soil Quality Standards (MECP, December 2022) allows for development of reuse site specific excess soil quality standards through the use of the BRAT spreadsheet. BRAT can be used to modify the default values used for the development of the excess soil standards using site specific information. In addition, BRAT can be used to justify the use of the small volume standards for volumes greater than 350 m3. Development of reuse site specific excess soil quality standards must be completed by a Qualified Person (Risk Assessment) as defined in Ontario Regulation 153/04.

Use of BRAT may be considered for soil that has one or more parameter concentrations above MECP Table 1 Standards and will be reused off Site or for areas of the Site where Table 1 Standards are not applicable.

### 3.5 Soil Tracking

Site soil management generally will conservatively and voluntarily follow the O. Reg. 406/19 (Excess Soil requirements. Accurate records of the quantity of material received from "receiving sites" and the material quality based on sampling results are documented using Tracking Record forms/database (Appendix F). Records include information regarding material source, hauling quantity, soil tracking, analyses, and final disposition.

All applications and related reports, bills of lading, logs of material accepted at the site, records of material approved for acceptance at the site, etc. will be retained at the Site. Soil which has parameters detected at concentrations above Table 1 Standards (i.e., not able to be used for pit rehabilitation) are removed from the Site and disposed of at a permitted off-site treatment/disposal facility. Soil that will be shipped to an off site MECP permitted treatment/disposal facility or offsite for reuse will have applicable O. Reg. 347 documentation completed and/or comply with all requirements of O. Reg. 406/19.

<sup>2</sup> Full Depth Background Site Condition Standards for Residential/ Parkland/ Institutional/ Industrial/ Commercial/ Community Property Use for Coarse Textured Soils, as provided in the Table 1 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011 and updates as issued.

All tracking records, transport company documentation, documentation sign off from the reuse site, daily records and soil analytical data will be retained for a minimum of 7 years.

## 4. Other Operations

### 4.1 Inspection and Maintenance

The Site features and operations are routinely inspected monthly to ensure that these are maintained in good working order and secure. Any deficiencies detected during these regular inspections will be promptly corrected. A written record of the inspections will be maintained at the Site, including (as a minimum) the following (Appendix G):

- The name, title, and signature of trained personnel conducting the inspection.
- The date and time of the inspection
- A list of all equipment and Site features inspected and deficiencies observed.
- Recommendations for remedial action to be undertaken.

Daily visual observations will be conducted of the following areas to ensure the Site is secure and that there are not off-site impacts such as dust, litter, noise, vermin, vectors, odour, and traffic:

- Access road
- Loading/unloading area(s)
- Storage area(s)
- Security features

Regular inspections of the surface water management areas also are required to ensure proper operation and identify any maintenance issues as provided for in the Stormwater Management Plan, including but not limited to the following:

- Grading to allow proper drainage.
- Removal of accumulated sediment in the swale and pond
- Maintain stable swale and pond slopes, banks, and vegetation.

### 4.2 Staff Training

Drivers are trained in evaluating sites prior to hydrovacating and checking loads for unacceptable wastes during hydrovacating operations.

Operators and staff are trained with respect to the following as appropriate for their job function:

- The D&O Report and ECA requirements.
- Site operation and management.
- Shipping, BOL and manifesting procedures.
- The Site plan and location of relevant equipment, including that for emergencies and spills.
- An outline of the responsibilities of Site personnel including roles and responsibilities during emergencies and spills.
- Spill Prevention, Control, and Environmental Emergency and Contingency (E2C) Plan (See Section 4.3).
- Any environmental and occupational health and safety concerns pertaining to the waste to be processed.
- Procedures for the control of nuisance conditions.
- Emergency first aid information.

- Relevant waste management legislation and regulations, including the Environmental Protection Act (EPA), Ontario Regulation 347 and 406.
- Information recording procedures.
- Site Inspection procedures.
- Procedures for recording and responding to public complaints.

A written record will be maintained at the Site, which will include (as a minimum) the following (Appendix H):

- The date of training
- The name and signature of the person who has been trained.
- A description of the training provided.

Senior staff members supervising operations will have all the above noted training as well as any other training required by the Applicant or the Province of Ontario.

### **4.3 Environmental Emergency and Contingency Plan**

The Environmental Emergency and Contingency Plan (E2C) outlines the prevention of, preparedness for, response to, and recovery from an environmental emergency. The E2C Plan is described in Appendix I and includes the following elements:

- Emergency Contact Numbers
- Spills
- Fire
- Severe Storms
- Medical Emergencies
- Closure of Waste Disposal Sites

A copy of the E2C was provided to the local municipality and the local fire department.

### **4.4 Complaint Procedure**

The Applicant will maintain a record at the Site containing detailed complaint and follow up information listed in the template form provided in Appendix J.

The records will be retained for five years at the Site.

### **4.5 Annual Report**

By the end of February of each year, an annual report will be prepared and submitted to the District Manager covering the previous calendar year. The report will include, as a minimum, the following information:

- A detailed monthly summary of the type and quantity of all waste transfer to and from the Site.
- A detailed monthly summary of the type and quantity of all materials transported from the Site.
- Any environmental and operational problems that could negatively impact the environment, encountered during the operation of the Site and during the Facility inspections, and any mitigated actions taken.
- A statement as to compliance with ECA Conditions.
- Any recommendations to minimize environmental impacts from the operation of the Site and to improve Site operations and monitoring programs in this regard.

## 4.6 Disruption of Shipment or Facility Operation

If the Facility cannot operate, collection vehicles will be diverted to other nearby transfer stations. Similarly, if the processing facilities used as disposal sites cannot receive transfer trailers, the trailers will be diverted to other approved disposal sites.

If end markets materials recovered at the Facility (e.g., topsoil, gravel, sand), these materials will be stored onsite. Once the storage capacity is met, alternative receivers will be obtained, or alternative transfer locations will be sought, and the Facility will cease to receive materials.

At no time will the approved storage limits be exceeded, and every effort will be made to clear the offloading/stockpile area in a timely fashion.

## 4.7 Closure Plan

Should the Site no longer be used as a waste processing facility, the Site will be decommissioned prior to a change in use. The decommissioning procedure is as follows:

- All soil will be spread/backfilled on the Property or shipped to other properties for beneficial reuse or disposal as determined by the soil analytical data.
- Any waste will be removed by a MECP permitted waste hauler to a permitted disposal facility.
- All equipment will be removed from the Site.
- Exterior areas of the Site will be cleaned of any litter.

All documentation pertaining to material types and quantities will be completed and organized, as necessary.

The required Financial Assurance to support closure activities will be provided under separate cover.

**Summary of 2023 Analytical Data  
6678 Wellington Road 34, Township of Puslinch, Ontario**

Number of Soil Samples		Number of Soil Exceedances over Table 1 (RPIICC) <sup>(1)</sup>	
2023 Data	All Data (2017-2023)	2023 Data	All Data (2017-2023)
143	392	5	35

Number of Pond Samples		Number of Exceedances over Table 2 <sup>(2)</sup> (2023 Data)	Number of Exceedances over Table 2 <sup>(2)</sup> (All Data)
2023 Data	All Data (2017-2023)	2023 Data	All Data (2017-2023)
46	239	0	0

Media (2017-2023) Standard	Soil <sup>(1)</sup> Table 1 (RPIICC)	Pond Water <sup>(2)</sup> Table 2
Number of Samples	392	239
Number of Exceedances	35	0

**Notes:**

(1) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011. **Table 1:** Full Depth Background Site Condition Standards for Residential/ Parkland/ Institutional/ Industrial/ Commercial/ Community Property Use for Coarse Textured Soils

(2) Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all property uses **Table 2** of the Soil, Groundwater and Sediment Standards for Use Under Par XV.1 of the Environmental Protection Act, April 15, 2011

(3) Conductivity and SAR not considered exceedances

(4) Most of the acetone concentrations detected in soil samples from Sept. 21 to Nov. 3, 2023 were greater than Table 1 Standards, however data were rejected. Not considered exceedances due to the known on-site contamination (cleaning materials) during sampling - Qualified as R: Rejected

(5) June 15, 2023 methylene chloride concentrations in 2 soil samples with concentrations greater than Table 1 Standard - Not considered exceedances due to confirmed laboratory contamination. Qualified as R: Rejected

(6) All material over Table 1 (RPIICC) removed from Property







Summary of 2023 Soil Analytical Data  
6678 Wellington Road 34, Township of Puslinch, Ontario

No. of Samples:	143	Sample ID:	S-11210029-09-03-	S-11210029-09-03-	S-11210029-23-EN-	S-11210029-23-EN-	S-11210029-23-EN-	S-11210029-23-EN-	S-11210029-23-EN-	S-11210029-23-EN-	S-11210029-22-EN-	S-11210029-22-EN-	S-11210029-22-EN-	S-11210029-23-EN-							
No. of Exceedances:	5	Report No.:	23-EN-363	23-EN-364	366	367	368	370	371	372	374	375	376	378	379	380	382	383	384	042023-EN-386	
		Sample Date:	WT2305901-003	WT2305901-004	WT2306675-001	WT2306675-002	WT2306675-003	WT2307323-001	WT2307323-002	WT2307323-003	WT2308098-001	WT2308098-002	WT2308098-003	WT2308654-001	WT2308654-002	WT2308654-003	WT2309450-001	WT2309450-002	WT2309450-003	WT2310238-001	
			9-Mar-23	9-Mar-23	16-Mar-23	16-Mar-23	16-Mar-23	23-Mar-23	23-Mar-23	23-Mar-23	30-Mar-23	30-Mar-23	30-Mar-23	06-Apr-2023	06-Apr-2023	06-Apr-2023	13-Apr-2023	13-Apr-2023	13-Apr-2023	20-Apr-23	
<b>RPIICC</b>																					
<b>Note: Conductivity and SAR not included as exceedances in count</b>			<b>Table 1 Standards <sup>1</sup></b>																		
		<b>Units</b>																			
MTBE	0.05	µg/g	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Styrene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	0.2	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	0.05	µg/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	0.25	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl Chloride	0.02	µg/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroethane	--	µg/g																			
Chloromethane	--	µg/g																			
<b>Petroleum Hydrocarbons</b>																					
PHC - F1 (C <sub>9</sub> -C <sub>10</sub> Hydrocarbons)	25	µg/g	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
PHC - F2 (>C <sub>10</sub> -C <sub>18</sub> Hydrocarbons)	10	µg/g	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
PHC - F3 (>C <sub>10</sub> -C <sub>34</sub> Hydrocarbons)	240	µg/g	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
PHC - F4 (>C <sub>34</sub> -C <sub>60</sub> Hydrocarbons)	120	µg/g	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric heavy hydrocarbons F4G-SG (GHH-Silica)	120	µg/g																			
<b>Semi-Volatile Organics</b>																					
Acenaphthene	0.072	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	0.093	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.16	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.36	µg/g	<0.050	0.107	<0.050	<0.050	<0.050	<0.050	0.06	0.061	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	0.3	µg/g	<0.050	0.094	<0.050	<0.050	<0.050	0.05	0.073	0.074	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	0.47	µg/g	<0.050	0.146	<0.050	<0.050	<0.050	0.078	0.107	0.117	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(ghi)perylene	0.68	µg/g	<0.050	0.072	<0.050	<0.050	<0.050	0.054	0.053	0.053	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	0.48	µg/g	<0.050	0.069	<0.050	<0.050	<0.050	<0.050	0.051	0.051	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	2.8	µg/g	<0.050	0.127	<0.050	<0.050	<0.050	0.053	0.073	0.077	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenzo(a,h)anthracene	0.1	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	0.56	µg/g	0.064	0.234	<0.050	<0.050	<0.050	0.102	0.15	0.163	<0.050	<0.050	<0.050	0.053	0.07	0.056	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	0.12	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.23	µg/g	<0.050	0.081	<0.050	<0.050	<0.050	0.054	0.06	0.067	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1+2-Methylnaphthalenes	0.59	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Naphthalene	0.09	µg/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Phenanthrene	0.69	µg/g	<0.050	0.126	<0.050	<0.050	<0.050	0.072	0.072	0.087	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Pyrene	1.0	µg/g	<0.050	0.186	<0.050	<0.050	<0.050	0.082	0.121	0.127	<0.050	<0.050	<0.050	<0.050	0.059	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Diethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dimethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-ethylhexyl)phthalate	5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Biphenyl	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4-Chloroaniline	0.5	µg/g	<0.10	<0.10	<0.20	<0.20	<0.2														



Summary of 2023 Soil Analytical Data  
6678 Wellington Road 34, Township of Puslinch, Ontario

No. of Samples:	143	Sample ID:	S-11210029-042023-EN-387	S-11210029-042023-EN-388	S-11210029-042723-EN-390	S-11210029-042723-EN-391	S-11210029-042723-EN-392	S-11210029-23-EN-394	S-11210029-23-EN-395	S-11210029-23-EN-396	S-11210029-110523-EN-398	S-11210029-110523-EN-399	S-11210029-110523-EN-400	S-11210029-051823-EN-402	S-11210029-051823-EN-403	S-11210029-051823-EN-404	S-11210029-23-EN-406	S-11210029-23-EN-407	S-11210029-23-EN-408	S-11210029-23-EN-394 RETEST	
No. of Exceedances:	5	Report No.:	WT2310238-002	WT2310238-003	WT2311126-001	WT2311126-002	WT2311126-003	WT2311958-001	WT2311958-002	WT2311958-003	WT2312790-001	WT2312790-002	WT2312790-003	WT2313789-001	WT2313789-002	WT2313789-003	WT2314597-001	WT2314597-002	WT2314597-003	WT2315469-001	
Sample Date:			20-Apr-23	20-Apr-23	27-Apr-2023	27-Apr-2023	27-Apr-2023	04-May-2023	04-May-2023	04-May-2023	11-May-2023	11-May-2023	11-May-2023	18-May-23	18-May-23	18-May-23	25-May-23	25-May-23	25-May-23	01-Jun-2023	
<b>RPIICC</b>			<b>see retest on June 8</b>																		
<b>Note: Conductivity and SAR not included as exceedances in count</b>			<b>Table 1 Standards <sup>1</sup></b>																		
		<b>Units</b>																			
MTBE	0.05	µg/g	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Styrene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	0.2	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	0.05	µg/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	0.25	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl Chloride	0.02	µg/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroethane	--	µg/g																			
Chloromethane	--	µg/g																			
<b>Petroleum Hydrocarbons</b>																					
PHC - F1 (C <sub>9</sub> -C <sub>10</sub> Hydrocarbons)	25	µg/g	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
PHC - F2 (>C <sub>10</sub> -C <sub>18</sub> Hydrocarbons)	10	µg/g	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
PHC - F3 (>C <sub>10</sub> -C <sub>34</sub> Hydrocarbons)	240	µg/g	<50	<50	<50	<50	<50	61	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	59
PHC - F4 (>C <sub>34</sub> -C <sub>40</sub> Hydrocarbons)	120	µg/g	<50	<50	<50	<50	<50	134	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	125
Gravimetric heavy hydrocarbons F4G-SG (GHH-Silica)	120	µg/g						580													550
<b>Semi-Volatile Organics</b>																					
Acenaphthene	0.072	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	0.093	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.16	µg/g	<0.050	<0.050	0.096	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.36	µg/g	<0.050	<0.050	0.227	0.16	0.109	0.056	0.054	0.058	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.085	<0.050	0.088	0.051	0.051
Benzo(a)pyrene	0.3	µg/g	<0.050	<0.050	0.214	0.215	0.116	0.062	0.063	0.057	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.102	0.056	0.098	0.060	0.060
Benzo(b)fluoranthene	0.47	µg/g	<0.050	<0.050	0.304	0.296	0.162	0.094	0.09	0.092	<0.050	<0.050	<0.050	<0.050	<0.050	0.068	<0.050	0.123	0.069	0.117	0.088
Benzo(ghi)perylene	0.68	µg/g	<0.050	<0.050	0.124	0.148	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.065	<0.050	0.06	<0.050	<0.050
Benzo(k)fluoranthene	0.48	µg/g	<0.050	<0.050	0.12	0.137	0.071	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.055	<0.050	0.054	<0.050	<0.050
Chrysene	2.8	µg/g	<0.050	<0.050	0.281	0.266	0.14	0.076	0.065	0.074	<0.050	<0.050	<0.050	<0.050	<0.050	0.051	<0.050	0.096	0.055	0.095	0.057
Dibenzo(a,h)anthracene	0.1	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	0.56	µg/g	<0.050	<0.050	0.537	0.528	0.26	0.115	0.124	0.136	<0.050	<0.050	<0.050	<0.050	<0.050	0.114	<0.050	0.152	0.104	0.194	0.129
Fluorene	0.12	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.23	µg/g	<0.050	<0.050	0.153	0.179	0.099	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.071	<0.050	0.06	0.056
1+2-Methylnaphthalenes	0.59	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Naphthalene	0.09	µg/g	<0.010	<0.010	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.015	<0.010	<0.010	<0.010	<0.010	<0.010
Phenanthrene	0.69	µg/g	<0.050	<0.050	0.358	0.263	0.145	<0.050	0.056	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.099	<0.050	0.062	<0.050	0.098	0.065
Pyrene	1.0	µg/g	<0.050	<0.050	0.395	0.397	0.201	0.099	0.1	0.112	<0.050	<0.050	<0.050	<0.050	<0.050	0.083	<0.050	0.125	0.084	0.157	0.121
Diethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dimethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-ethylhexyl)phthalate	5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Biphenyl	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4-Chloroaniline	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
3,3'-Dichlorobenzidine	1	µg/g	<0.10	<																	



Summary of 2023 Soil Analytical Data  
6678 Wellington Road 34, Township of Puslinch, Ontario

No. of Samples:	143	Sample ID:	S-11210029-23-EN-410	S-11210029-23-EN-411	S-11210029-23-EN-412	S-11210029-23-EN-402 RETEST	S-11210029-23-EN-403 RETEST	S-11210029-23-EN-414	S-11210029-23-EN-415	S-11210029-23-EN-416	S-11210029-22-EN-418	S-11210029-22-EN-419	S-11210029-22-EN-420	S-11210029-23-EN-422	S-11210029-23-EN-423	S-11210029-23-EN-424	S-11210029-23-EN-426	S-11210029-23-EN-427	S-11210029-23-EN-428	S-11210029-23-EN-430	
No. of Exceedances:	5	Report No.:	WT2315469-002	WT2315469-003	WT2315469-004	WT2316402-001	WT2316402-002	WT2316402-003	WT2316402-004	WT2316402-005	WT2317519-001	WT2317519-002	WT2317519-003	WT2319594-001	WT2319594-002	WT2319594-003	WT2319595-001	WT2319595-002	WT2319595-003	WT2320392-001	
Sample Date:			01-Jun-2023	01-Jun-2023	01-Jun-2023	08-Jun-2023	08-Jun-2023	08-Jun-2023	08-Jun-2023	08-Jun-2023	15-Jun-23	15-Jun-23	15-Jun-23	22-Jun-2023	22-Jun-2023	22-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	6-Jul-23	
<b>RPIICC</b>																					
<b>Note: Conductivity and SAR not included as exceedances in count</b>																					
<b>Table 1 Standards<sup>1</sup></b>																					
		<b>Units</b>																			
MTBE	0.05	µg/g	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Styrene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	0.2	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	0.05	µg/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	0.25	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl Chloride	0.02	µg/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroethane	--	µg/g																			
Chloromethane	--	µg/g																			
<b>Petroleum Hydrocarbons</b>																					
PHC - F1 (C <sub>9</sub> -C <sub>10</sub> Hydrocarbons)	25	µg/g	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
PHC - F2 (>C <sub>10</sub> -C <sub>18</sub> Hydrocarbons)	10	µg/g	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
PHC - F3 (>C <sub>10</sub> -C <sub>34</sub> Hydrocarbons)	240	µg/g	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
PHC - F4 (>C <sub>34</sub> -C <sub>40</sub> Hydrocarbons)	120	µg/g	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric heavy hydrocarbons F4G-SG (GHH-Silica)	120	µg/g																			
<b>Semi-Volatile Organics</b>																					
Acenaphthene	0.072	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	0.093	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.16	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.36	µg/g	<0.050	<0.050	<0.050	0.068	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	0.3	µg/g	<0.050	<0.050	<0.050	0.077	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	0.47	µg/g	<0.050	<0.050	0.077	0.106	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(ghi)perylene	0.68	µg/g	<0.050	<0.050	<0.050	0.053	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	0.48	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	2.8	µg/g	<0.050	<0.050	<0.050	0.078	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenzo(a,h)anthracene	0.1	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	0.56	µg/g	<0.050	<0.050	0.097	0.17	0.102	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	0.12	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.23	µg/g	<0.050	<0.050	<0.050	0.056	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1+2-Methylnaphthalenes	0.59	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Naphthalene	0.09	µg/g	<0.010	<0.010	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Phenanthrene	0.69	µg/g	<0.050	<0.050	0.053	0.117	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Pyrene	1.0	µg/g	<0.050	<0.050	0.08	0.129	0.083	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Diethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dimethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-ethylhexyl)phthalate	5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Biphenyl	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4-Chloroaniline	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
3,3'-Dichlorobenzidine	1	µg/g	<0.10	<0.10	<0.10	<0.10	&														





















**Summary of 2023 Pond Water Analytical Data**  
**6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-22-EN-339 WT2300943-001 12-Jan-23	W-341 WT2301583-001 19-Jan-23	343 WT2302151-001 26-Jan-23	W-11210029-___23-EN-346 WT2302756-001 02-Feb-2023	W-11210029-23-EN-348 WT2303313-001 9-Feb-23	W-11210029-23-EN-352 WT2304101-001 16-Feb-23	W-11210029-022323-EN-356 WT2304633-001 23-Feb-23	W-11210029-23-EN-360 WT2305237-001 2-Mar-23	W-11210029-23-EN-365 WT2305906-001 9-Mar-23	W-11210029-23-EN-369 WT2306666-001 16-Mar-23
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**2011 MECP  
Table 2**

		<b>Units</b>									
<b><u>Hydrocarbons (Water)</u></b>											
F1 (C6-C10)	750	µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370	<370	<370	<370	<370	<370	<370
<b><u>Semi-Volatile Organics (Water)</u></b>											
Diethylphthalate	38	µg/L	<0.30	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bis(2-ethylhexyl)phthalate (DEHP)	10	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Biphenyl	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.80	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60
2-Chlorophenol	8.9	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Pentachlorophenol	30	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Phenol	890	µg/L	<0.50	<0.50	<0.50	<0.75	<0.50	<0.50	<0.50	<0.50	<0.50
<b><u>Polychlorinated Biphenyls (Water)</u></b>											
Aroclor 1242		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total PCBs	3	µg/L	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
<b><u>Aggregate Organics (Water)</u></b>											
Biological Oxygen Demand (BOD)		µg/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000
<b><u>Physical Tests (Water)</u></b>											
pH		pH units	8.03	7.99	8.46	8.07	8.30	8.26	8.23	8.09	8.30
Total Suspended Solids		µg/L	<3000	<3000	<3000	<3000	<3000	<3000	<15000	<3000	<3000

**Summary of 2023 Pond Water Analytical Data  
6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-22-EN-339 WT2300943-001 12-Jan-23	W-341 WT2301583-001 19-Jan-23	343 WT2302151-001 26-Jan-23	W-11210029-____23-EN-346 WT2302756-001 02-Feb-2023	W-11210029-23-EN-348 WT2303313-001 9-Feb-23	W-11210029-23-EN-352 WT2304101-001 16-Feb-23	W-11210029-022323-EN-356 WT2304633-001 23-Feb-23	W-11210029-23-EN-360 WT2305237-001 2-Mar-23	W-11210029-23-EN-365 WT2305906-001 9-Mar-23	W-11210029-23-EN-369 WT2306666-001 16-Mar-23
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**2011 MECP  
Table 2**

	Units										
<b><u>Anions and Nutrients (Water)</u></b>											
Phosphorus, Total	µg/L	3.6	3.0	2.7	3.5	2.7	4.2	3.3	5.3	<2.0	4.4
<b><u>Organic / Inorganic Carbon (Water)</u></b>											
Total Organic Carbon	µg/L	750	720	520	550	1340	800	660	930	630	<500
<b><u>Polycyclic Aromatic Hydrocarbons (Water)</u></b>											
Acenaphthene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acenaphthylene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	2.4 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)anthracene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	0.01 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(b)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(g,h,i)perylene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenzo(ah)anthracene	0.2 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	0.41 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene	120 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-cd)pyrene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1+2-Methylnaphthalenes	3.2 µg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Naphthalene	11 µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1 µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

**Notes**  
 MECP Ministry of the Environment, Conservation and Parks  
 Full Depth Generic Site Condition Standards in a  
 Potable Ground Water Condition for all property uses  
<sup>1</sup> Table 2 of the Soil, Groundwater and Sediment  
 Standards for Use Under Par XV.1 of the  
 Environmental Protection Act, April 15, 2011  
 µg/L micrograms per litre





**Summary of 2023 Pond Water Analytical Data**  
**6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-23-EN-373 WT2307394-001 23-Mar-23	W-11210029-23-EN-377 WT2308099-001 30-Mar-23	W-11210029-23-EN-381 WT2308658-001 06-Apr-2023	W-11210029-23-EN-385 WT2309469-001 13-Apr-23	W-11210029-042023-EN-389 WT2310240-001 20-Apr-23	W-11210029-042723-EN-393 WT2311122-001 27-Apr-23	W-11210029-050423-EN-397 WT2311957-001 4-May-23	W-11210029-110523-EN-401 WT2312792-001 11-May-23	W-11210029-051823-EN-405 WT2313798-001 18-May-23	W-11210029-23-EN-409 WT2314561-001 25-May-23
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**2011 MECP  
Table 2**

		Units										
<b>Hydrocarbons (Water)</b>												
F1 (C6-C10)	750	µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370
<b>Semi-Volatile Organics (Water)</b>												
Diethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bis(2-ethylhexyl)phthalate (DEHP)	10	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Biphenyl	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60
2-Chlorophenol	8.9	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Pentachlorophenol	30	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Phenol	890	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
<b>Polychlorinated Biphenyls (Water)</b>												
Aroclor 1242		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total PCBs	3	µg/L	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
<b>Aggregate Organics (Water)</b>												
Biological Oxygen Demand (BOD)		µg/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000
<b>Physical Tests (Water)</b>												
pH		pH units	8.01	7.83	8.18	8.34	8.37	8.07	8.18	8.33	8.21	7.91
Total Suspended Solids		µg/L	<3000	<3000	<3000	<3000	<3000	3800	<3000	<3000	<3000	<3000

**Summary of 2023 Pond Water Analytical Data  
6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-23-EN-373 WT2307394-001 23-Mar-23	W-11210029-23-EN-377 WT2308099-001 30-Mar-23	W-11210029-23-EN-381 WT2308658-001 06-Apr-2023	W-11210029-23-EN-385 WT2309469-001 13-Apr-23	W-11210029-042023-EN-389 WT2310240-001 20-Apr-23	W-11210029-042723-EN-393 WT2311122-001 27-Apr-23	W-11210029-050423-EN-397 WT2311957-001 4-May-23	W-11210029-110523-EN-401 WT2312792-001 11-May-23	W-11210029-051823-EN-405 WT2313798-001 18-May-23	W-11210029-23-EN-409 WT2314561-001 25-May-23
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**2011 MECP  
Table 2**

	Units										
<b><u>Anions and Nutrients (Water)</u></b>											
Phosphorus, Total	µg/L	3.8	2.4	4.3	5.2	<2.0	16.0	5.2	3.5	2.9	2.2
<b><u>Organic / Inorganic Carbon (Water)</u></b>											
Total Organic Carbon	µg/L	700	<500	720	790	710	540	1000	720	860	830
<b><u>Polycyclic Aromatic Hydrocarbons (Water)</u></b>											
Acenaphthene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acenaphthylene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	2.4 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)anthracene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	0.01 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(b)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(g,h,i)perylene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenzo(ah)anthracene	0.2 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	0.41 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene	120 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-cd)pyrene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1+2-Methylnaphthalenes	3.2 µg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Naphthalene	11 µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1 µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

**Notes**

MECP Ministry of the Environment, Conservation and Parks  
Full Depth Generic Site Condition Standards in a  
Potable Ground Water Condition for all property uses  
1 Table 2 of the Soil, Groundwater and Sediment  
Standards for Use Under Par XV.1 of the  
Environmental Protection Act, April 15, 2011  
µg/L micrograms per litre







**Summary of 2023 Pond Water Analytical Data**  
**6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: W-11210029-060123-EN-413	W-11210029-23-EN-417	W-11210029-061523-EN-421	W-11210029-300623-EN-425	W-11210029-23-EN-429	W-11210029-23-EN-433	W-11210029-23-EN-437	W-11210029-23-EN-441	W-11210029-072723-EN-445	W-11210029-080323-EN-449
	Report No. WT2315460-001	WT2316386-001	WT2317478-001	WT2319569-001	WT2319571-001	WT2320316-001	WT2321374-001	WT2322406-001	WT2324238-001	WT2324236-001
	Sample Date: 01-Jun-2023	8-Jun-23	15-Jun-23	22-Jun-23	29-Jun-2023	6-Jul-23	13-Jul-23	20-Jul-23	27-Jul-23	3-Aug-23

**2011 MECP  
Table 2**

	Units										
<b>Anions and Nutrients (Water)</b>											
Phosphorus, Total	µg/L	<2.0	<2.0	8	<2.0	2.5	<2.0	4.5	2.8	7.9	68.9
<b>Organic / Inorganic Carbon (Water)</b>											
Total Organic Carbon	µg/L	860	820	1570	600	14000	1060	750	1010	1170	1410
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>											
Acenaphthene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acenaphthylene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	2.4 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)anthracene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	0.01 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(b)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(g,h,i)perylene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenzo(ah)anthracene	0.2 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	0.41 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene	120 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-cd)pyrene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1+2-Methylnaphthalenes	3.2 µg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Naphthalene	11 µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1 µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

**Notes**

MECP Ministry of the Environment, Conservation and Parks  
 Full Depth Generic Site Condition Standards in a  
 Potable Ground Water Condition for all property uses  
<sup>1</sup> Table 2 of the Soil, Groundwater and Sediment  
 Standards for Use Under Par XV.1 of the  
 Environmental Protection Act, April 15, 2011  
 µg/L micrograms per litre

**Summary of 2023 Pond Water Analytical Data**  
**6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-23-EN-453 WT2324948-001 10-Aug-23	W-11210029-23-EN-457 WT2325932-001 17-Aug-23	W-11210029-23-EN-464 WT2327988-001 31-Aug-23	W-11210029-23-EN-468 WT2328728-001 08-Sep-2023	W-11210029-23-EN-475 WT2330618-001 21-Sep-23	W-11210029-21-EN-479 WT2331474-001 28-Sep-23	W-11210029-23-EN-483 WT2332428-001 05-Oct-2023	W-11210029-23-EN-490 WT2334178-001 20-Oct-23	W-11210029-23-493 WT2335054-001 27-Oct-2023	W-11210029-23-EN-497 WT2335983-001 03-Nov-2023
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**2011 MECP  
Table 2**

		Units										
<b>Metals</b>												
Aluminum	--	µg/L	<3.0	<3.0	<3.0	<3.0	4.1	<3.0	<3.0	<3.0	<3.0	<3.0
Antimony	6	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	25	µg/L	2.00	1.98	2.51	2.19	2.14	1.49	4.25	1.98	2.02	1.79
Barium	1000	µg/L	58.7	60.4	53.6	56.2	52.1	56.7	55.4	54.1	55.2	53.7
Beryllium (4)	4	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bismuth	--	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron (total)	5000	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Cadmium (5)	2.7	µg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Calcium	--	µg/L	73100	76600	74100	78400	72600	74700	75800	70900	73200	75800
Cesium	--	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	50	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium, Hexavalent	25	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	3.8	µg/L	0.1	0.14	0.11	0.21	0.11	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	87	µg/L	<0.5	3.98	0.77	0.7	0.89	0.53	3.92	<0.5	1.95	0.69
Iron	--	µg/L	206	147	298	235	236	102	752	317	290	282
Lead (6)	10	µg/L	0.068	0.094	<0.05	0.051	0.082	<0.05	0.27	0.055	0.069	<0.05
Lithium	--	µg/L	3.6	4.1	3.2	3.9	3.8	3.7	3.5	3.8	3.8	3.5
Magnesium	--	µg/L	36900	38300	35700	36200	37500	40500	36700	36000	35100	36700
Manganese	--	µg/L	12.8	12.3	13.0	13	14.4	13.7	15	15.6	14.9	15.7
Mercury	0.29	µg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	70	µg/L	0.482	0.51	0.499	0.51	0.437	0.476	0.477	0.468	0.507	0.444
Nickel	100	µg/L	<0.5	1.3	1.13	0.66	0.77	<0.5	0.56	<0.5	1.5	<0.5
Phosphorus	--	µg/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Potassium	--	µg/L	988	1100	995	1040	1120	995	1070	993	1020	953
Rubidium	--	µg/L	<0.2	0.21	0.20	0.22	0.2	<0.2	0.21	0.20	<0.2	<0.2
Selenium	10	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silicon	--	µg/L	10100	9360	9870	8820	9360	9880	9400	8840	8720	8930
Silver	1.5	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	490000	µg/L	7320	7800	7480	7410	7440	8110	7430	7210	6930	7220
Strontium	--	µg/L	151	160	154	156	144	163	150	145	150	147
Sulfur	--	µg/L	17700	18900	16500	17900	16500	16800	16800	16200	15600	15800
Tellurium	--	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	2.0	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium	--	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	--	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium	--	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Tungsten	--	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	20.0	µg/L	0.221	0.23	0.221	0.232	0.178	0.182	0.196	0.213	0.200	0.203
Vanadium	6.2	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Zinc	1100	µg/L	4.6	12.7	6.7	6.4	7.7	9.4	11.7	9.0	8.3	8.1
Zirconium	--	µg/L	<0.2	0.23	<0.2	<0.2	0.46	<0.2	<0.2	<0.2	<0.2	<0.2





**Summary of 2023 Pond Water Analytical Data  
6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-23-EN-453 WT2324948-001 10-Aug-23	W-11210029-23-EN-457 WT2325932-001 17-Aug-23	W-11210029-23-EN-464 WT2327988-001 31-Aug-23	W-11210029-23-EN-468 WT2328728-001 08-Sep-2023	W-11210029-23-EN-475 WT2330618-001 21-Sep-23	W-11210029-21-EN-479 WT2331474-001 28-Sep-23	W-11210029-23-EN-483 WT2332428-001 05-Oct-2023	W-11210029-23-EN-490 WT2334178-001 20-Oct-23	W-11210029-23-493 WT2335054-001 27-Oct-2023	W-11210029-23-EN-497 WT2335983-001 03-Nov-2023
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2011 MECP  
Table 2

	Units										
<b><u>Anions and Nutrients (Water)</u></b>											
Phosphorus, Total	µg/L	4.1	3.0	4.3	4.6	3.4	<2.0	9.2	2.8	<2.0	2.8
<b><u>Organic / Inorganic Carbon (Water)</u></b>											
Total Organic Carbon	µg/L	1270	1350	1270	910	1250	560	1120	1210	1600	920
<b><u>Polycyclic Aromatic Hydrocarbons (Water)</u></b>											
Acenaphthene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acenaphthylene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	2.4 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)anthracene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	0.01 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(b)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(g,h,i)perylene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenzo(ah)anthracene	0.2 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	0.41 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene	120 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-cd)pyrene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1+2-Methylnaphthalenes	3.2 µg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Naphthalene	11 µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1 µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

**Notes**  
 MECP Ministry of the Environment, Conservation and Parks  
 Full Depth Generic Site Condition Standards in a  
 Potable Ground Water Condition for all property uses  
<sup>1</sup> Table 2 of the Soil, Groundwater and Sediment  
 Standards for Use Under Par XV.1 of the  
 Environmental Protection Act, April 15, 2011  
 µg/L micrograms per litre







**Summary of 2023 Pond Water Analytical Data**  
**6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-22-EN-501 WT2336905-001 10-Nov-23	W-11210029-23-EN-505 WT2337675-001 17-Nov-23	W-11210029-23-EN-509 WT2338577-001 24-Nov-23	W-11210029-23-EN-513 WT2339307-001 01-Dec-2023	W-11210029-23-EN-517 WT2340098-001 08-Dec-2023	W-11210029-23-EN-S21 WT2340881-001 15-Dec-2023
--------------------	--	--	--	--	--	--	--

**2011 MECP  
Table 2**

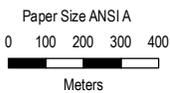
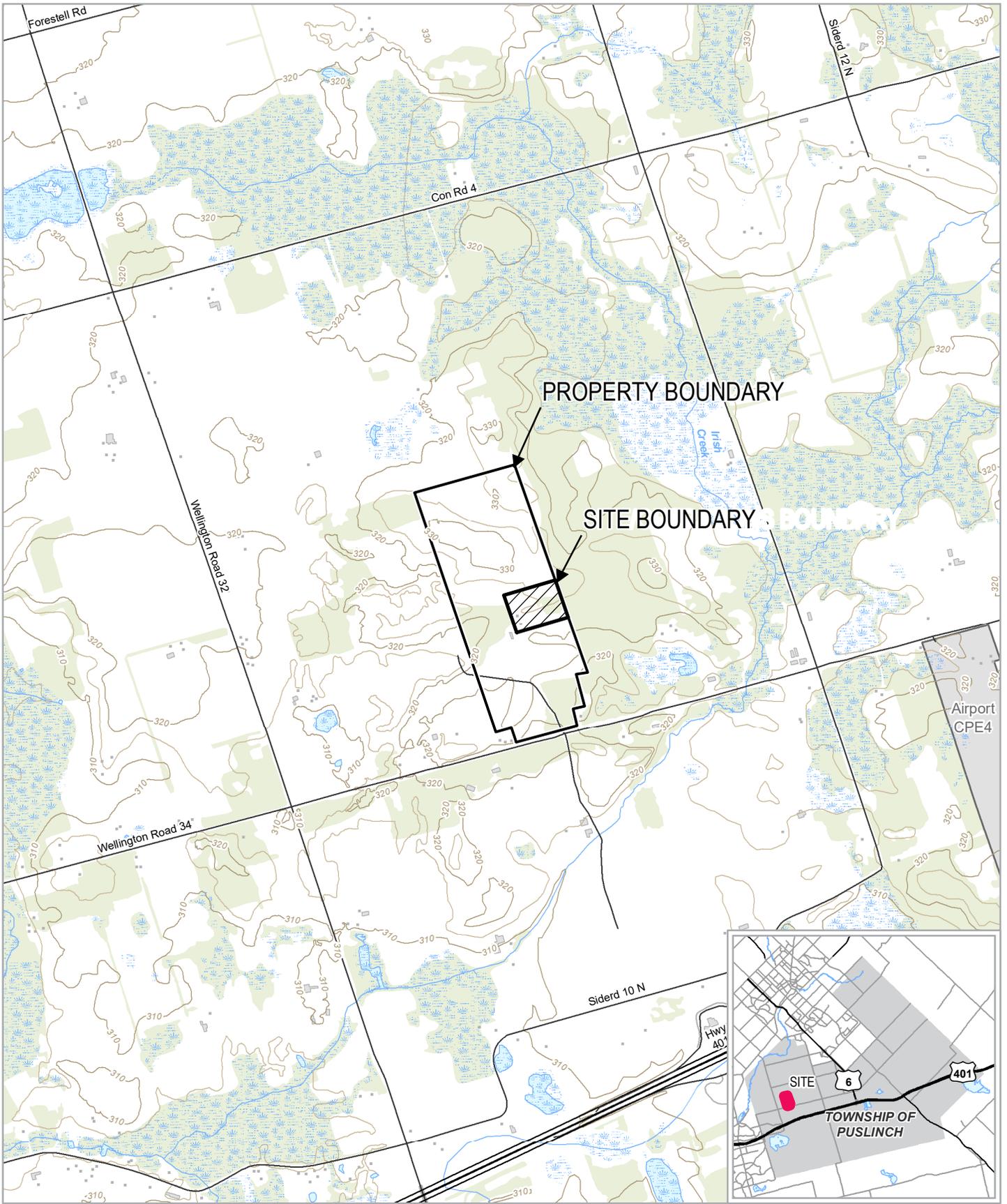
	Units						
<b><u>Anions and Nutrients (Water)</u></b>							
Phosphorus, Total	µg/L	<2.0	2.1	<2.0	2.9	2.6	5.7
<b><u>Organic / Inorganic Carbon (Water)</u></b>							
Total Organic Carbon	µg/L	1170	1500	1150	1320	1350	1470
<b><u>Polycyclic Aromatic Hydrocarbons (Water)</u></b>							
Acenaphthene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acenaphthylene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	2.4 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)anthracene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	0.01 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(b)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(g,h,i)perylene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenzo(ah)anthracene	0.2 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	0.41 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene	120 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-cd)pyrene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1+2-Methylnaphthalenes	3.2 µg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Naphthalene	11 µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1 µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

**Notes**

MECP Ministry of the Environment, Conservation and Parks  
 Full Depth Generic Site Condition Standards in a  
 Potable Ground Water Condition for all property uses

<sup>1</sup> Table 2 of the Soil, Groundwater and Sediment  
 Standards for Use Under Par XV.1 of the  
 Environmental Protection Act, April 15, 2011

µg/L micrograms per litre



2374868 ONTARIO INC.  
6678 WELLINGTON RD  
TOWNSHIP OF PUSLINCH  
ON

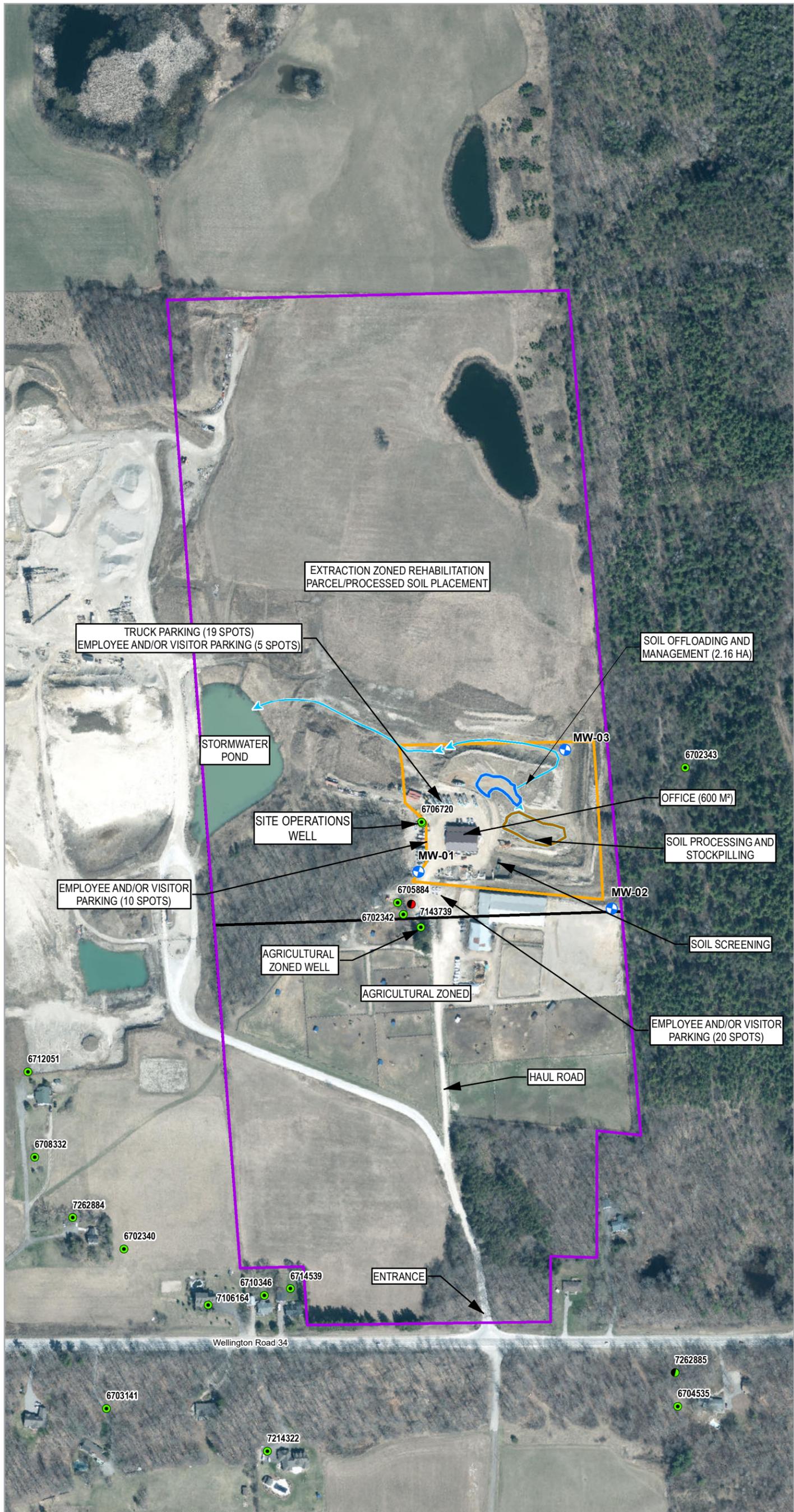
Project No. 11210029  
Revision No. -  
Date Oct 9, 2020

Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983 CSRS  
Grid: NAD 1983 CSRS UTM Zone 17N

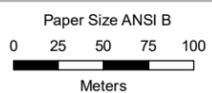
**SITE LOCATION MAP**

**FIGURE 1**

Data source: WWIS, 2020. Ontario Ministry of the Environment (Accessed August, 2020); Imagery Google 2020. Capture date: 7/Jul/2018



Legend	
<span style="color: green;">●</span>	Water Supply
<span style="color: red;">●</span>	Abandoned-Supply
<span style="color: green;">●</span>	Abandoned-Other
<span style="color: blue;">●</span>	Monitoring Well
<span style="color: blue;">↔</span>	Drainage Swale
<span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	Temporary Pond
<span style="border: 1px solid orange; display: inline-block; width: 10px; height: 10px;"></span>	Unloading/Drainage Area
<span style="border: 1px solid orange; display: inline-block; width: 10px; height: 10px;"></span>	Site/Operations Boundary
<span style="border: 1px solid purple; display: inline-block; width: 10px; height: 10px;"></span>	Property Boundary



Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983 CSRS  
Grid: NAD 1983 CSRS UTM Zone 17N

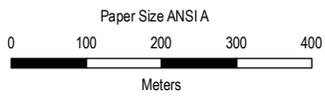
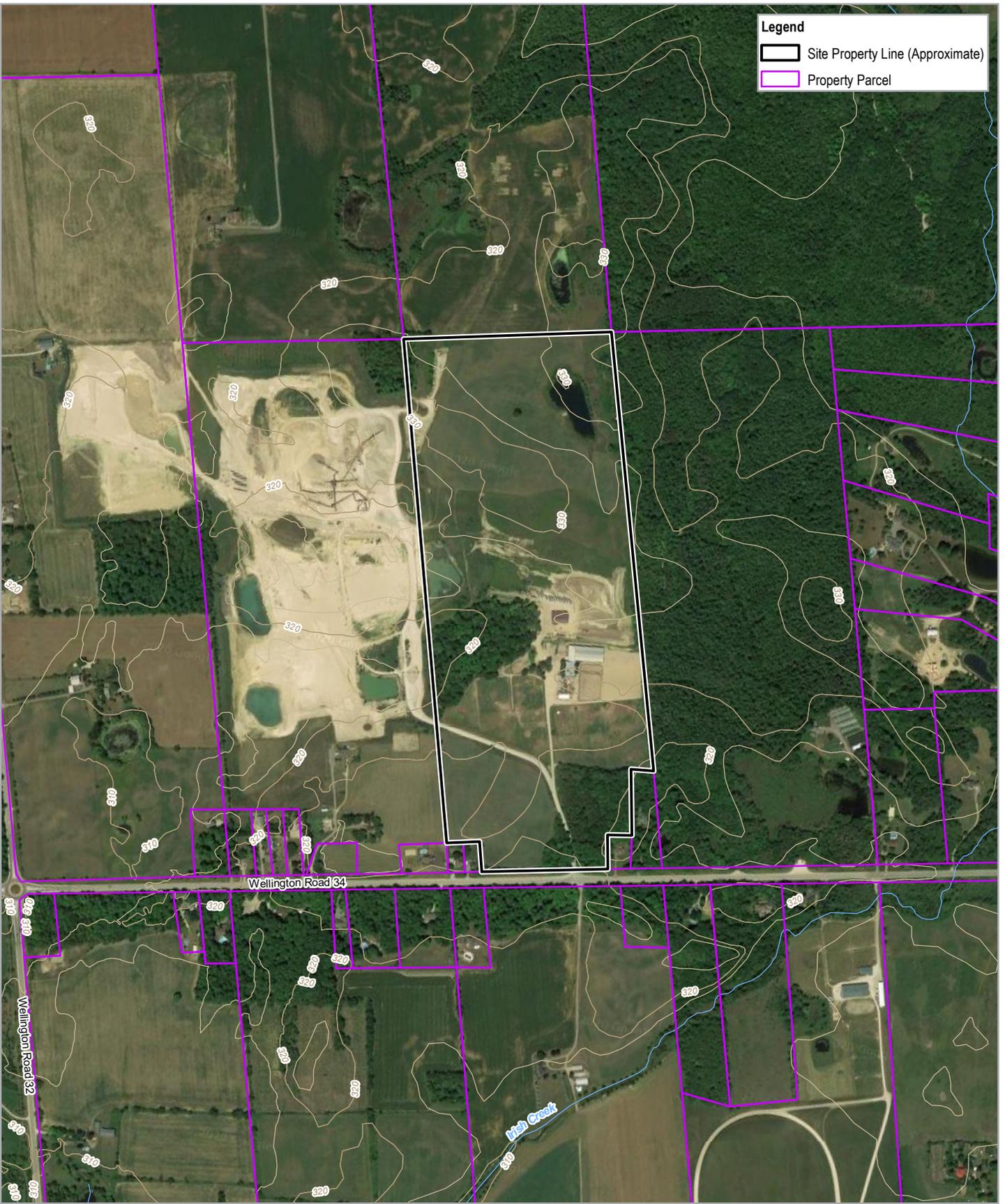


**2374868 ONTARIO INC.**  
**6678 WELLINGTON RD 34**  
**TOWNSHIP OF PUSLINCH, ON**

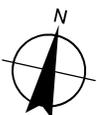
Project No. **11210029**  
Revision No. -  
Date **Apr 13, 2023**

**SITE LAYOUT**

**FIGURE 2**



Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983 CSRS  
 Grid: NAD 1983 CSRS UTM Zone 17N



2374868 ONTARIO INC. 6678  
 WELLINGTON RD 34  
 TOWNSHIP OF PUSLINCH, ON

Project No. 11210029  
 Revision No. -  
 Date Nov 6, 2020

**SITE TOPOGRAPHY**

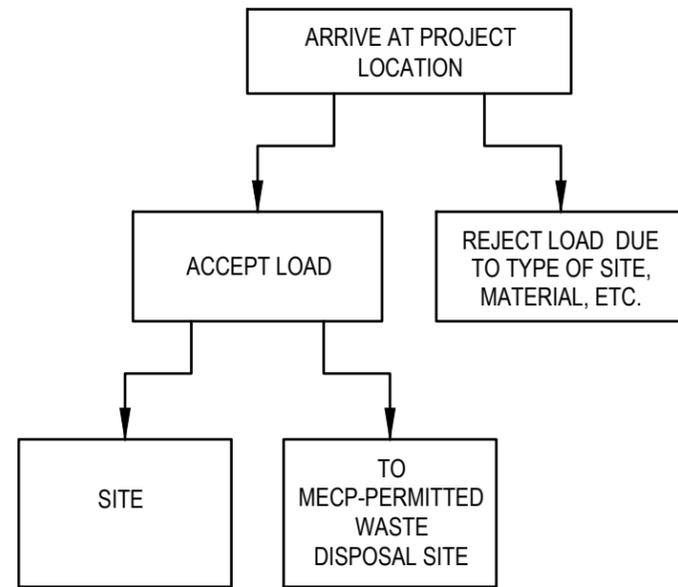
**FIGURE 3**

Data source: WWIS, 2020. Ontario Ministry of the Environment (Accessed August, 2020); Imagery Google 2020. Capture date: 7/Jul/2018

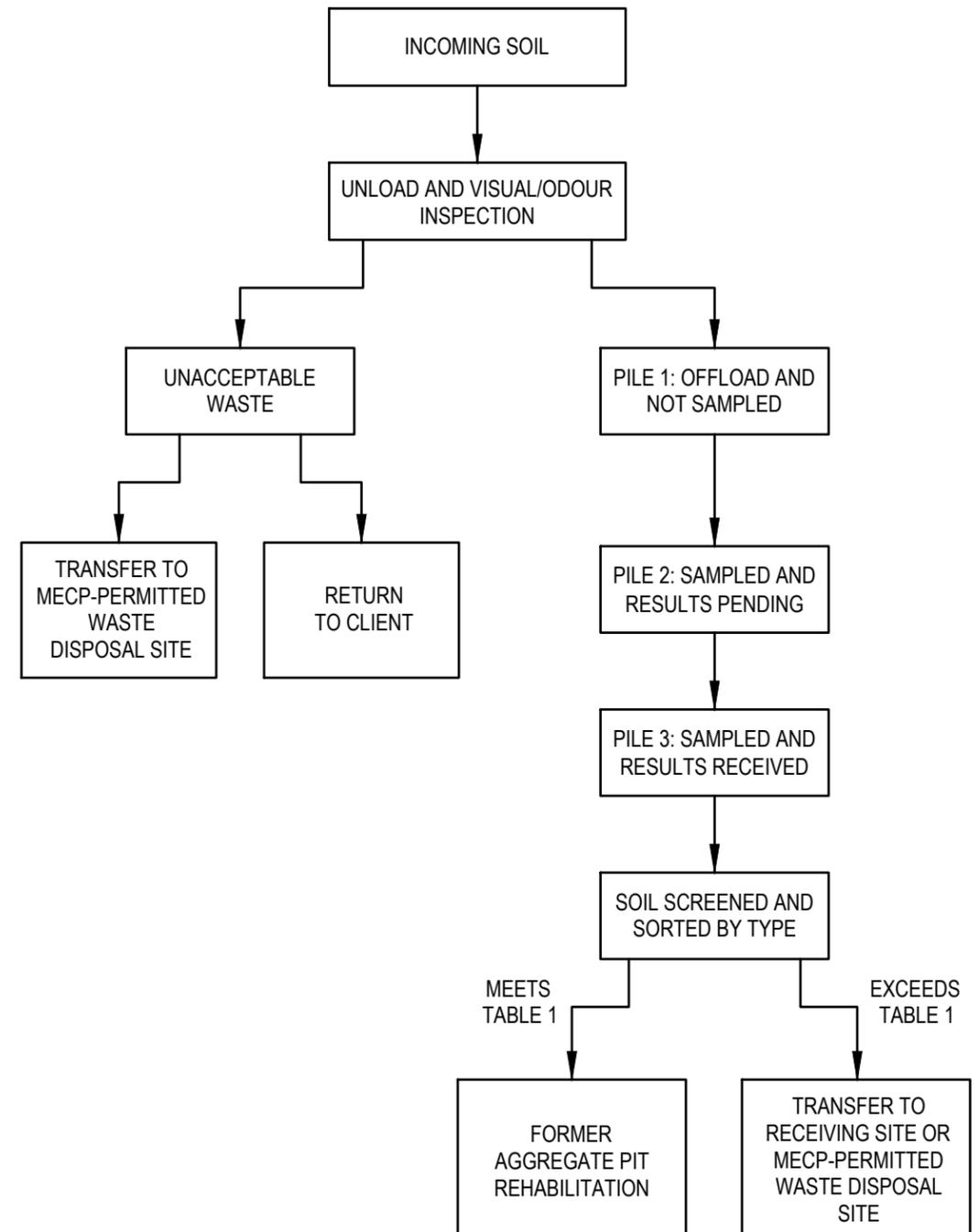
**1. AT TIME OF BOOKING**

ACCEPT OR REJECT PROJECT  
(BASED ON LOCATION,  
SITE TYPE, AND INFORMATION)

**2. AT HYDROVAC LOCATION**



**3. AT SITE**



2374868 ONTARIO INC.  
6678 WELLINGTON RD. 34,  
TOWNSHIP OF PUSLINCH, ONTARIO

Project No. 11210029  
Date December 2020

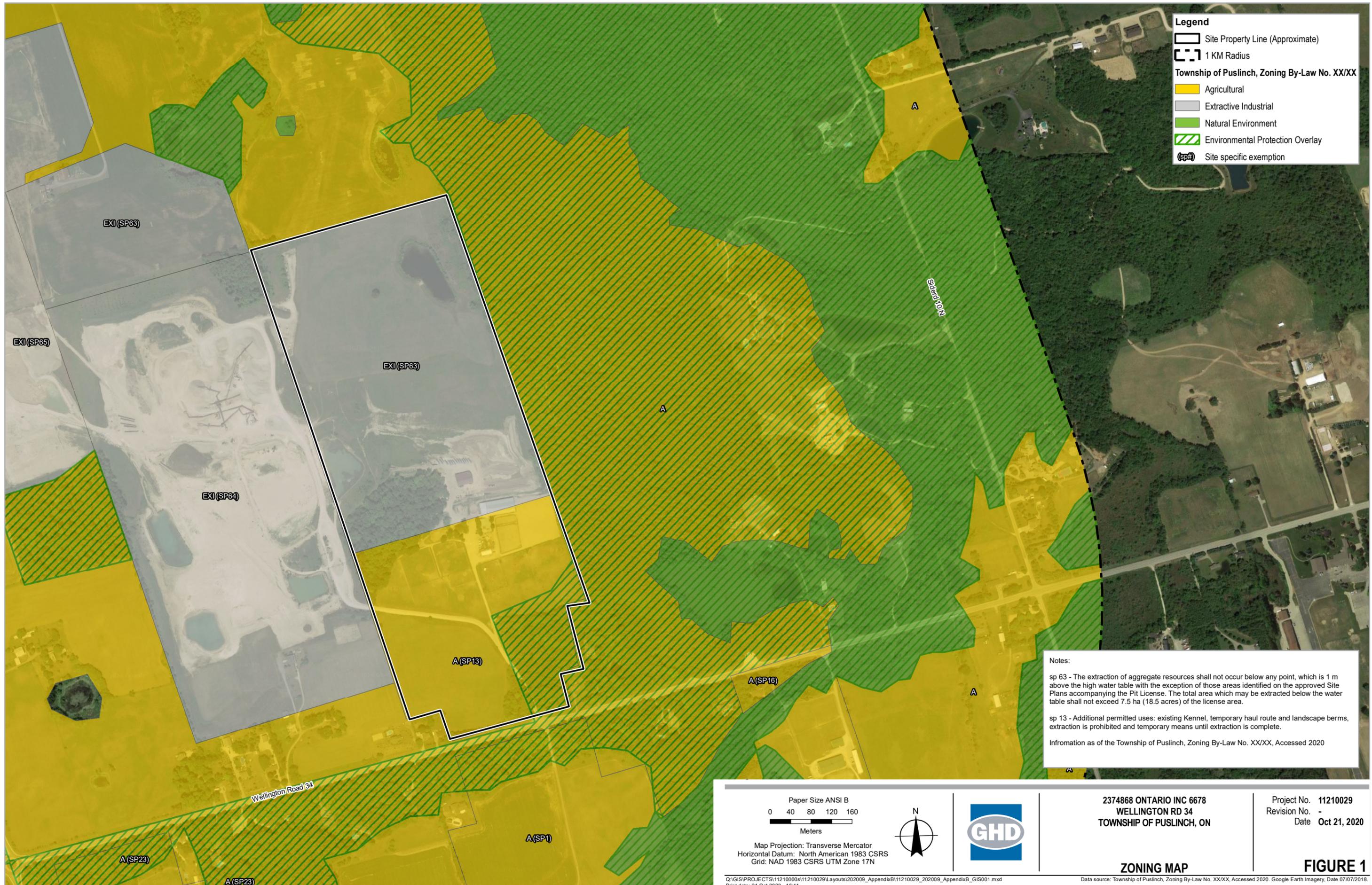
PROCESS FLOW DIAGRAM

FIGURE 4

# Appendices

# **Appendix A**

**Zoning**



**Legend**

- Site Property Line (Approximate)
- 1 KM Radius
- Township of Puslinch, Zoning By-Law No. XX/XX**
- Agricultural
- Extractive Industrial
- Natural Environment
- Environmental Protection Overlay
- Site specific exemption

**Notes:**

sp 63 - The extraction of aggregate resources shall not occur below any point, which is 1 m above the high water table with the exception of those areas identified on the approved Site Plans accompanying the Pit License. The total area which may be extracted below the water table shall not exceed 7.5 ha (18.5 acres) of the license area.

sp 13 - Additional permitted uses: existing Kennel, temporary haul route and landscape berms, extraction is prohibited and temporary means until extraction is complete.

Information as of the Township of Puslinch, Zoning By-Law No. XX/XX, Accessed 2020

<p>Paper Size ANSI B</p> <p>0 40 80 120 160</p> <p>Meters</p> <p>Map Projection: Transverse Mercator Horizontal Datum: North American 1983 CSRS Grid: NAD 1983 CSRS UTM Zone 17N</p>		<p>2374868 ONTARIO INC 6678 WELLINGTON RD 34 TOWNSHIP OF PUSLINCH, ON</p>	<p>Project No. 11210029 Revision No. - Date Oct 21, 2020</p>
<p><b>ZONING MAP</b></p>		<p><b>FIGURE 1</b></p>	

Q:\GIS\PROJECTS\11210000s\11210029\Layouts\202009\_AppendixB\11210029\_202009\_AppendixB\_GIS001.mxd  
Print date: 21 Oct 2020 - 16:11

Data source: Township of Puslinch, Zoning By-Law No. XX/XX, Accessed 2020. Google Earth Imagery, Date 07/07/2018.

---

**From:** Neill, Andrew (MECP) <[Andrew.Neill@ontario.ca](mailto:Andrew.Neill@ontario.ca)>  
**Sent:** Thursday, March 21, 2024 2:24 PM  
**To:** Fred Taylor <[Fred.Taylor@ghd.com](mailto:Fred.Taylor@ghd.com)>  
**Cc:** Armour, Lynnette (MECP) <[Lynnette.Armour@ontario.ca](mailto:Lynnette.Armour@ontario.ca)>  
**Subject:** Badger Puslinch

Hi Fred,

Further to our discussion this afternoon, the Ministry is willing to review the application by Badger to establish a liquid soil processing site in Puslinch despite the zoning issues. Please submit the application as soon as possible, and include a copy of this email in the application package so it does not get screened out due to zoning.

Thanks.

Andrew Neill, P.Eng.  
Senior Review Engineer  
Ministry of the Environment, Conservation and Parks  
Environmental Permissions Branch  
135 St. Clair Ave. W., 1<sup>st</sup> Floor  
Toronto, ON M4V 1P5  
Phone: (437) 999-8817  
E-Mail: [andrew.neill@ontario.ca](mailto:andrew.neill@ontario.ca)

*If you have any accommodation needs or require communication supports or alternate formats, please let me know.*

*Si vous avez des besoins en matière d'adaptation, ou si vous nécessitez des aides à la communication ou des médias substitués, veuillez me le faire savoir.*

# **Appendix B**

**Legal Survey**

**SURVEYOR'S REAL PROPERTY REPORT  
PLAN OF SURVEY OF  
PART OF SOUTH HALF LOT 8  
CONCESSION 3  
TOWNSHIP OF PUSLINCH  
COUNTY OF WELLINGTON**

SCALE 1 : 1500  
VAN HARTEN SURVEYING INC.

**REPORT:**

**CLIENT:**  
THIS PLAN WAS PREPARED FOR GHD LIMITED AND THE UNDERSIGNED ACCEPTS NO RESPONSIBILITY FOR USE BY OTHER PARTIES.

**DESCRIPTION OF PROPERTY:**  
PIN 71210-0046 (LT)  
PART OF SOUTH HALF LOT 8, CONCESSION 3  
TOWNSHIP OF PUSLINCH  
ADDRESS: 6678 WELLINGTON ROAD 34

**NOTE:**  
1) BOUNDARIES OF THE SUBJECT PARCEL WERE RE-ESTABLISHED FROM PREVIOUS SURVEY MONUMENTS, PLANS, AND DEED DESCRIPTIONS.  
2) NOTE THE POSITIONS OF FENCES, BUILDINGS, AND OTHER FEATURES AS THEY RELATE TO THE BOUNDARIES AS SHOWN ON THE PLAN.

**EASEMENTS:**  
NONE FOUND IN REGISTRY OFFICE

**LEGEND:**

—	DENOTES SURVEY MONUMENT SET
■	DENOTES SURVEY MONUMENT FOUND
SIB	DENOTES .025 X .025 X 1.20 STANDARD IRON BAR
IB	DENOTES .015 X .015 X 0.60 IRON BAR
PWF	DENOTES POST AND WIRED FENCE
VH	DENOTES VAN HARTEN SURVEYING INC., O.L.S.'S
OU	DENOTES ORIGIN UNKNOWN
375	DENOTES BLACK, SHOEMAKER, ROBINSON & DONALDSON, O.L.S.'S
1114	DENOTES METZ & LORENTZ LTD., O.L.S.'S
1426	DENOTES MCDONALD TAMBLYN LORD SURVEYING LTD., O.L.S.'S
P1	DENOTES REGISTERED PLAN 61R-3278
P2	DENOTES REGISTERED PLAN 61R-10073
P3	DENOTES REGISTERED PLAN 61R-3437
P4	DENOTES REGISTERED PLAN 61R-6506 BY (1426)
P5	DENOTES REGISTERED PLAN 61R-10061 BY (VH)
P6	DENOTES SURVEY BY (375), FILE NO. 97-0709, DATED MARCH 3, 1997
D1	DENOTES LAND EXPROPRIATION PLAN No. MS-42560 BY (375)
D2	DENOTES INST. No. 710775
D3	DENOTES INST. No. M-3326
D4	DENOTES INST. No. 781537

FENCE POST	●	HYDRO POLE	HP
FENCE LINE	—	OVERHEAD HYDRO	—
ASPHALT	■	GRAVEL	■

**BEARING & DISTANCE NOTES:**

- BEARINGS ARE GRID BEARINGS AND ARE DERIVED FROM GPS OBSERVATIONS AND ARE REFERRED TO THE UTM PROJECTION, ZONE 17, NAD 83-CSRS (2010) ADJUSTMENT.
- DISTANCES SHOWN ON THE PLAN ARE ADJUSTED GROUND DISTANCES AND CAN BE CONVERTED TO UTM GRID DISTANCES BY MULTIPLYING BY AN AVERAGED COMBINED SCALE FACTOR OF 0.999602.

**BEARING COMPARISONS:**

FOR THE PURPOSES OF BEARING COMPARISONS, PREVIOUS SURVEYS HAVE BEEN ROTATED TO UTM BEARINGS BY THE ANGLES SHOWN BELOW.

PLAN	ROTATION FOR NORTHEAST BEARINGS
P1, P2, P6, D1, D2, D3, D4	-0°29'55"
P3	-0°32'00"
P4, P5	-0°30'05"

**NOTES:**

- DISTANCES ON THIS PLAN ARE MEASURED IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.
- DISTANCES RELATING TO FENCES ARE TO THE CENTRELINE OF FENCE.
- FENCES WITHIN 0.1 METRE OF THE BOUNDARY ARE INDICATED AS BEING ON LINE.

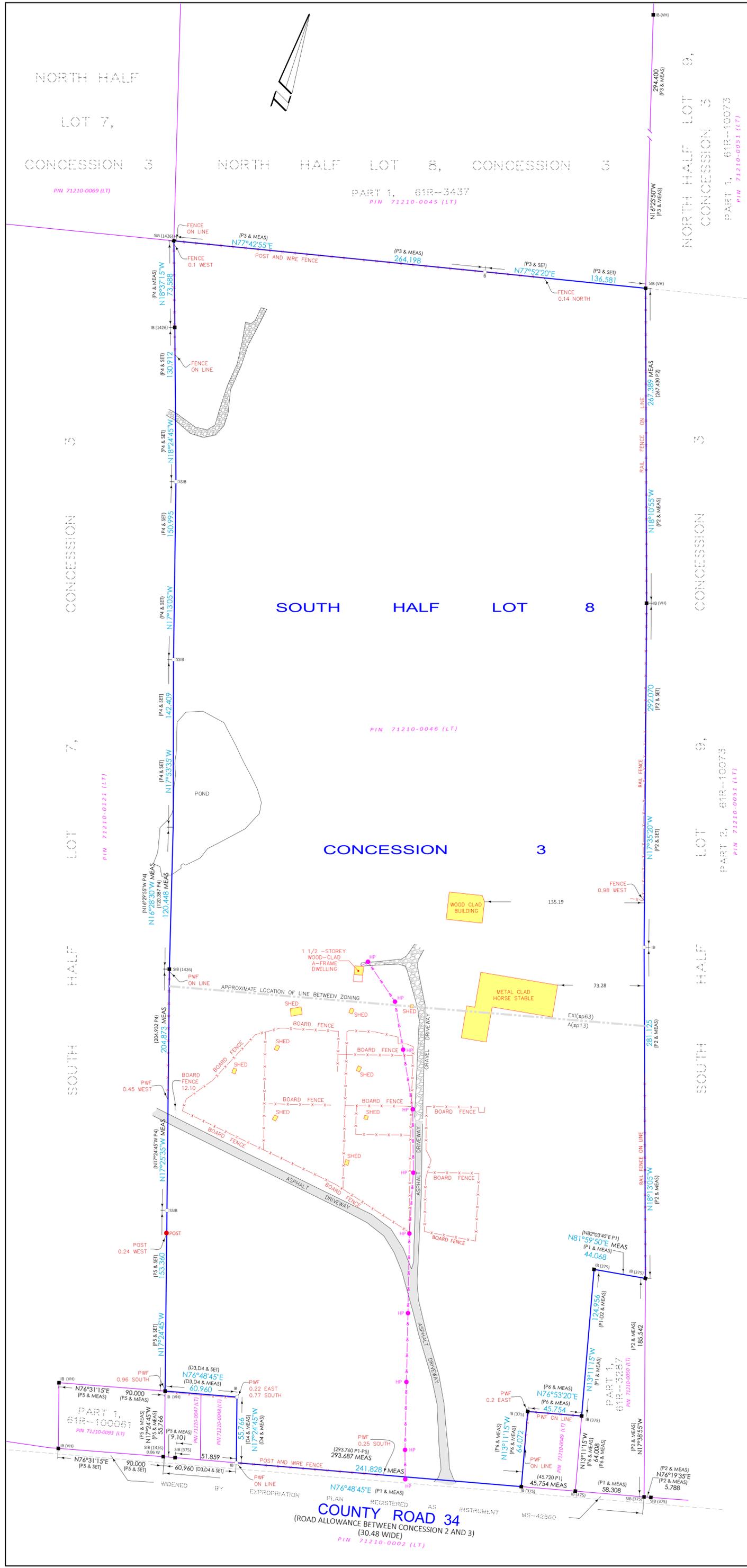
**SURVEYOR'S CERTIFICATE**

- I CERTIFY THAT:
- THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
  - THIS SURVEY WAS COMPLETED ON THE 30th DAY OF OCTOBER, 2020.

DATE: NOVEMBER 16, 2020

**RONALD MAK**  
ONTARIO LAND SURVEYOR

<p>ASSOCIATION OF ONTARIO LAND SURVEYORS PLAN SUBMISSION FORM 2141323</p>	<p><b>Van Harten SURVEYING INC.</b> LAND SURVEYORS and ENGINEERS</p>		
	<p>Kitchener/Waterloo Ph: 519-742-8371</p>	<p>Guelph Ph: 519-821-2763</p>	<p>Orangeville Ph: 519-940-4110</p>
<p>www.vanharten.com info@vanharten.com</p>			
<p>THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR in accordance with Regulation 1026, Section 29(3).</p>	<p>DRAWN BY: PJ Nov 19, 2020 11:33:38 AM M:\Geographic\KW\PUSLINCH\CON 3\CAD\SRPR LT9 (GHD) 28936-20 UTM 2010 (REV 2).dwg</p>	<p>CHECKED BY: MS PROJECT No. 28936-20</p>	
<p>2020 VAN HARTEN SURVEYING INC. NO PERSON MAY COPY, REPRODUCE, DISTRIBUTE OR ALTER THIS PLAN IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF VAN HARTEN SURVEYING INC.</p>			



**COUNTY ROAD 34**  
(ROAD ALLOWANCE BETWEEN CONCESSION 2 AND 3)  
(30.48 WIDE)  
PIN 71210-0002 (LT)

# **Appendix C**

**Traffic Study**

Our ref: 11210029

December 13, 2021

Mr. Fred Taylor, P.Eng, LEP, LSP, LRS, QP  
GHD Limited  
455 Phillip Street  
Waterloo, Ontario N2L 3X2

Subject: **Traffic Operations Assessment for 6678 Wellington County Road 34**

Dear Mr. Taylor:

GHD is pleased to provide this Traffic Operations Assessment for the existing access at 6678 Wellington County Road 34.

This assessment is based on the currently available traffic data of Wellington County Road 34 in the vicinity of the existing access at #6678. Figure 1 shows the location of the access. It is our understanding that the access is shared by two businesses: Badger and Capital Paving. Badger operates a vac-truck business with a fleet of approximately 25 trucks. It is estimated that most of the trucks are on the road and leave the site in morning, say 20 trucks, with half returning in the early afternoon and the remaining half in the later afternoon corresponding to the time between 3 and 6pm. Capital Paving operates an aggregate extraction business with trucks arriving to be loaded with sand /gravel and leaving full at a steady pace. It is also our understanding that the operation is seasonal. Therefore, our estimate of the truck traffic associated with the two businesses likely over-estimates the actual truck traffic at the access.



Figure 1: Access Location

# 1. County Road Traffic

Wellington County provided us the details which are provided in Appendix A of the most recent traffic data at Wellington Road 34 0.1km east of Wellington Road 32 which is approximately 900 m west of the subject access at #6678 Wellington Road 34. The traffic during the AM and PM peak hours is summarized in Figure 2.

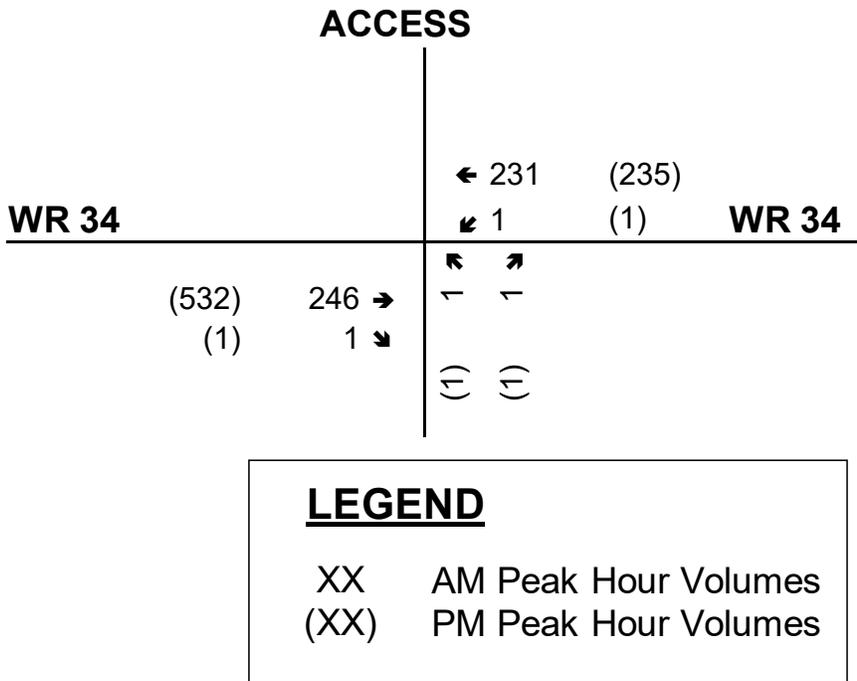


Figure 2: Wellington Road 34 Traffic

# 2. Access Traffic

The Badger traffic is estimated as 20 trucks leaving the access during the AM peak hour and approximately half the fleet returning full during the early afternoon (12-3PM) and the remaining returning in the late afternoon (3-6PM). It is estimated approximately 7 trucks return during the PM peak hour. Figure 3 illustrates the estimated Badger traffic.

Capital Paving traffic is estimated on the basis of the logistics of loading aggregate into trucks at a relatively steady rate of 5 trucks per hour. Therefore, during the AM peak hour, it is estimated that 5 trucks will enter and 5 trucks will exit the access. However, in the evening operations wind down; it is estimated that during the PM peak hour (5-6PM) only trucks leaving the site will be active to deliver one last load of the day. Figure 4 shows the estimated traffic related to Capital Paving.



### 3. Total Traffic

Combining the traffic on County Road 34 and the traffic turning at the access to #6678, the total traffic is derived. Figure 5 shows the total traffic at the access.

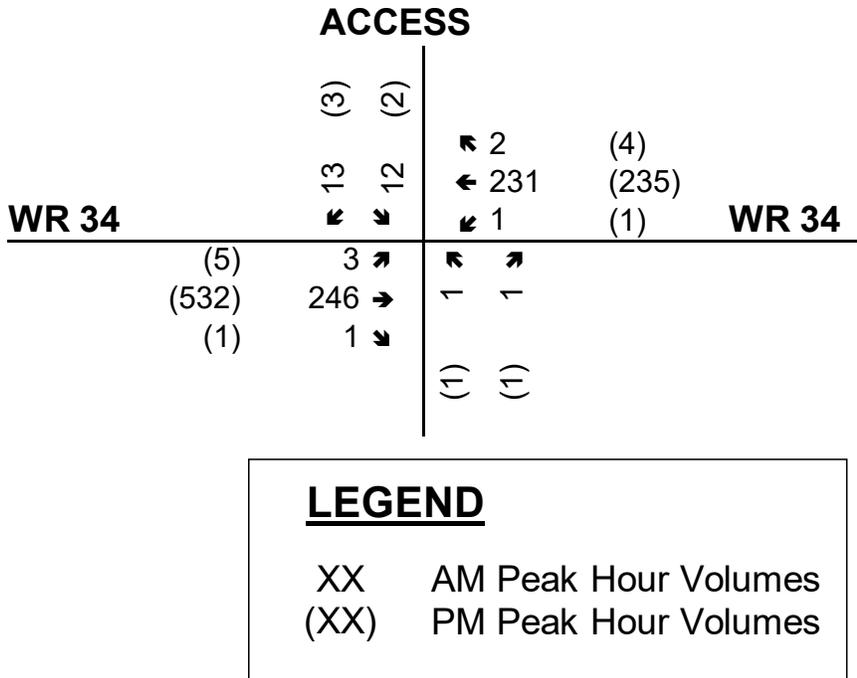


Figure 5: Total Traffic

### 4. Traffic Assessment

Assessment of the traffic at the access used SYNCHRO software. Results indicate good levels of service ‘C’, or better with individual v/c movements of 0.05, or less indicating substantial reserve capacity. Table 1 provides the summary of the results and Appendix B contains the detailed analysis reports.

Table 1:

Intersection	Control Type	AM Peak Hour			PM Peak Hour		
		Overall v/c (LOS) Delay in Seconds	Critical/ Key Movements v/c(LOS) Delay in Seconds	95th %ile Queues (m)	Overall v/c (LOS) Delay in Seconds	Critical/ Key Movements v/c(LOS) Delay in Seconds	95th %ile Queues (m)
WR 34 & Access	Unsignalized	SBTLR 0.05 (B) 12	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0 (B) 12 SBTLR = 0.05 (B) 12	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m	NBTLR 0.01 (C) 15	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (C) 15 SBTLR = 0.01 (B) 13	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m

The access is currently in operation and has been for several years with no known reports of collisions. With the traffic on WR34 and the expected traffic turning left (eastbound left) into the access being 1% of the traffic travelling eastbound, a left turn lane is not required.

The access has tapered pavement for the entering vehicles (westbound right) and the exiting vehicles turning right (southbound right).

If you wish to discuss any aspect of the report, please feel free to contact Mr. Roland Roovers. We trust that the above noted information is suitable for your purposes.

Sincerely,

GHD



**Roland Roovers, P.Eng.**  
Senior Transportation Manager

**+1 905 752-4348**  
roland.roovers@ghd.com

Attach. Appendices A-B

RR/hs

# Appendix A

## Traffic Data

Report-1.1	Location : 3402EW WR34 - 0.1 km East of WR 32															
	Direction : East Road :															
	Dates : 25/04/2019															
Classes ----->	Class-1	Class-2	Class-3	Class-4	Class-5	Class-6	Class-7	Class-8	Class-9	Class-10	Class-11	Class-12	Class-13	Total		
00:00 0:15		3												3	0.1%	
0:15 0:30		1												1	0.0%	
0:30 0:45		4							1					5	0.2%	
0:45 1:00		1												1	0.0%	
00:00 1:00		9							1					10	0.4%	
1:00 1:15																
1:15 1:30		2												2	0.1%	
1:30 1:45																
1:45 2:00		1	1											2	0.1%	
1:00 2:00		3	1											4	0.2%	
2:00 2:15																
2:15 2:30		1												1	0.0%	
2:30 2:45		1	1											2	0.1%	
2:45 3:00																
2:00 3:00		2	1											3	0.1%	
3:00 3:15																
3:15 3:30			1											1	0.0%	
3:30 3:45		2	2											4	0.2%	
3:45 4:00		1												1	0.0%	
3:00 4:00		3	3											6	0.2%	
4:00 4:15			1						1					2	0.1%	
4:15 4:30		1	1											2	0.1%	
4:30 4:45		6	1											7	0.3%	
4:45 5:00		5	1						2					8	0.3%	
4:00 5:00		12	4						3					19	0.8%	
5:00 5:15		5							1					6	0.2%	
5:15 5:30		11	6		1				1					19	0.8%	
5:30 5:45		16	2						1	1				20	0.8%	
5:45 6:00	1	15	9		2	1								28	1.1%	
5:00 6:00	1	47	17		3	1			3	1				73	2.9%	
6:00 6:15		12	5		1	1			1					20	0.8%	
6:15 6:30		30	6			1	1		3					41	1.6%	
6:30 6:45	1	45	11	1	4	1			1	2				66	2.6%	
6:45 7:00		28	10	2	5				1	1	2			49	1.9%	
6:00 7:00	1	115	32	3	10	3	1	2	7	2				176	7.0%	
7:00 7:15		37	12	3					2					54	2.1%	
7:15 7:30		37	11		3			1	1					53	2.1%	
7:30 7:45		52	10		2	2		1	3	1				69	2.7%	
7:45 8:00	1	49	13	2	1	1		1	1					68	2.7%	
7:00 8:00	1	175	46	5	4	2		3	7	1				244	9.7%	
8:00 8:15		32	10	1	1	1								45	1.8%	
8:15 8:30		32	13		3			1						49	1.9%	
8:30 8:45		38	17			1	1							57	2.3%	
8:45 9:00		39	12			1								52	2.1%	
8:00 9:00		141	52	1	4	3	1	1						203	8.1%	
9:00 9:15		34	7	1	2	1			1				1	47	1.9%	
9:15 9:30		14	4			1			1					20	0.8%	
9:30 9:45		19	12	2	3				2					38	1.5%	
9:45 10:00		13	16	1	1	1			2	1				35	1.4%	
9:00 10:00		80	39	4	6	3		2	5				1	140	5.6%	
10:00 10:15		15	6					1	1					23	0.9%	
10:15 10:30		16	4	1				1						22	0.9%	
10:30 10:45		14	7		1	2		1	1					26	1.0%	
10:45 11:00		11	10		3	4	1		1					30	1.2%	
10:00 11:00		56	27	1	4	6	2	2	3					101	4.0%	
11:00 11:15		17	7		2	1								27	1.1%	
11:15 11:30	1	23	10	1	1	1	1		1					39	1.5%	
11:30 11:45		25	7		1	3								36	1.4%	
11:45 12:00	1	13	3				1							18	0.7%	
11:00 12:00	2	78	27	1	4	5	2		1					120	4.8%	

AM PK HR  
from East

Trucks from east  
7  
3

2  
4

6.9% trucks  
16

PHF	PHF
East	All Intersection
15 mins	15 mins
69	129
68	136
45	99
49	113
0.837	0.877



Report-1.2		Location : 3402EW WR34 - 0.1 km East of WR 32														
		Direction : West											Road :			
		Dates : 25/04/2019														
Classes ----->		Class-1	Class-2	Class-3	Class-4	Class-5	Class-6	Class-7	Class-8	Class-9	Class-10	Class-11	Class-12	Class-13	Total	
00:00	0:15		1	1											2	0.1%
0:15	0:30		1												1	0.0%
0:30	0:45		1	1											2	0.1%
0:45	1:00		2						1						3	0.1%
00:00	1:00		5	2					1						8	0.3%
1:00	1:15		5												5	0.2%
1:15	1:30		2	1											3	0.1%
1:30	1:45		2												2	0.1%
1:45	2:00															
1:00	2:00		9	1											10	0.3%
2:00	2:15															
2:15	2:30		3												3	0.1%
2:30	2:45		2												2	0.1%
2:45	3:00						1								1	0.0%
2:00	3:00		5			1									6	0.2%
3:00	3:15			1											1	0.0%
3:15	3:30			1											1	0.0%
3:30	3:45															
3:45	4:00															
3:00	4:00			2											2	0.1%
4:00	4:15															
4:15	4:30		1	1											2	0.1%
4:30	4:45		1												1	0.0%
4:45	5:00		2	2											4	0.1%
4:00	5:00		4	3											7	0.2%
5:00	5:15			2											2	0.1%
5:15	5:30	1	6	1											8	0.3%
5:30	5:45		3	2		1									6	0.2%
5:45	6:00		6	2											8	0.3%
5:00	6:00	1	15	7		1									24	0.8%
6:00	6:15		4	1		1									6	0.2%
6:15	6:30		13	4				1							18	0.6%
6:30	6:45		16	6		1		2							25	0.8%
6:45	7:00		21	8	2	1									32	1.0%
6:00	7:00		54	19	2	3		3							81	2.6%
7:00	7:15		25	10		3	2								40	1.3%
7:15	7:30		39	9		3	1								52	1.6%
7:30	7:45	1	48	7		2	2								60	1.9%
7:45	8:00		48	15		3	2								68	2.2%
7:00	8:00	1	160	41		5	6	7							220	7.0%
8:00	8:15	1	41	4	3	1	1	1	1				1		54	1.7%
8:15	8:30	1	50	7	2	3	3	1							64	2.0%
8:30	8:45		44	8	1	3	3				1				60	1.9%
8:45	9:00		37	11	1				1						50	1.6%
8:00	9:00	2	172	30	7	4	7	1	1	2	1			1	228	7.2%
9:00	9:15		31	11	4	1	1		1						49	1.6%
9:15	9:30		26	9		2	5				1				43	1.4%
9:30	9:45		20	5		2	2								29	0.9%
9:45	10:00		14	7		2									23	0.7%
9:00	10:00		91	32	4	7	8		1		1				144	4.6%
10:00	10:15		21	7		1	2		1	1	2				35	1.1%
10:15	10:30		19	9	1	1	3			1	1				34	1.1%
10:30	10:45		16	5	1	1	2								25	0.8%
10:45	11:00		21	7		1	3	1			3				36	1.1%
10:00	11:00		77	28	2	3	10	1	1	5	3				130	4.1%
11:00	11:15		10	10	1	1									22	0.7%
11:15	11:30		18	6		1	3	1	1		1				31	1.0%
11:30	11:45		25	4		2	2			4			1		38	1.2%
11:45	12:00		23	7		2	1		2						35	1.1%
11:00	12:00		76	27	1	6	6	1	3	4	1			1	126	4.0%

AM PK HR  
from West

Trucks from west

4  
5

5  
4

7.3% trucks  
18

PHF
West
15 mins
60
68
54
64
0.904

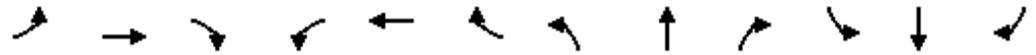


# Appendix B

**Total Traffic SYNCHRO Reports**

Volume  
2: WR 34 & Access

12/13/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	3	246	1	1	231	2	1	0	1	12	0	13
Future Volume (vph)	3	246	1	1	231	2	1	0	1	12	0	13
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	280	1	1	263	2	1	0	1	14	0	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	284	0	0	266	0	0	2	0	0	29	0
Intersection Summary												

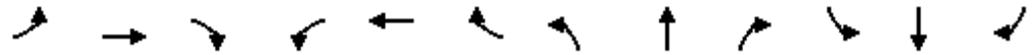
HCM Unsignalized Intersection Capacity Analysis  
2: WR 34 & Access

12/13/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	246	1	1	231	2	1	0	1	12	0	13
Future Volume (Veh/h)	3	246	1	1	231	2	1	0	1	12	0	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	3	280	1	1	263	2	1	0	1	14	0	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	265			281			568	554	280	554	553	264
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	265			281			568	554	280	554	553	264
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			100	100	100	97	100	98
cM capacity (veh/h)	1271			1253			417	433	747	434	433	763
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	284	266	2	29								
Volume Left	3	1	1	14								
Volume Right	1	2	1	15								
cSH	1271	1253	535	559								
Volume to Capacity	0.00	0.00	0.00	0.05								
Queue Length 95th (m)	0.1	0.0	0.1	1.2								
Control Delay (s)	0.1	0.0	11.8	11.8								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.1	0.0	11.8	11.8								
Approach LOS			B	B								
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			25.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Volume  
2: WR 34 & Access

12/13/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	5	532	1	1	235	4	1	0	1	2	0	3
Future Volume (vph)	5	532	1	1	235	4	1	0	1	2	0	3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	7%	4%	4%	7%	7%	7%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	585	1	1	258	4	1	0	1	2	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	591	0	0	263	0	0	2	0	0	5	0
Intersection Summary												

# HCM Unsignalized Intersection Capacity Analysis

## 2: WR 34 & Access

12/13/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	532	1	1	235	4	1	0	1	2	0	3
Future Volume (Veh/h)	5	532	1	1	235	4	1	0	1	2	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	5	585	1	1	258	4	1	0	1	2	0	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	262			586			860	860	586	858	858	260
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	262			586			860	860	586	858	858	260
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			100	100	100	99	100	100
cM capacity (veh/h)	1274			965			268	287	501	270	288	767
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	591	263	2	5								
Volume Left	5	1	1	2								
Volume Right	1	4	1	3								
cSH	1274	965	350	441								
Volume to Capacity	0.00	0.00	0.01	0.01								
Queue Length 95th (m)	0.1	0.0	0.1	0.3								
Control Delay (s)	0.1	0.0	15.4	13.2								
Lane LOS	A	A	C	B								
Approach Delay (s)	0.1	0.0	15.4	13.2								
Approach LOS			C	B								
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization			41.6%		ICU Level of Service				A			
Analysis Period (min)			15									

# **Appendix D**

**Stormwater Management Plan (GHD,  
August 2022) (Text, Figures, Drawings and  
Tables only, no Appendices)**

## Amelia Soutar

---

**From:** Nishant Patel  
**Sent:** Wednesday, May 12, 2021 12:56 PM  
**To:** Young, Justie (MECP)  
**Cc:** Fred Taylor; Amelia Soutar  
**Subject:** RE: Industrial Sewage Works ECA Ref# 1000116741

**DISABLEFILINGSTATUS:** 0

Good Afternoon Justie,

We are in agreement with this approach. We accept to withdraw the sewage works ECA application.

Thank you,

**Nishant Patel, EIT**

### GHD

*Proudly employee owned*

Direct: +1 519 340 3842 | T: +1 519 884 0510 | E: [Nishant.Patel@ghd.com](mailto:Nishant.Patel@ghd.com)  
455 Phillip St Unit#100A Waterloo Ontario N2L 3X2 | [www.ghd.com](http://www.ghd.com)

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Please consider our environment before printing this email

---

**From:** Young, Justie (MECP) <Justie.Young@ontario.ca>  
**Sent:** Friday, April 30, 2021 10:18 AM  
**To:** Nishant Patel <Nishantkumar.Patel@ghd.com>; eric@badger.team  
**Subject:** Industrial Sewage Works ECA Ref# 1000116741

You don't often get email from [justie.young@ontario.ca](mailto:justie.young@ontario.ca). [Learn why this is important](#)

Good morning,

I am the review engineer assigned to the Industrial Sewage Works ECA application Ref# 1000116741 for 2374868 ONTARIO INC. (Hydrovac Soil Management at 6678 Wellington Rd 34, Cambridge).

Based on a review of the scope of this application and the Waste ECA application under Ref# 1000115946, the proposal under the Industrial Sewage Works application will be covered under the Waste ECA application, and a separate Industrial Sewage Works ECA is not required at this time.

If you are in agreement, please kindly respond to this email for withdrawing the application.

Thanks,

**Justie Young, P.Eng.**  
Senior Wastewater Engineer

**Ministry of the Environment, Conservation and Parks**  
Industrial and Private Wastewater Approvals Services Section  
Environmental Permissions Branch



# **Stormwater Management Plan Rev. 1**

**2374868 Ontario Inc.  
6678 Wellington Road 4  
Township of Puslinch, Ontario**

Badger Conestoga Inc.

August 25, 2022

# Contents

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## **Appendices**

Appendix A	Zoning Map
Appendix B	Hydrogeological Impact Assessment (HIA) Report
Appendix C	MECP Comments on the HIA Report and Responses
Appendix D	Hydrologic Model Input and Output Files

## **Drawings**

Drawing C-01	Operations Existing Conditions Site Plan
--------------	--

# 1. Introduction

GHD has prepared this Stormwater Management (SWM) Plan, on behalf of 2374868 Ontario Inc. (The Applicant), to support permit applications. This SWM Plan documents the Applicant's stormwater management features at their processing facility located at 6678 Wellington Road 34 in Wellington County, Township of Puslinch, Ontario (Property). The Site is located on a small portion of the Property as shown on Figure 1, Site Location Map. 2374868 Ontario Inc. owns the Property and operates the Site.

This SWM Plan presents GHD review of the existing SWM features in accordance with Ministry of the Environment, Conservation and Parks (MECP) requirements. GHD notes that this report presents the existing sewage works and that no new works are proposed for the Site. Applications for a Waster Processing Environmental Compliance Approval (ECA) and an Air and Noise ECA for the Site have been submitted.

The Facility receives soil mixed with approximately 40 to 60 percent potable water (liquid soil) from hydrovacating operations at multiple sites conducted by Site operators and trucks. The soil processing operations are governed under the Waste Processing ECA. The wet soil is stockpiled and the water drains off the soil by gravity drainage to the stormwater management system. The dry soil is sampled for chemical analysis to confirm that it is acceptable for use at appropriate on or off-Site locations in accordance with Waste ECA requirements.

The report (in addition to figures, drawings, and appendices) is organized into the following sections:

- Section 1 – Introduction
- Section 2 – Background
- Section 3 – Existing Site Conditions
- Section 4 – Hydrologic Assessment
- Section 5 – Monitoring and Maintenance
- Section 6 – Conclusions

The following guidelines and regulations have been reviewed during the process of developing the SWM Plan:

- "Development Engineering Manual" prepared by the City of Guelph Engineering and Capital Infrastructure Services, dated November 2016
- "Stormwater Management Planning and Design Manual", prepared by the MOECC in March 2003

## 2. Background Information

The Property is legally described as Lot 8, Concession 3 in Wellington County and is 39.3 hectares (ha) in size. The Property is comprised of two (2) equal sized parcels, one zoned as Extractive (EXI) and one zoned as Agricultural (A) as shown on Figure 2.

The Site is located on a 2.16 hectares portion of the EXI zoned parcel as shown on Figure 2. The zoning in the area of the Property is provided in Appendix A. The current zoning allows the Site operations, and a minor zoning amendment application has been submitted to Wellington County/the Township of Puslinch to update the specific allowed uses. The adjacent land use to the Property to the west is an operating aggregate extraction pit, to the north is agricultural land, to the east is forested conservation land, and to the south across Wellington Road 34 are residential and agricultural lands. The Ontario Ministry of Natural Resources and Forestry (MNRF) approved Pit Rehabilitation Plan provides for soil importation and associated infrastructure for rehabilitation.

## 2.1 Site Layout

The Site Layout is shown on Figure 2. The Site operations include the following:

- Site access
- Office Building
- Vehicle Parking areas
- Outdoor soil and water management
- Security

The Property has some wooden fencing on the south, east and north sides.

The Office Building is approximately 715 (m<sup>2</sup>) in size. The building is a barn style open concept, steel framed, and wood and metal clad structure with a concrete foundation and floor. The building is used for office work and miscellaneous equipment storage. Roof stormwater runoff is directed to the ground surface.

## 2.2 Hours and Days of Operations

The Site typically operates from 7 am to 6 pm Monday to Friday with trucks leaving in the morning and returning in the afternoon to unload. Some trucks make multiple trips from/to the Site during the day. The Site also occasionally provides hydrovacating services outside typical operating hours (e.g., after hours and weekends). The Site operates for 50 weeks per year.

## 2.3 Truck Traffic

Traffic to and from the Site uses the access road from the entrance at Wellington Road 34 from near-by streets including Highway 401. All vehicles enter the Property from Wellington Road 34 onto the haul road and proceed directly to the Site. The traffic associated with the operations is not expected to increase from current operations which has 25 hydrovac trucks and personal vehicles of truck drivers and Site personnel.

## 2.4 Service Area/Waste Accepted

The hydrovac trucks work throughout southern Ontario where liquid soil is collected from utility, municipal and commercial sites to ensure that utility strikes and damage do not occur during intrusive work (e.g., utility and roadwork). No hydrovacating is done at environmental or other sites with known soil impacts. Liquid soil loads that may be impacted (e.g., determined by Site information, visual inspection and odours) are not returned to the Site and are sent directly to a MECP permitted treatment or disposal facility.

## 2.5 Receiving and Storage

The Applicant receives a maximum of 250 tonnes of liquid soil per day which is comprised of approximately 150 tonnes of water and 100 tonnes of dry soil. The Site has no more than ten weeks of dry soil stored at the Site at any one time (5,000 tonnes). The soil is placed in stockpiles for drying and sampling and some aggregate is separated out for recycling.

## 2.6 Water Sampling

### 2.6.1 Surface Water Sampling

The Applicant has conducted pond surface water sampling on a weekly basis since 2014. In May 2020, an expanded parameter list was started. From January 2017 to November 2020, 88 surface water samples were collected. The

sampling results for 2020 (May to November 2020) are provided in Table 1 and are representative of the entire data set. The analytical data are compared to the Table 2 Potable Standards<sup>1</sup> as pond water infiltrates to groundwater and groundwater is used for potable use in the area of the Site, and all samples met the Standards.

There are two active water wells (livestock well and Site supply well) on the Property. One well is located on the Agriculture zoned portion of the property and the other is within the Site operations area (Extraction zoned). The Applicant has conducted groundwater well sampling since 2014. The sampling results for 2020 are provided in Table 2A (Agricultural Well) and Table 2B (Site Well), respectively and are representative of the entire data set. The analytical data are compared to the Table 2 Standards<sup>1</sup> and the results met the Standards.

In response to a request from MECP a Hydrogeological Impact Assessment (HIA) was completed for the Site. The HIA provides a comprehensive review of hydrogeological conditions in the area of the Site and concludes that there are no impacts to groundwater resources from Site operations. As part of the HIA, three new groundwater monitoring wells were installed and sampled. The HIA report is provided in Appendix B. The HIA demonstrates that there are no impacts to groundwater resources from the Site operations and a monitoring and reporting program also is included to provide ongoing demonstration of these conditions. MECP completed a technical review of the HIA report and concurred with the report conclusions. MECP's review also suggested that additional monitoring parameters and an increased frequency for the proposed groundwater monitoring program, including reporting be provided. A copy of the MECP's review and the Applicant/GHD's response which concurs with the proposed monitoring program changes are provided in Appendix C.

## 3. Existing Site Conditions

The majority of the surface cover is woodlots, vegetation and grass. The operational Site surface cover is aggregate covered road and parking areas, bare soil and grass. The gravity water drainage from the soil stockpiles is collected in a vegetated drainage swale which runs east west and drains into an on Site-pond. The pond does not have an outlet and water is lost through evapotranspiration or infiltrates to soil and groundwater.

The typical water volume generated from the hydrovac truck is 60% of the total load (conservative maximum amount of 150 tons per day or 35,000 liters per day). This is a conservative maximum volume since all trucks do not run every day and many of the returned loads are not full trucks due to the nature of hydrovac operations.

### 3.1 Existing Site Drainage

The existing conditions drainage patterns and the SWM features are shown on Figure 3 consist of a vegetated swale and SWM pond.

The eastern portion of the Site (Catchment A101, discharges overland towards the vegetated swale, and runoff is conveyed to the SWM pond. Catchment A102 is also captured by the vegetated swale and conveyed to the SWM pond. The remaining area, Catchment A103, discharges directly via sheet flow into the SWM pond. The on-site SWM pond is considered to be a wet pond with normal water levels at approximately 309 m AMSL as shown on Drawing C-01. There are no direct point source discharges of stormwater or outfalls from the Site to off-site areas.

The Property drainage outside of the Site area is not connected to the Site drainage features. The majority of the Property drains via sheet flow either to a second pond (located in the northern area of the Property), or to lower lying areas of the Property. There are no direct point source discharges of stormwater or outfalls from the Property to off Site areas. There is some minor sheet flow runoff from the Property at the perimeter Property boundaries.

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<sup>1</sup> Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Coarse Textured Soils, as provided in the Table 1 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

## 3.2 Hydrologic Assessment

Existing conditions modelling was conducted using PCSWMM V7.3.3095 to estimate peak flows and runoff volumes and to assess the on-site stormwater features (vegetated swale and SWM pond). The 24-hour SCS Type II storms were simulated using PCSWMM model and the IDF values were obtained from MTO IDF curve lookup tool. The model was run for the 1:2 year through 1:100 year. Table 3 provides the synthetic design storm input parameters.

Catchment model input parameters were obtained from a review of topographic surveys, aerial photographs, and Site visit notes. A summary of the existing conditions catchment parameters are presented in Table 4 and are based on conditions as shown on Drawing C-01. A summary of the estimated peak flow and runoff volume from each catchment area is presented in Tables 5 and 6, respectively.

The PCSWMM model was used to assess the capacity of the on-Site swale and SWM pond. SWM pond information is presented in Table 7, including the maximum pond stage for each storm.

The PCSWMM hydrologic model input and output files for existing conditions is provided as Appendix D.

The hydrological modelling verifies that the on-site stormwater features have sufficient capacity to capture, convey and mitigate the stormwater runoff from the operational areas including additional areas served by the on-site stormwater features.

## 4. Inspection and Maintenance

The following proposed measures should be performed to monitor and maintain the on-site stormwater features:

- Inspect the vegetated swale regularly to check for sediment and/or debris accumulation. If there is a large amount of sediment and/or debris buildup, then perform maintenance.
- The SWM pond should be checked regularly to ensure that excessive sediment build up does not occur. The pond area should be cleaned on an as required basis. If erosion is present, the affected areas must be maintained, re graded or otherwise restored as required.
- Conduct yard inspection on a regular basis and perform maintenance as required to keep outside areas clean to minimize potential impacts to stormwater.

These inspection and maintenance activities are included in the Design and Operations Report for the Site submitted with the application for an ECA (Waste Processing).

## 5. Conclusions

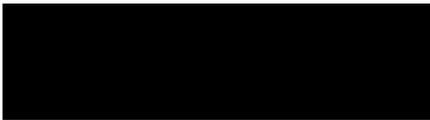
GHD has prepared this Stormwater Management Plan for 2374868 Ontario Inc. for the exiting Site servicing hydrovacating operations.

Note that no new works or modifications to the Site are proposed. Hence, Site drainage pattern and stormwater runoff are maintained. GHD's assessment of the operation of the existing sewage works is that no additional quantity or quality works are required. The on-site stormwater features provide water quality treatment accumulatively through a vegetated swale by promoting settling of suspended solids and infiltration of stormwater runoff via the SWM pond. In addition, the SWM pond has sufficient capacity to capture and store stormwater runoff generated by storm events larger than the 100 year from all contributing drainage areas.

All of Which is Respectfully Submitted,

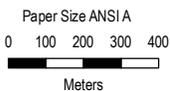
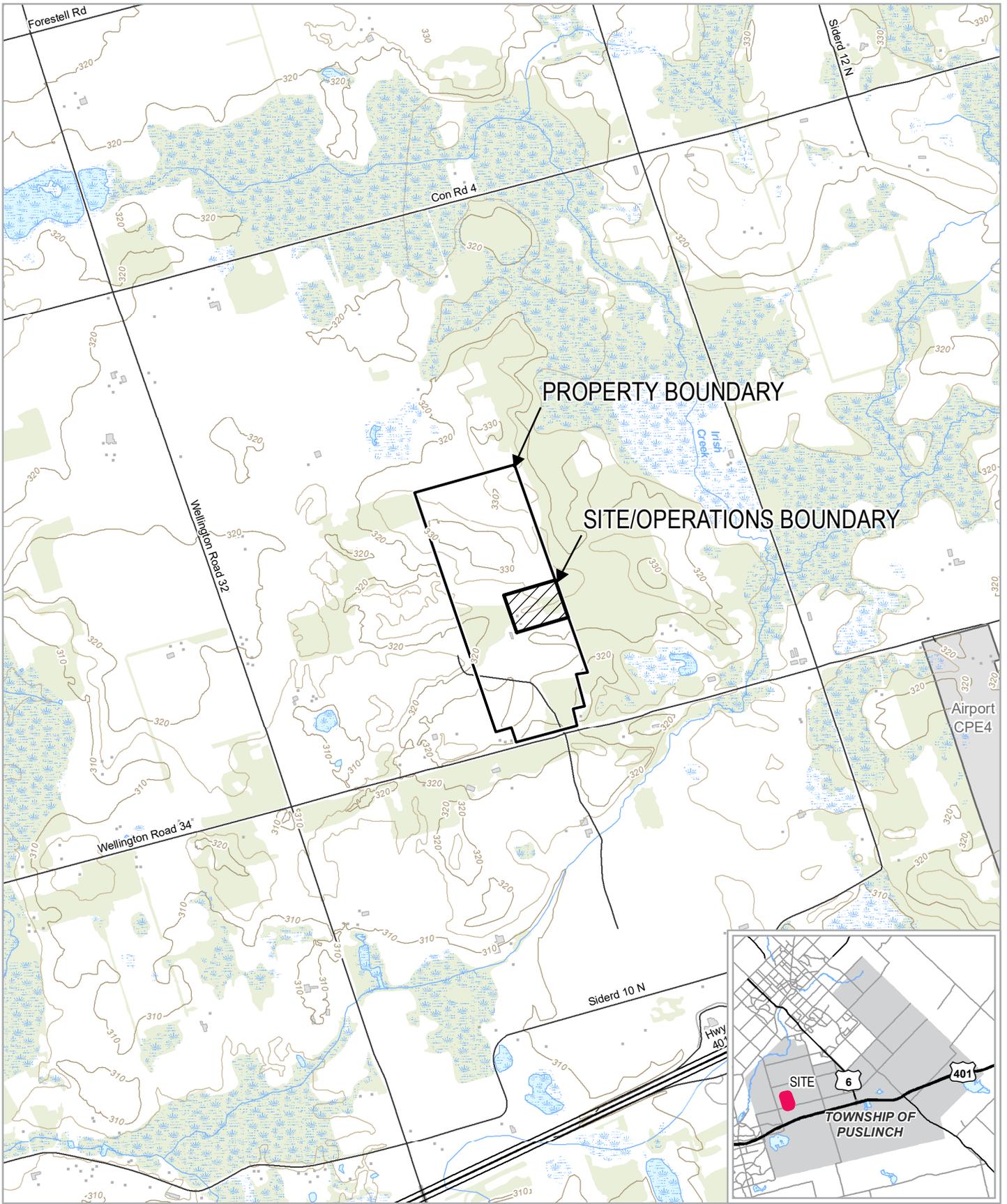


Janusz Czuj, P. Eng.



Nishant Patel, EIT

# Figures



Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983 CSRS  
 Grid: NAD 1983 CSRS UTM Zone 17N

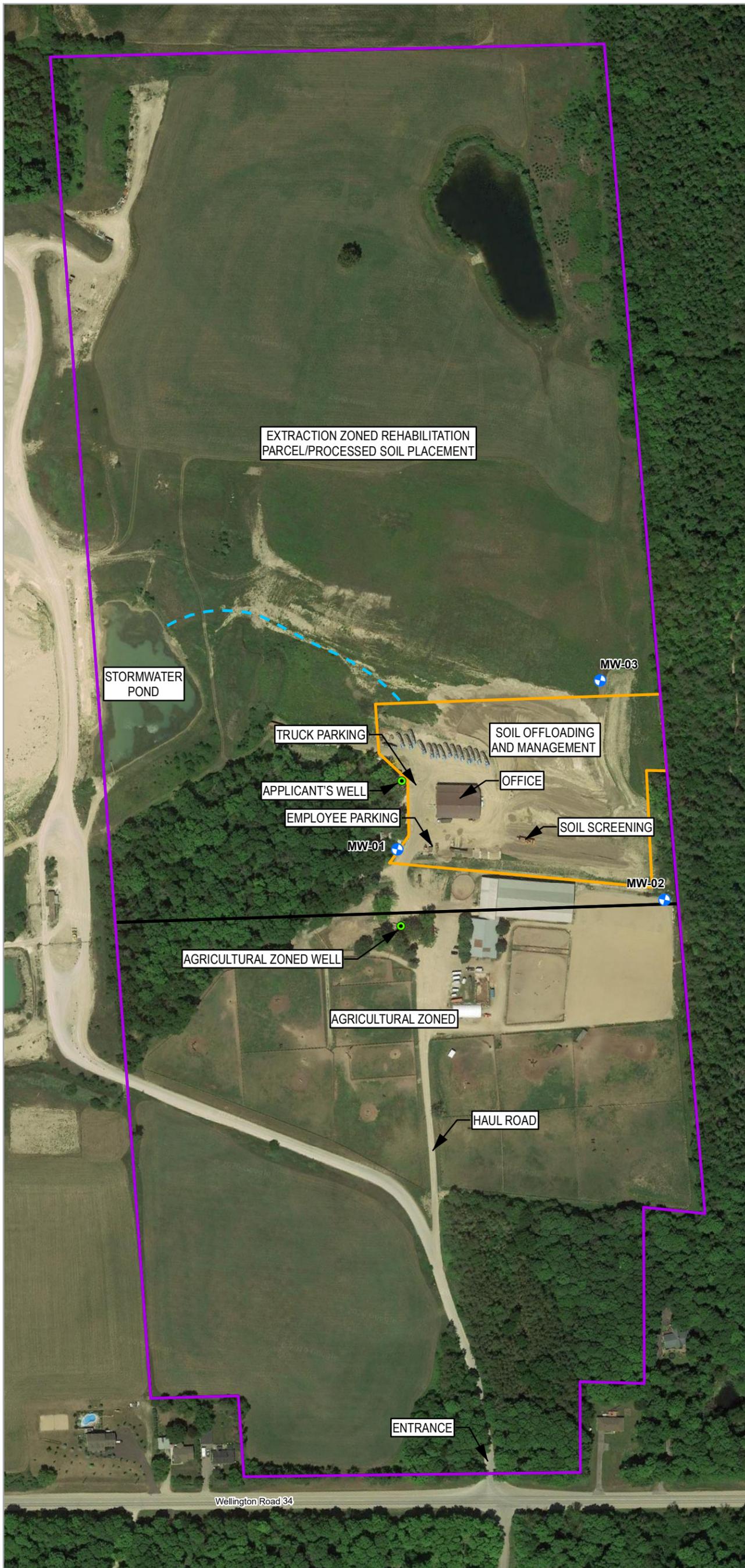
2374868 ONTARIO INC. 6678  
 WELLINGTON RD 34  
 TOWNSHIP OF PUSLINCH, ON

Project No. 11210029  
 Revision No. -  
 Date Oct 9, 2020

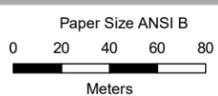
**SITE LOCATION MAP**

**FIGURE 1**

Data source: WWIS, 2020. Ontario Ministry of the Environment (Accessed August, 2020); Imagery Google 2020. Capture date: 7/Jul/2018



Legend	
	Well
	Monitoring Well
	Drainage Swale
	Site/Operations Boundary
	Property Boundary



Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983 CSRS  
Grid: NAD 1983 CSRS UTM Zone 17N

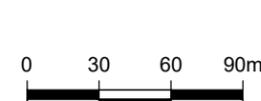
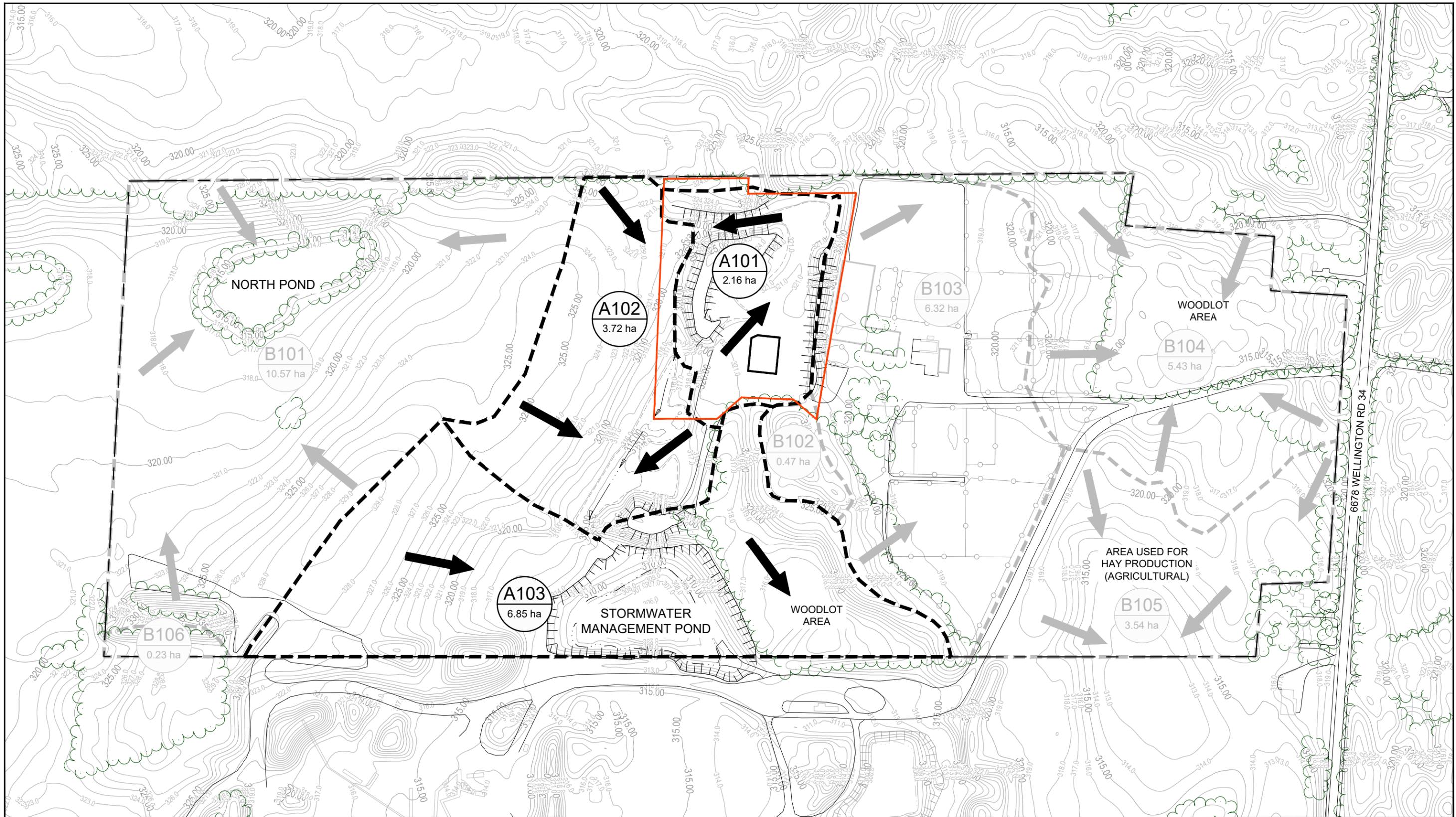


2374868 ONTARIO INC.  
6678 WELLINGTON RD 34  
TOWNSHIP OF PUSLINCH, ON

Project No. 11210029  
Revision No. -  
Date Feb 1, 2021

SITE LAYOUT

FIGURE 2



LEGEND	
	SITE OPERATION CATCHMENT BOUNDARY
	CATCHMENT BOUNDARY
	CATCHMENT ID CATCHMENT AREA
	PROPERTY BOUNDARY SITE/OPERATIONS BOUNDARY
	DIRECTION OF SURFACE WATER FLOW



2374868 ONTARIO INC.  
 STORMWATER MANAGEMENT PLAN  
 EXISTING CONDITIONS  
 CATCHMENT DELINEATION

11210029-01  
 Dec 17, 2020

FIGURE 3

# Tables





**Table 1**  
**Pond Surface Water Analytical Data (May to November 2020)**  
**Stormwater Management Plan**  
**2374868 Ontario Inc.**  
**Wellington County, Ontario**

Sample ID: Report No. Sample Date:	W-11210029-28052020-CD002	W-11210029-040620-AS-004	W-11210029-20200611-CD-006	W11210029-20200618-8	W-11210029-20200625-10	W-11210029-20200716-16	W-11210029-20200806-22	W-11210029-20200827-28	W-11210029-20200903-30	
	L2453062-1 May 28 2020	L2456339-1 June 4 2020	L2459298-1 June 11 2020	L2465490 June 18 2020	L2468205-1 June 25 2020	L2475470-1 July 16 2020	L2484852-1 August 6 2020	L2495218 August 27 2020	L2498566-1 September 3 2020	
<b>Table 2</b>	<b>PWQO/</b>									
<b>Standards<sup>2</sup></b>	<b>IPWQO<sup>3</sup></b>									
<b>2011</b>	<b>1999</b>	<b>Units</b>								
<b>Hydrocarbons (Water)</b>										
F1 (C6-C10)	750	µg/L	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100	<100	<100	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370	<370	<370	<370	<370	<370
<b>Semi-Volatile Organics (Water)</b>										
Biphenyl	0.5	0.2	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
4-Chloroaniline	10		µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	200	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)eth	120		µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2-Chlorophenol	8.9		µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	0.6	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-Dichlorophenol	20	0.2	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Diethylphthalate	38		µg/L	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethylphthalate	38		µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	8	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	10	µg/L	<1.0	<1.0	<1.0	<2.0	<2.0	<1.0	<1.0
2,4-Dinitrotoluene	5	4	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	6	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5		µg/L	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57
Bis(2-ethylhexyl)phthalat	10		µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Pentachlorophenol	30	0.5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Phenol	890	5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	70	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	18	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	18	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
<b>Polychlorinated Biphenyls (Water)</b>										
Aroclor 1242			µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1248			µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1254			µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1260			µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total PCBs	3	0.001	µg/L	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
<b>Aggregate Organics (Water)</b>										
BOD			µg/L	4100	<3000	<3000				
<b>Physical Tests (Water)</b>										
pH			pH units	8.23	8.46	8.16				
Total Suspended Solids			µg/L	12800	4600	22600				
<b>Anions and Nutrients (Water)</b>										
Phosphorus, Total			µg/L	36.5	25.7	51.6	35.4	4.5	7.0	7.0
<b>Organic / Inorganic Carbon (Water)</b>										
Total Organic Carbon			µg/L	5730	4830	7240				
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>										
Acenaphthene	4.1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	2.4		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01		µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	0.1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	0.2		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	0.41		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	120		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2		µg/L	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	3.2		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	3.2		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Naphthalene	11		µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

**Notes:**

- (1) Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.
- (2) Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.
- (3) PWQO=Provincial Water Quality Objective, MECP, February 1999  
IPWQO=Interim Provincial Water Quality Objective, MECP, February 1999
- (4) The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75
- (5) The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100
- (6) The IPWQO for lead is 0.005 mg/L when the hardness as CaCO3 (mg/L) is >80
- (\*) The PWQO is for Dissolved Metals
- No data or Standard available.
- ND Not detected at the associated detection limit (DL).
- µg/L microgram/liter
- cfu /ml colony forming units/milliliter
- Concentration greater than referenced 2011 Table 2 Criteria.

**Table 1**  
**Pond Surface Water Analytical Data (May to November 2020)**  
**Stormwater Management Plan**  
**2374868 Ontario Inc.**  
**Wellington County, Ontario**

Sample ID: Report No. Sample Date:	W-11210029-20200910-32	W-11210029-20200917-34	W-11210029-20200924-36	W-11210029-20201001-38	W-11210029-20201008-40	W-11210029-20201015-42	W-11210029-20201022-44	W-11210029-20201029-46	W-11210029-20201105- 48	W-11210029-20201112-50	W-11210029-20201119-52	W-11210029-20201126-54		
	L2501541-1 September 10 2020	L2504779-1 September 17 2020	L2507865-1 September 24 2020	L2511128-1 October 1 2020	L2514428-1 October 8 2020	L2517112-1 October 15 2020	L2520323-1 October 22 2020	L2523350-1 October 29 2020	L2526411-1 November 5 2020	L2528910-1 November 12 2020	L2531509-1 November 19 2020	L2534021-1 November 26 2020		
<b>Table 2</b>														
<b>Standards <sup>2</sup></b>														
<b>PWQO/ IPWQO <sup>3</sup></b>														
<b>2011</b>														
<b>1999</b>														
<b>Units</b>														
<b>Hydrocarbons (Water)</b>														
F1 (C6-C10)	750													
F1-BTEX														
F2 (C10-C16)	150													
F2-Naphth														
F3 (C16-C34)	500													
F3-PAH														
F4 (C34-C50)	500													
Total Hydrocarbons (C6-C50)														
<b>Semi-Volatile Organics (Water)</b>														
Biphenyl	0.5	0.2												
4-Chloroaniline	10													
Bis(2-chloroethyl)ether	5	200												
Bis(2-chloroisopropyl)eth	120													
2-Chlorophenol	8.9													
3,3'-Dichlorobenzidine	0.5	0.6												
2,4-Dichlorophenol	20	0.2												
Diethylphthalate	38													
Dimethylphthalate	38													
2,4-Dimethylphenol	59	8												
2,4-Dinitrophenol	10	10												
2,4-Dinitrotoluene	5	4												
2,6-Dinitrotoluene	5	6												
2,4+2,6-Dinitrotoluene	5													
Bis(2-ethylhexyl)phthalat	10													
Pentachlorophenol	30	0.5												
Phenol	890	5												
1,2,4-Trichlorobenzene	70	0.5												
2,4,5-Trichlorophenol	8.9	18												
2,4,6-Trichlorophenol	2	18												
<b>Polychlorinated Biphenyls (Water)</b>														
Aroclor 1242														
Aroclor 1248														
Aroclor 1254														
Aroclor 1260														
Total PCBs	3	0.001												
<b>Aggregate Organics (Water)</b>														
BOD														
<b>Physical Tests (Water)</b>														
pH														
Total Suspended Solids														
<b>Anions and Nutrients (Water)</b>														
Phosphorus, Total														
			48.8	4.6	<3.0	5.8	6.3	4.2	6.2	6.3	5.6	5.7	29.4	4.9
<b>Organic / Inorganic Carbon (Water)</b>														
Total Organic Carbon														
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>														
Acenaphthene	4.1													
Acenaphthylene	1													
Anthracene	2.4													
Benzo(a)anthracene	1													
Benzo(a)pyrene	0.01													
Benzo(b)fluoranthene	0.1													
Benzo(g,h,i)perylene	0.2													
Benzo(k)fluoranthene	0.1													
Chrysene	0.1													
Dibenzo(ah)anthracene	0.2													
Fluoranthene	0.41													
Fluorene	120													
Indeno(1,2,3-cd)pyrene	0.2													
1+2-Methylnaphthalenes	3.2													
1-Methylnaphthalene	3.2													
2-Methylnaphthalene	3.2													
Naphthalene	11													
Phenanthrene	1													
Pyrene	4.1													

Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water : monthly basis from January 2017 to December 2019.

Full Depth Generic Site Condition Standards in a Potable Ground Water Cor provided in the Table 2 of the MECP document entitled "Soil, Ground Water Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

PWQO=Provincial Water Quality Objective, MECP, February 1999  
 IPWQO=Interim Provincial Water Quality Objective, MECP, February 1999  
 The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is  
 The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is  
 The IPWQO for lead is 0.005 mg/L when the hardness as CaCO3 (mg/L) is :  
 The PWQO is for Dissolved Metals  
 No data or Standard available.  
 Not detected at the associated detection limit (DL).  
 microgram/liter  
 colony forming units/milliliter  
 concentration greater than referenced 2011 Table 2 Criteria.

**Summary of Water Supply A Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b>	<b>Water Supply A Zone</b>	<b>Water Supply A Zone</b>	<b>Water Supply A Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200702-12</b>	<b>W-11210029-20200723-18</b>	<b>W-11210029-20200813-24</b>
<b>Report No.</b>	<b>L2468705-1</b>	<b>L2478867-1</b>	<b>L2488954-1</b>
<b>Sample Date:</b>	<b>July 2 2020</b>	<b>July 23 2020</b>	<b>August 13 2020</b>

**Table 2  
Standards <sup>2</sup>**

	<b>2011</b>	<b>Units</b>			
<b>Metals</b>					
Aluminum	--	µg/L	<5.0	<5.0	19.2
Antimony	6	µg/L	<0.1	<0.1	<0.1
Arsenic	25	µg/L	5.17	2.24	3.64
Barium	1000	µg/L	49.5	50.6	77.9
Beryllium (4)	4	µg/L	<0.1	<0.1	<0.1
Bismuth	--	µg/L	<0.05	<0.05	<0.05
Boron (total)	5000	µg/L	<10.0	<10.0	14
Cadmium (5)	2.7	µg/L	<0.005	<0.005	<0.005
Calcium	--	µg/L	70600	68300	48500
Cesium	--	µg/L	<0.01	<0.01	<0.01
Chromium	50	µg/L	<0.5	<0.5	<0.5
Chromium, Hexavalent	25	µg/L	<0.5	<0.5	<0.5
Cobalt	3.8	µg/L	0.11	<0.1	<0.1
Copper	87	µg/L	<0.5	4	<0.5
Iron	--	µg/L	400	22	244
Lead (6)	10	µg/L	0.227	0.268	0.083
Lithium	--	µg/L	3.4	3.9	3.2
Magnesium	--	µg/L	32600	31800	25600
Manganese	--	µg/L	10.8	7.64	8.13
Mercury	0.29	µg/L	<0.005	<0.005	<0.005
Molybdenum	70	µg/L	0.559	0.632	0.655
Nickel	100	µg/L	1.7	0.86	<0.5
Phosphorus	--	µg/L	<50.0	<50.0	<50.0
Potassium	--	µg/L	978	996	979
Rubidium	--	µg/L	<0.2	0.21	0.35
Selenium	10	µg/L	<0.05	<0.05	<0.05
Silicon	--	µg/L	8890	9290	7300
Silver	1.5	µg/L	<0.05	<0.05	<0.05
Sodium	490000	µg/L	7790	7510	5750
Strontium	--	µg/L	148	146	348
Sulfur	--	µg/L	20200	20100	7710
Tellurium	--	µg/L	<0.2	<0.2	<0.2
Thallium	2.0	µg/L	<0.01	<0.01	<0.01
Thorium	--	µg/L	<0.1	<0.1	<0.1
Tin	--	µg/L	<0.1	<0.1	<0.1
Titanium	--	µg/L	<0.3	<0.3	0.62
Tungsten	--	µg/L	<0.1	<0.1	<0.1
Uranium	20.0	µg/L	0.252	0.296	0.383
Vanadium	6.2	µg/L	<0.5	<0.5	<0.5
Zinc	1100	µg/L	5.4	5.0	<3.0
Zirconium	--	µg/L	<0.2	<0.2	<0.2
Total Plate Count	--	cfu/mL			
E. coli	--	cfu/100 mL			

**Summary of Water Supply A Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b>	<b>Water Supply A Zone</b>	<b>Water Supply A Zone</b>	<b>Water Supply A Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200702-12</b>	<b>W-11210029-20200723-18</b>	<b>W-11210029-20200813-24</b>
<b>Report No.</b>	<b>L2468705-1</b>	<b>L2478867-1</b>	<b>L2488954-1</b>
<b>Sample Date:</b>	<b>July 2 2020</b>	<b>July 23 2020</b>	<b>August 13 2020</b>

**Table 2  
Standards <sup>2</sup>**

	<b>2011</b>	<b>Units</b>			
<b><u>Volatile Organic Compounds</u></b>					
Acetone	2700	µg/L	<30	<30	<30
Benzene	5	µg/L	<0.50	<0.50	<0.50
Bromodichloromethane	16	µg/L	<2.0	<2.0	<2.0
Bromoform	25	µg/L	<5.0	<5.0	<5.0
Bromomethane	0.89	µg/L	<0.50	<0.50	<0.50
Carbon tetrachloride	0.79	µg/L	<0.20	<0.20	<0.20
Chlorobenzene	30	µg/L	<0.50	<0.50	<0.50
Dibromochloromethane	25	µg/L	<2.0	<2.0	<2.0
Chloroform	2.4	µg/L	<1.0	<1.0	<1.0
1,2-Dibromoethane		µg/L	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	3	µg/L	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	59	µg/L	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	1	µg/L	<0.50	<0.50	<0.50
Dichlorodifluoromethane	590	µg/L	<2.0	<2.0	<2.0
1,1-Dichloroethane	5	µg/L	<0.50	<0.50	<0.50
1,2-Dichloroethane	1.6	µg/L	<0.50	<0.50	<0.50
1,1-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Methylene Chloride	50	µg/L	<5.0	<5.0	<5.0
1,2-Dichloropropane	5	µg/L	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	0.5	µg/L	<0.50	<0.50	<0.50
Ethylbenzene	2.4	µg/L	<0.50	<0.50	<0.50
n-Hexane	51	µg/L	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	1800	µg/L	<20	<20	<20
Methyl Isobutyl Ketone	640	µg/L	<20	<20	<20
MTBE	15	µg/L	<2.0	<2.0	<2.0
Styrene	5.4	µg/L	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	1.1	µg/L	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	1	µg/L	<0.50	<0.50	<0.50
Tetrachloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Toluene	24	µg/L	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	200	µg/L	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	4.7	µg/L	<0.50	<0.50	<0.50
Trichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Trichlorofluoromethane	150	µg/L	<5.0	<5.0	<5.0
Vinyl chloride	0.5	µg/L	<0.50	<0.50	<0.50
o-Xylene		µg/L	<0.30	<0.30	<0.30
m+p-Xylenes		µg/L	<0.40	<0.40	<0.40
Xylenes (Total)	300	µg/L	<0.50	<0.50	<0.50

**Summary of Water Supply A Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b> Water Supply A Zone	Water Supply A Zone	Water Supply A Zone
<b>Sample ID:</b> W-11210029-20200702-12	W-11210029-20200723-18	W-11210029-20200813-24
<b>Report No.:</b> L2468705-1	L2478867-1	L2488954-1
<b>Sample Date:</b> July 2 2020	July 23 2020	August 13 2020

**Table 2  
Standards <sup>2</sup>**

	2011	Units			
<b><u>Hydrocarbons</u></b>					
F1 (C6-C10)	750	µg/L	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370
<b><u>Semi-Volatile Organics</u></b>					
Biphenyl	0.5	µg/L	<0.40	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40	<0.40
2-Chlorophenol	8.9	µg/L	<0.30	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40	<0.40
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30	<0.30
Diethylphthalate	38	µg/L	<0.20	<0.20	<0.20
Dimethylphthalate	38	µg/L	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<2.0	<2.0	<2.0
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.57	<0.57	<0.57
Bis(2-ethylhexyl)phthalate	10	µg/L	<2.0	<2.0	<2.0
Pentachlorophenol	30	µg/L	<0.50	<0.50	<0.50
Phenol	890	µg/L	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20	<0.20
<b><u>Polychlorinated Biphenyls</u></b>					
Aroclor 1242		µg/L	<0.020	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020	<0.020
Total PCBs	3	µg/L	<0.040	<0.040	<0.040
<b><u>Aggregate Organics</u></b>					
BOD		µg/L			
<b><u>Physical Tests</u></b>					
pH		pH units			
Total Suspended Solids		µg/L			
<b><u>Anions and Nutrients</u></b>					
Phosphorus, Total		µg/L	5.6	<3.0	8.2
<b><u>Organic / Inorganic Carbon</u></b>					
Total Organic Carbon		µg/L			

**Summary of Water Supply A Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b>	<b>Water Supply A Zone</b>	<b>Water Supply A Zone</b>	<b>Water Supply A Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200702-12</b>	<b>W-11210029-20200723-18</b>	<b>W-11210029-20200813-24</b>
<b>Report No.</b>	<b>L2468705-1</b>	<b>L2478867-1</b>	<b>L2488954-1</b>
<b>Sample Date:</b>	<b>July 2 2020</b>	<b>July 23 2020</b>	<b>August 13 2020</b>

**Table 2  
Standards <sup>2</sup>**

	<b>2011</b>	<b>Units</b>			
<b><u>Polycyclic Aromatic Hydrocarbons</u></b>					
Acenaphthene	4.1	µg/L	<0.020	<0.020	<0.020
Acenaphthylene	1	µg/L	<0.020	<0.020	<0.020
Anthracene	2.4	µg/L	<0.020	<0.020	<0.020
Benzo(a)anthracene	1	µg/L	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01	µg/L	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2	µg/L	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020
Chrysene	0.1	µg/L	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	0.2	µg/L	<0.020	<0.020	<0.020
Fluoranthene	0.41	µg/L	<0.020	<0.020	<0.020
Fluorene	120	µg/L	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2	µg/L	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2	µg/L	<0.028	<0.028	<0.028
1-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020
2-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020
Naphthalene	11	µg/L	<0.050	<0.050	<0.050
Phenanthrene	1	µg/L	<0.020	<0.020	<0.020
Pyrene	4.1	µg/L	<0.020	<0.020	<0.020

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

**Summary of Water Supply EXI Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200709-14</b>	<b>W-11210029-20200730-20</b>	<b>W-11210029-20200813-26</b>
<b>Report No.:</b>	<b>L2472292-1</b>	<b>L2482453-1</b>	<b>L2491984</b>
<b>Sample Date:</b>	<b>July 9 2020</b>	<b>July 30 2020</b>	<b>August 20 2020</b>

**Table 2  
Standards<sup>2</sup>  
2011**

	<b>Units</b>			
<b>Metals</b>				
Aluminum	--	µg/L	6.6	8.0
Antimony	6	µg/L	<0.1	<0.1
Arsenic	25	µg/L	5.8	3.62
Barium	1000	µg/L	65.3	70.5
Beryllium (4)	4	µg/L	<0.1	<0.1
Bismuth	--	µg/L	<0.05	<0.05
Boron (total)	5000	µg/L	14	14.0
Cadmium (5)	2.7	µg/L	<0.005	<0.005
Calcium	--	µg/L	46600	47800
Cesium	--	µg/L	<0.01	<0.01
Chromium	50	µg/L	<0.5	<0.5
Chromium, Hexavalent	25	µg/L	<0.5	<0.5
Cobalt	3.8	µg/L	<0.1	<0.1
Copper	87	µg/L	<0.5	<0.5
Iron	--	µg/L	281	265
Lead (6)	10	µg/L	<0.05	<0.05
Lithium	--	µg/L	2.6	3.6
Magnesium	--	µg/L	27300	26600
Manganese	--	µg/L	9.31	7.61
Mercury	0.29	µg/L	<0.005	<0.005
Molybdenum	70	µg/L	0.703	0.668
Nickel	100	µg/L	<0.5	<0.5
Phosphorus	--	µg/L	<50.0	<50.0
Potassium	--	µg/L	995	991
Rubidium	--	µg/L	0.34	0.38
Selenium	10	µg/L	<0.05	<0.05
Silicon	--	µg/L	7600	7430
Silver	1.5	µg/L	<0.05	<0.05
Sodium	490000	µg/L	5880	5970
Strontium	--	µg/L	322	356
Sulfur	--	µg/L	7150	8040
Tellurium	--	µg/L	<0.2	<0.2
Thallium	2.0	µg/L	<0.01	<0.01
Thorium	--	µg/L	<0.1	<0.1
Tin	--	µg/L	<0.1	<0.1
Titanium	--	µg/L	<0.3	<0.3
Tungsten	--	µg/L	<0.1	<0.1
Uranium	20.0	µg/L	0.59	0.397
Vanadium	6.2	µg/L	<0.5	<0.5
Zinc	1100	µg/L	<3.0	<3.0
Zirconium	--	µg/L	<0.2	<0.2
Total Plate Count	--	cfu/mL		
E. coli	--	cfu/100 mL		

**Summary of Water Supply EXI Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200709-14</b>	<b>W-11210029-20200730-20</b>	<b>W-11210029-20200813-26</b>
<b>Report No.:</b>	<b>L2472292-1</b>	<b>L2482453-1</b>	<b>L2491984</b>
<b>Sample Date:</b>	<b>July 9 2020</b>	<b>July 30 2020</b>	<b>August 20 2020</b>

**Table 2  
Standards<sup>2</sup>  
2011**

		<b>Units</b>			
<b><u>Volatile Organic Compounds</u></b>					
Acetone	2700	µg/L	<30	<30	<30
Benzene	5	µg/L	<0.50	<0.50	<0.50
Bromodichloromethane	16	µg/L	<2.0	<2.0	<2.0
Bromoform	25	µg/L	<5.0	<5.0	<5.0
Bromomethane	0.89	µg/L	<0.50	<0.50	<0.50
Carbon tetrachloride	0.79	µg/L	<0.20	<0.20	<0.20
Chlorobenzene	30	µg/L	<0.50	<0.50	<0.50
Dibromochloromethane	25	µg/L	<2.0	<2.0	<2.0
Chloroform	2.4	µg/L	<1.0	<1.0	<1.0
1,2-Dibromoethane		µg/L	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	3	µg/L	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	59	µg/L	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	1	µg/L	<0.50	<0.50	<0.50
Dichlorodifluoromethane	590	µg/L	<2.0	<2.0	<2.0
1,1-Dichloroethane	5	µg/L	<0.50	<0.50	<0.50
1,2-Dichloroethane	1.6	µg/L	<0.50	<0.50	<0.50
1,1-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Methylene Chloride	50	µg/L	<5.0	<5.0	<5.0
1,2-Dichloropropane	5	µg/L	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	0.5	µg/L	<0.50	<0.50	<0.50
Ethylbenzene	2.4	µg/L	<0.50	<0.50	<0.50
n-Hexane	51	µg/L	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	1800	µg/L	<20	<20	<20
Methyl Isobutyl Ketone	640	µg/L	<20	<20	<20
MTBE	15	µg/L	<2.0	<2.0	<2.0
Styrene	5.4	µg/L	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	1.1	µg/L	<0.50	<0.50	<0.50
1,1,1,2,2-Tetrachloroethane	1	µg/L	<0.50	<0.50	<0.50
Tetrachloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Toluene	24	µg/L	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	200	µg/L	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	4.7	µg/L	<0.50	<0.50	<0.50
Trichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Trichlorofluoromethane	150	µg/L	<5.0	<5.0	<5.0
Vinyl chloride	0.5	µg/L	<0.50	<0.50	<0.50
o-Xylene		µg/L	<0.30	<0.30	<0.30
m+p-Xylenes		µg/L	<0.40	<0.40	<0.40
Xylenes (Total)	300	µg/L	<0.50	<0.50	<0.50

**Summary of Water Supply EXI Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200709-14</b>	<b>W-11210029-20200730-20</b>	<b>W-11210029-20200813-26</b>
<b>Report No.:</b>	<b>L2472292-1</b>	<b>L2482453-1</b>	<b>L2491984</b>
<b>Sample Date:</b>	<b>July 9 2020</b>	<b>July 30 2020</b>	<b>August 20 2020</b>

**Table 2  
Standards<sup>2</sup>  
2011**

	<b>Units</b>			
<b><u>Hydrocarbons</u></b>				
F1 (C6-C10)	750	µg/L	<25	<25
F1-BTEX		µg/L	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100
F2-Naphth		µg/L	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250
F3-PAH		µg/L	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370
<b><u>Semi-Volatile Organics</u></b>				
Biphenyl	0.5	µg/L	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40
2-Chlorophenol	8.9	µg/L	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30
Diethylphthalate	38	µg/L	<0.20	0.25
Dimethylphthalate	38	µg/L	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<2.0	<2.0
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.57	<0.57
Bis(2-ethylhexyl)phthalate	10	µg/L	<2.0	<2.0
Pentachlorophenol	30	µg/L	<0.50	<0.50
Phenol	890	µg/L	<0.50	<0.50
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20
<b><u>Polychlorinated Biphenyls</u></b>				
Aroclor 1242		µg/L	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020
Total PCBs	3	µg/L	<0.040	<0.040
<b><u>Aggregate Organics</u></b>				
BOD		µg/L		
<b><u>Physical Tests</u></b>				
pH		pH units		
Total Suspended Solids		µg/L		
<b><u>Anions and Nutrients</u></b>				
Phosphorus, Total		µg/L	<3.0	3.4
<b><u>Organic / Inorganic Carbon</u></b>				
Total Organic Carbon		µg/L		3.8

**Summary of Water Supply EXI Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b>	Water Supply EXI Zone	Water Supply EXI Zone	Water Supply EXI Zone
<b>Sample ID:</b>	W-11210029-20200709-14	W-11210029-20200730-20	W-11210029-20200813-26
<b>Report No.:</b>	L2472292-1	L2482453-1	L2491984
<b>Sample Date:</b>	July 9 2020	July 30 2020	August 20 2020

**Table 2  
Standards<sup>2</sup>  
2011                      Units**

**Polycyclic Aromatic Hydrocarbons**

Acenaphthene	4.1	µg/L	<0.020	<0.020	<0.020
Acenaphthylene	1	µg/L	<0.020	<0.020	<0.020
Anthracene	2.4	µg/L	<0.020	<0.020	<0.020
Benzo(a)anthracene	1	µg/L	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01	µg/L	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2	µg/L	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020
Chrysene	0.1	µg/L	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	0.2	µg/L	<0.020	<0.020	<0.020
Fluoranthene	0.41	µg/L	<0.020	<0.020	<0.020
Fluorene	120	µg/L	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2	µg/L	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2	µg/L	<0.028	<0.028	<0.028
1-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020
2-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020
Naphthalene	11	µg/L	<0.050	<0.050	<0.050
Phenanthrene	1	µg/L	<0.020	<0.020	<0.020
Pyrene	4.1	µg/L	<0.020	<0.020	<0.020

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

**Table 3**

**Design Storms - Intensity Duration Frequency Parameters  
Stormwater Management Plan  
2374868 Ontario Inc.  
Wellington County, Ontario**

<b>Return Period</b>	<b>Storm Type</b>	<b>Rainfall Depth 1 (mm)</b>	<b>Duration (hr)</b>
2-Year	SCS Type II	60.1	24
5-Year	SCS Type II	79.4	24
10-Year	SCS Type II	92.1	24
25-Year	SCS Type II	108.0	24
50-Year	SCS Type II	120.0	24
100-Year	SCS Type II	131.7	24

1. Rainfall depth obtained from the Ontario Ministry of Transportation, IDF Curve Lookup tool, Retrieved: December 15, 2020

Table 4

**Hydrologic Modelling Catchment Parameters - Existing Conditions**  
**Stormwater Management Plan**  
**2374868 Ontario Inc.**  
**Wellington County, Ontario**

**Existing Conditions**

Subcatchment ID	Area ha	Width m	Flow Length m	Slope %	Imperviousness %	Manning' n		Depression Storage		Infiltration (Horton)	
						Imperv. (-)	Perv. (-)	Imperv. mm	Perv. mm	Max (mm/hr)	Min (mm/hr)
A101	2.16	114	190	0.6	3.3	0.013	0.24	2.5	5.0	76.2	10.92
A102	3.72	248	150	4.4	0	0.013	0.24	2.5	5.0	76.2	10.92
A103	6.85	236	290	7.7	0	0.013	0.24	2.5	5.0	76.2	10.92
<b>Total</b>	<b>12.73</b>										

**Peak Flow Summary - Existing Conditions**  
**Stormwater Management Plan**  
**2374868 Ontario Inc.**  
**Wellington County, Ontario**

<b>Existing Conditions</b>	<b>Peak Flow</b>					
<b>Subcatchment ID</b>	<b>24 hour SCS Type II Storm</b>					
	<b>2-year</b>	<b>5-year</b>	<b>10-year</b>	<b>25-year</b>	<b>50-year</b>	<b>100-year</b>
	<i>(m<sup>3</sup>/s)</i>	<i>(m<sup>3</sup>/s)</i>	<i>(m<sup>3</sup>/s)</i>	<i>(m<sup>3</sup>/s)</i>	<i>(m<sup>3</sup>/s)</i>	<i>(m<sup>3</sup>/s)</i>
A101	0.03	0.06	0.09	0.13	0.15	0.19
A102	0.09	0.24	0.35	0.48	0.59	0.71
A103	0.11	0.32	0.47	0.66	0.82	1.00
<b>On-Site SWM Pond</b>	0.19	0.56	0.83	1.18	1.46	1.79

**Runoff Volume Summary - Existing Conditions  
Stormwater Management Plan  
2374868 Ontario Inc.  
Wellington County, Ontario**

<b>Existing Conditions</b>		<b>Runoff Volume</b>				
<b>Subcatchment ID</b>	<b>24 hour SCS Type II Storm</b>					
	<b>2-year</b>	<b>5-year</b>	<b>10-year</b>	<b>25-year</b>	<b>50-year</b>	<b>100-year</b>
	<i>(m<sup>3</sup>)</i>	<i>(m<sup>3</sup>)</i>	<i>(m<sup>3</sup>)</i>	<i>(m<sup>3</sup>)</i>	<i>(m<sup>3</sup>)</i>	<i>(m<sup>3</sup>)</i>
A101	80	210	320	470	580	710
A102	140	470	690	970	1190	1420
A103	210	750	1150	1650	2040	2470
<b>On-Site SWM Pond</b>	430	1430	2160	3090	3810	4600

Table 7

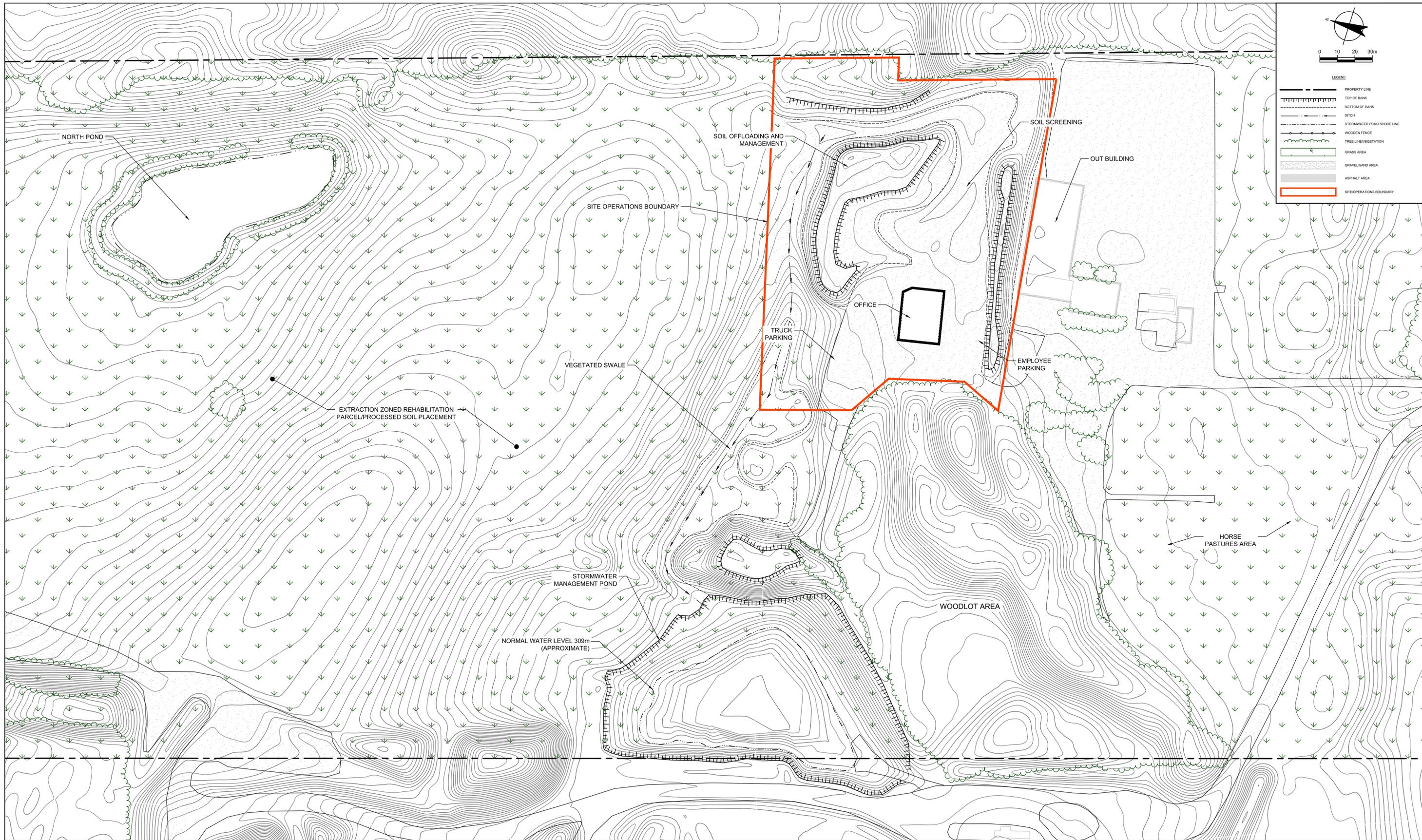
**Stormwater Management Pond Stage-Area-Volume - Existing Conditions  
Stormwater Management Plan  
2374868 Ontario Inc.  
Wellington County, Ontario**

**Stormwater Management Pond**

	<u>Elevation</u> <i>(m asl)</i>	<u>Depth</u> <i>(m)</i>	<u>Area</u> <i>(m<sup>2</sup>)</i>	<u>Total Volume</u> <i>(m<sup>3</sup>)</i>	<u>Storm Event Level</u> <i>(m asl)</i>
<b>Bottom of Pond</b>	306.00	0.00	558	-	<b>309.08</b> 2-year SCS Type II 24h storm
	306.25	0.25	1613	271	<b>309.24</b> 5-year SCS Type II 24h storm
	306.50	0.50	2054	730	<b>309.35</b> 10-year SCS Type II 24h storm
	306.75	0.75	2377	1,284	<b>309.49</b> 25-year SCS Type II 24h storm
	307.00	1.00	2680	1,916	<b>309.59</b> 50-year SCS Type II 24h storm
	307.25	1.25	2962	2,621	<b>309.69</b> 100-year SCS Type II 24h storm
	307.50	1.50	3228	3,395	
	307.75	1.75	3505	4,236	
	308.00	2.00	3797	5,149	
	308.25	2.25	4136	6,141	
	308.50	2.50	4540	7,225	
	308.75	2.75	5009	8,419	
	<b>Permanent Pool</b>	309.00	3.00	5543	9,738
309.25		3.25	6257	11,213	
309.50		3.50	7019	12,872	
309.75		3.75	7452	14,681	
310.00		4.00	7910	16,601	
310.25		4.25	8257	18,622	
310.50		4.50	8613	20,731	
310.75		4.75	8938	22,925	
311.00		5.00	9271	25,201	
311.25		5.25	9614	27,562	
311.50		5.50	9964	30,009	
311.75		5.75	10341	32,547	
312.00		6.00	10729	35,181	
312.25	6.25	11144	37,915		
312.50	6.50	11574	40,755		
<b>Top of Pond</b>	312.75	6.75	12369	43,748	

Total Storage (in cubic meters):	<b>43,748</b>
----------------------------------	---------------

# Drawings



1	ISSUED FOR PERMITTING	BS	DS	MAR 22, 2022
No.	Issue	Drawn	Approved	Date

MAP PROJECTION: TRANSVERSE MERCATOR  
 HORIZONTAL DATUM: NORTH AMERICAN 1983  
 GRID: NAD 1983 UTM ZONE 17N  
 TOPOGRAPHIC ELEVATION:  
 (NAD83 CSRS 2010 UTM: CGVD2013)

SOURCE BASE INFORMATION FROM ONTARIO MINISTRY OF AGRICULTURE, FOOD AND RURAL AFFAIRS (OMAFRA) LIDAR DTM 2018

Bar is 20mm on original size drawing  
 0 20mm

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Drafting Check	M. WOLFER	Design Check	D. SINGARAJA
Project Manager	A. SOUTAR	Date	3/22/2022
This document shall not be used for construction unless signed and sealed for construction.		Scale	1:1000

Client	2374868 ONTARIO INC.
Project	STORMWATER MANAGEMENT REPORT
Title	OPERATIONS EXISTING CONDITIONS SITE PLAN
Project No.	11210029-01
Original Size	ANSI D
Sheet No.	C-01
Sheet	1 of 1



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→ **The Power of Commitment**

# **Appendix E**

**Aggregate Resources Act (ARA)**

**Policy A.R. 6.00.03**

	<i>Subject:</i> <b>Importation of Inert Fill for the Purpose of Rehabilitation</b>	<i>Policy No.:</i> <b>A.R. 6.00.03</b>	<i>New:</i> <b>No</b>
<i>Compiled by – Branch:</i> <b>Lands &amp; Waters</b>	<i>Section:</i> <b>Aggregate &amp; Petroleum Resources</b>	<i>Date Revised:</i> <b>April 14, 2008</b>	

### **Guiding Principle**

***Historically, legislation has allowed the practice of importing inert material (e.g. topsoil, overburden) for the purpose of rehabilitation (i.e. to create required slopes), where there was insufficient topsoil/overburden existing on the site. This practice is allowed to continue, provided that the site plan allows its use. In situations where the site plan is silent (i.e. importation activity not specifically addressed), a minor site plan amendment is required to allow the activity to occur.***

### **Policy**

The management of inert fill to be brought onto a particular site is governed by Regulation 347 of the *Environmental Protection Act* (EPA), which defines inert as earth or rock fill or waste of a similar nature that contains no putrescible material or soluble or decomposable chemical substance. If the results from a bulk analysis meet the criteria in Table 1 of the Ministry of the Environment’s (MOE) “Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the *Environmental Protection Act*”, as amended, the material is considered as “inert fill”. This material may be used for sloping and/or backfilling purposes provided that the site plan allows its use. However, alternative criteria may be acceptable on a case-by-case basis with prior approval. If the material meets the definition of inert fill, no Certificate of Approval (C of A) is required from the MOE for disposing of the material.

For the purposes of pit/quarry rehabilitation, the soil quality standards for sodium adsorption ratio (SAR) and electrical conductivity (EC) specified in Tables 1, 2, and 3 under Part XV.1 of the EPA are intended to ensure good plant growth. Since plant growth is affected primarily by surface soil, the soil standards document does not include SAR and EC standards for subsurface soil (i.e. Tables 4 and 5 in the soil quality standards). Subsurface soil means soil that is more than 1.5 metres beneath the soil surface. Consequently, there is no need to apply the SAR and EC standards in Table 1, or any other table, for soil that is being deposited as a subsurface soil. The subsurface would be defined based on the final grade after rehabilitation.

**Note:** In situations where there is an existing condition on a site plan requiring the licensee/permittee to meet Table 1 criteria for imported fill being used for rehabilitation purposes, the licensee/permittee may request that the condition be modified to reflect the above discussion regarding SAR and EC criteria. The condition is to be modified through a minor site plan amendment to add Condition 2 in the Sample Wording for Site Plan Conditions (see below).

In 1990, the regulations under the ARA allowed the importation of material without requiring a site plan amendment where material was insufficient on the site. No further consent from the Ministry of Natural Resources was required. Consequently, many site plans remained silent on the importation of material. In 1997, the regulations were changed; this provision was removed and replaced by site plan standards within the Aggregate Resources of Ontario Provincial

Standards. Specifically, site plans for new applications must provide details regarding rehabilitation including whether inert material will be used to facilitate rehabilitation. For new applications, the operational plan must ensure, where possible, that sufficient materials are available on-site for rehabilitation and address how slopes and final elevations are to be achieved upon completion of extraction activities.

If the site plan does not address the importation of material and the licensee/permittee wishes to bring material on-site, provided that there is insufficient topsoil and/or overburden to create the necessary slopes as defined on the site plan, a minor amendment should be approved to allow this activity. The onus is on the licensee/permittee to demonstrate to MNR that material is lacking on the site to facilitate rehabilitation.

If the site plan has been approved to backfill the entire site or a portion of the site to the original grade, the licensee/permittee has the authority, provided that the material meets Table 1 (with the exceptions for SAR and EC criteria as described above) and proper monitoring or sampling of truck loads or the source occurs. However, alternative criteria may be acceptable on a case-by-case basis with prior approval.

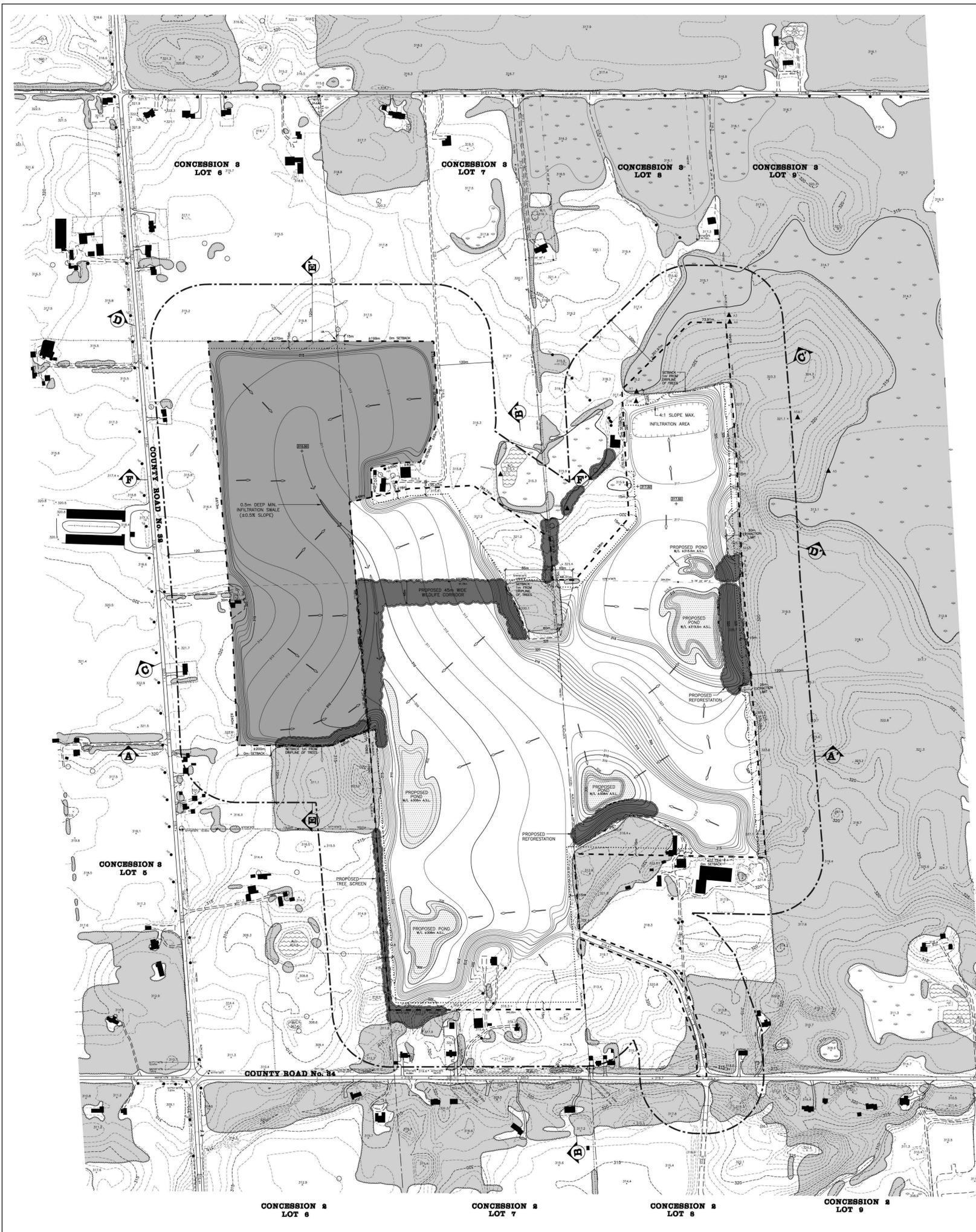
If a licensee/permittee has no prior approval and wishes to backfill the entire site or a portion of the site to the original grade, this change in rehabilitation should be processed as a major site plan amendment (see A.R. 2.03.00 and A.R. 4.04.00). The importation of material to facilitate rehabilitation must be described on the site plan.

#### **Sample Wording for Site Plan Conditions**

1. Clean inert fill (e.g. topsoil, overburden) may be imported to facilitate pit/quarry rehabilitation. Only sufficient material to create a 3:1 / 2:1 (horizontal: vertical) grade may be imported. At the request of MNR, the licensee/permittee will conduct random sampling of the imported material to ensure that it meets the Ministry of the Environment's (MOE) criteria under Table 1 of MOE's "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the *Environmental Protection Act*". Sampling results will be provided to MNR upon request.
2. Notwithstanding Condition 1, where the imported material is not being placed within 1.5 metres of the surface, the criteria under Table 1 for sodium adsorption ratio and electrical conductivity do not have to be met.

OR

3. Clean inert fill may be imported to facilitate the establishment of 3:1 / 2:1 (horizontal: vertical) slopes on the pit/quarry faces. The licensee/permittee must ensure that the material is tested at the source, before it is deposited on-site, to ensure that the material meets the Ministry of the Environment's (MOE) criteria under Table 1 of MOE's Soils, Ground Water and Sediment Standards for use under Part XV.1 of the *Environmental Protection Act*. Sampling results will be provided to MNR upon request.
4. Notwithstanding Condition 1, where the imported material is not being placed within 1.5 metres of the surface, the criteria under Table 1 for sodium adsorption ratio and electrical conductivity do not have to be met.



### LEGEND

- BOUNDARY OF EXISTING LICENCE AREA
- - - BOUNDARY OF LICENCE EXTENSION
- ..... REGULATORY SETBACK LINE
- LIMIT OF EXTRACTION
- 120m BOUNDARY LINE
- PROPERTY LINE
- CONCESSION/ LOT LINE

- [Symbol] EXISTING VEGETATION
- [Symbol] EXISTING SURFACE WATER
- [Symbol] 5m CONTOUR LINE
- [Symbol] 1m CONTOUR LINE
- [Symbol] SPOT ELEVATION
- [Symbol] PROPOSED 5m CONTOUR LINE
- [Symbol] PROPOSED 1m CONTOUR LINE
- [Symbol] PROPOSED SPOT ELEVATION
- [Symbol] PROPOSED VEGETATION
- [Symbol] PROPOSED POND
- [Symbol] BUILDING
- [Symbol] EXISTING HYDRO POLE
- [Symbol] RAILWAY
- [Symbol] GATE
- [Symbol] DIRECTION OF SURFACE WATER DRAINAGE
- [Symbol] SMALL STREAM, AGRICULTURAL DITCH/ SWALE
- [Symbol] FENCE
- [Symbol] PIZOMETER

### NOTES

- TOPOGRAPHIC INFORMATION WAS PREPARED THROUGH (AIR PHOTO INTERPRETATION BY PHOTOMAP AIR SURVEYS, LIMITED, ESTABLISHED ON DATED FEBRUARY 4, 1997, WITH GROUND CONTROL PROVIDED BY VAN HARTEN SURVEYING LTD. GEODESIC ELEVATIONS ARE REFERENCED TO THE CORNER OF COUNTY ROADS 34 AND 32. INFORMATION OBTAINED BY BASE MAPPING COMPANY APRIL, 2002 THROUGH AIR PHOTO INTERPRETATION (PHOTO LICENSE # 2002).
- REFER TO DRAWING 1 OF 5 FOR EXISTING FEATURES.  
REFER TO DRAWING 2 OF 5 FOR OPERATIONS PLAN, PHASING DIAGRAMS AND NOTES.  
REFER TO DRAWING 3 OF 5 FOR TECHNICAL RECOMMENDATIONS AND DETAILS.  
REFER TO DRAWING 4 OF 5 FOR SECTIONS.  
REFER TO DRAWING 5 OF 5 FOR REHABILITATION PLAN AND NOTES.
- REHABILITATION OF THE PROPERTY INCLUDES THE CREATION OF FOUR PONDS, FORESTED CORRIDORS, AGRICULTURAL LAND AND WILDLIFE HABITAT.
- AREA CALCULATIONS
 

	EXISTING LICENCE	LICENCE EXTENSION	TOTAL
AREA OF LICENCE TO BE REHABILITATED	168.16 Ha	227.59 Ha	395.75 Ha
AREA OF LICENCE TO BE REHABILITATED TO AGRICULTURAL LAND	155.81 Ha	227.59 Ha	383.40 Ha
AREA OF LICENCE TO BE REHABILITATED TO PONDS (PONDS NOT TO EXCEED 8.22 Ha)	4.75 Ha	-	4.75 Ha
AREA OF LICENCE TO BE REHABILITATED TO FORESTED CORRIDORS AND WILDLIFE HABITAT	7.70 Ha	10.32 Ha	18.02 Ha
THREE PLANTINGS OUTSIDE OF LICENCE BOUNDARIES	-	-	10.89 Ha
- REHABILITATION OF SLOPES SHALL BE BY USING OVERBURDEN AND TOPSOIL FROM WITHIN THE LICENCED BOUNDARY. OVERBURDEN ON SIDE SLOPES AND RECREATIONAL AREAS SHALL BE A MINIMUM OF 200mm THICK AND TOPSOIL SHALL BE A MINIMUM OF 150mm THICK. SIDESLOPES AND RECREATIONAL AREAS SHALL BE SEEDING WITH THE FOLLOWING AT A RATE OF 125 KG/HA:
 

15% BUCKWHEAT	15% TALL FESCUE
10% ALFALFA	10% DREIFUNG RED FESCUE
15% WHITE CLOVER	15% PERENNIAL RYE
10% ANNUAL RYE	

 PLEASE REFER TO DRAWING 3 OF 5, DETAILS, FOR MORE INFORMATION ON BACKFILLING AND CREATION OF REHABILITATED SLOPES.
- AGRICULTURAL AREA MAY BE REHABILITATED AS FOLLOWS:
  - DEEP RIPPING TO ELIMINATE COMPACTION
  - SPREADING OVERBURDEN AND ROUGH GRADING
  - REMOVAL OF STONES LARGER THAN 100mm
  - SPREADING A MINIMUM OF 200mm OF TOPSOIL AND FINE GRAVING
  - UPON COMPLETION OF THE TOPSOIL INSTALLATION AND FINE GRADING THE LAND OWNER SHALL SEED AREAS TO A CROP APPROPRIATE TO THEIR INDIVIDUAL AGRICULTURAL OPERATIONS.
  - TOPSOIL OR OVERBURDEN (SERT MATERIAL) MAY BE IMPORTED TO IMPROVE REHABILITATION BY AUGMENTING TOPSOIL THICKNESS OR BY MAKING SIDE SLOPES GENTLER
- REHABILITATION OF PONDS SHALL INCLUDE SHALLOW AREAS FOR WEED GROWTH AND PRODUCTIVITY, AND DEEP CELLS TO CREATE COLD WATER ZONES. UNDERWATER HABITAT ENHANCEMENT WILL USE LOGS, STUMPS, AND WASTE ROCK. REFER TO SHORELINE HABITAT DETAIL DRAWING 3 OF 5, DETAILS. THE PONDS WILL BE SEEDING WITH SUBMERGED AND EMERGENT VEGETATION IN SHALLOW AREAS.
- ALL SURFACE DRAINAGE WILL BE DIRECTED TOWARDS THE PONDS OR INFILTRATION AREAS, THERE WILL BE NO OFFSITE SURFACE DRAINAGE.
- THE FOLLOWING VEGETATION WILL BE PLANTED ON SIDE SLOPES:
  - WOODY VEGETATION: PLANTED IN CLUSTERS AS SHOWN SHALL INCLUDE:
    - 3 YEAR OLD SEEDLINGS - WHITE PINE, RED PINE, WHITE CEDAR & LARCH
    - 10mm CALIPER, #1.5m HIGH - BALSAM POPLAR, BLACK ASH, SILVER MAPLE, WILLOW & BLACK CHERRY
    - 3 YEAR OLD PLANTS, SPACED AT 2.1m (7ft) O.C. - DOORWOOD, SLMAC AND ALDER
  - WEEDBEDS/EMERGENT VEGETATION: -SEEDING WITHIN THE SHALLOW ZONE (0 TO 0.5m DEEP)
    - NARROWLEAF CATALPA, SWEET FLAG AND NORTHERN ARROWHEAD.
  - SUBMERGED VEGETATION: -SEEDING WITHIN THE DEEP WATER ZONE (0.5 TO 1.0m DEEP)
    - NORTHERN WATERLILY, COYNEA AND BLUNTLEAF PONDWEED.
- ALL VEGETATION PLANTED DURING THE OPERATION OF THIS LICENCE WILL BE MAINTAINED IN A HEALTHY VIGOROUS GROWING CONDITION. DEAD PLANTS WITHIN THE TREE SCREEN WILL BE REPLACED WITHIN TWO YEARS. PLANT SPECIES AND SPACING ARE SUBJECT TO MODIFICATION DUE TO AVAILABILITY AND SITE CONDITIONS.
- ALL BUILDINGS, EQUIPMENT AND MACHINERY ASSOCIATED WITH THE EXTRACTION OPERATIONS WILL BE REMOVED UPON COMPLETION OF EXTRACTION. RESIDENTIAL AND FARM BUILDINGS AND FARMING EQUIPMENT WILL REMAIN.
- A PIZOMETER SHALL BE INSTALLED DURING PHASE "A" OPERATIONS (AS SHOWN) AT ±319m a.s.l. FINAL REHABILITATED GRADE IN THE ADJACENT EXTRACTION AREA SHALL BE A MINIMUM OF 0.5m ABOVE THE ESTABLISHED WATER TABLE (EXTRACTION AREA).
- IT IS ANTICIPATED THAT THE PIZOMETER ELEVATIONS ACROSS THE EXISTING LICENCE AND CONCESSION AREA WILL REMAIN RELATIVELY UNCHANGED. INFORMATION WAS OBTAINED FROM HYDROLOGICAL ASSESSMENTS COMPLETED BY TERRACON INVESTIGATIONS DATED AUGUST 1997, MAY 4, 1998 AND MAY 20, 1998 AND BY BLACKBURN HYDROLOGIST INC. DECEMBER 2002.

NO.	DATE	REVISIONS	OWNER	H.A.	D.M.A.K.	NO.	DATE	REVISIONS	OWNER	H.A.	D.M.A.K.
2.	MAR. '03	AS PER OWNER COMMENTS									
1.	FEB. '03	AS PER OWNER COMMENTS									

**Pre Licence Review**      **Site Plan Amendments**

**Harrington and Hoyle Ltd.**  
 LANDSCAPE ARCHITECTS  
 81 Anderson Avenue, Unit #2  
 Markham, Ontario, L6E 1A5  
 Telephone: (905) 294-8282  
 Fax: (905) 294-7823  
 Office in Markham and Cambridge

**Project Name**  
**CAPITAL CAPITAL PAVING INC.**  
**Lingington Pit #5 and Extension**  
**Licence Number 20085**  
 PART LOTS 6, 7 & 8, CONCESSION 8  
 TOWNSHIP OF PUSLINC, WELLINGTON COUNTY

**Scale** 1:3000  
 0 10 20 30 40 50 60 70 80 90 100 120m

**Drawing Status**  
**PRELIMINARY FOR DISCUSSION**

**Drawn** Checked Issue Date Project Number  
**R.M. G.D.H./ B.J.**                **02-08**

**Drawing Title**      **Drawing Number**  
**REHABILITATION PLAN**      **5 OF 5**

PLOT DATE: MARCH 20, 2003  
 FILE NAME: 02-08-COMP-0000-5.DWG

# **Appendix F**

## **Tracking Record Form**







# **Appendix G**

**Inspection and Maintenance Form**

**WEEKLY INSPECTION FORM**  
**SOIL AND SURFACE WATER MANAGEMENT**  
**PLAN 2374868 Ontario Inc**  
**6678 Wellington Road 34, Cambridge, Ontario**

**Inspection Date/Time:**

**Weather:**  
**Site Conditions:**

	Item	Condition Acceptable (Y/N)?	Corrective Action Required (Y/N)?	Comments and Corrective Action (What, Date, Time)
<b>General</b>				
1.	Site Security - Any trespasses; Cameras in good working order?			
2.	Site - Roadways, parking areas, and swales are adequately stabilized and soil or debris has not accumulated?			
3.	Site Nuisances - Wind blown litter at a minimum, no odour or dust concerns, mud not tracked onto public roads, no issues with vector and vermin?			
<b>Soil Stockpile Areas</b>				
4.	Stockpiled materials are managed to prevent significant erosion and sediment runoff?			
5.	Stockpiles are separated to allow sampling?			
<b>Surface Water &amp; Drainage</b>				
6.	Surface water is controlled and drains into applicable pond or swales (i.e., no overflow to other areas of the Site)? If not, explain:			
7.	Vegetative swales and pond are in good condition, no significant erosion and no significant build up of sediment or debris? If not, explain:			
8.	There are no signs of petroleum or chemical sheens, spills, or releases on surface water? If evidence, explain and report immediately:			
<b>Noise</b>				
9.	No major issues?			
<b>Dust</b>				
10.	No major issues?			

**Inspection completed by:**

**Signature:**

**Title:**

# **Appendix H**

**Training Form**



# **Appendix I**

## **Environmental Emergency and Contingency Plan**

# Environmental Emergency and Contingency Plan

## 2374868 Ontario Inc.

### 1. Environmental Emergency and Contingency Plan

Environmental Emergency and Contingency Plan (E2C) outlines the prevention of, preparedness for, response to, and recovery from an environmental emergency. The E2C Plan will be described in this section of the report. A copy of this report will be provided to the local municipality and the local fire department.

The E2C Plan contains a notification protocol with names and telephone numbers of person to be contacted, including persons responsible for the Site, the MECP's District Office and Spills Action Centre, the local municipal Fire Department, the local Municipality, the local Medical Officer of Health, and the Ministry of Labour. Their associated phone numbers are as follows:

Fire, Police, Ambulance	911 or 0
Owner of Facility, Frank Ertl	519 658 5023
MECP Spills Action Centre (SAC)	1 800 268 6060
Municipality of Waterloo	519 575 4400
Medical Officer of Health- Public Health Waterloo	519 575 4608
Ministry of Labour	416 326 7600

The E2C Plan will also provide an organized set of procedures for responding to unexpected Site Conditions.

Operators working at the site have a cellular phone to use in the event of an emergency. There is an air horn located on site, which would be used to signal an emergency to staff.

#### 1.1 Spills

As per the above, the Facility will accept only hydrovac liquid soil. If liquid soil is inadvertently released at the Site outside of the Soil Management Area, then the material is vacuumed up and/or excavated and placed in the Soil Management Area.

Vehicle and earth moving equipment may occasionally have fuel and oil spills. These types of spills are expected to be infrequent, involve only small quantities and be readily contained and cleaned up. Fuel and oil material spills, upsets, and fires should be reported to the MECP's Spill Action Centre or local Fire Department.

A spill kit will be available on site at all time. It will be located in an area accessible to all staff members. The spill kits in the building will be inspected as part of the monthly health and safety inspection. Missing, lost, or used kits will be replaced.

All hydrovac trucks also are equipped with spill kits. A spill kit is available and is located in an area accessible to all staff. The spill kit will be regularly inspected and missing, lost or used kits will be replaced.

## **1.2 Fire**

The building is primarily constructed of concrete and steel materials.

Fire extinguishers will be located at each corner of the building and on every piece of mobile equipment. Fire extinguishers are inspected monthly and recharged annually in accordance with the Ontario Building Code. If a fire in the building cannot be easily extinguished with the available fire extinguishers, the building will be evacuated, and the fire department notified.

The burning of any material at the Site is prohibited. Facility employees will recognize fires by detecting elevated temperatures, smoke, smell and/or open flame. In case of fire the following steps will be taken:

- Move to an isolated area or muster point
- Call 911 or 0
- Sound the fire alarm and attempt to shut down any equipment if possible, to do safety
- Provide First Aid as needed
- Attempt to extinguish the fire if possible, to do safety

## **1.3 Severe Storms**

Severe storms may include intense rainfall, extreme winds, electrical storms, or large snowfalls. Before and during such events, Site operations will be planned to be reduced or cease and personnel will take shelter if the storm is severe enough to cause unsafe conditions.

During storm events employees will stop work if they cannot work safely. Management will advise of additional actions and when it is safe to work again.

## **1.4 Medical Emergencies**

Personnel injury could occur at the Facility. If there is an emergency, first aid will be given onsite by trained staff and the employee transported to a clinic or hospital. An Ambulance can be called at 911.

## **1.5 Closure of Waste Disposal Sites**

Waste that does not meet the criteria of the Site will be directly sent to a licensed MECP disposal or treatment facility. If the designated waste disposal facility is closed, the Facility will make alternate arrangements with another licensed MECP disposal or treatment facility. If an alternate disposal option cannot be found, the material will be offloaded at the job site.

Material that does not meet Table 1 that is currently found on Site will also to a licensed MECP disposal or treatment facility. If the designated facility is closed, the material will remain on Site until the disposal facility is open or an alternate licenses MECP disposal facility will be found.

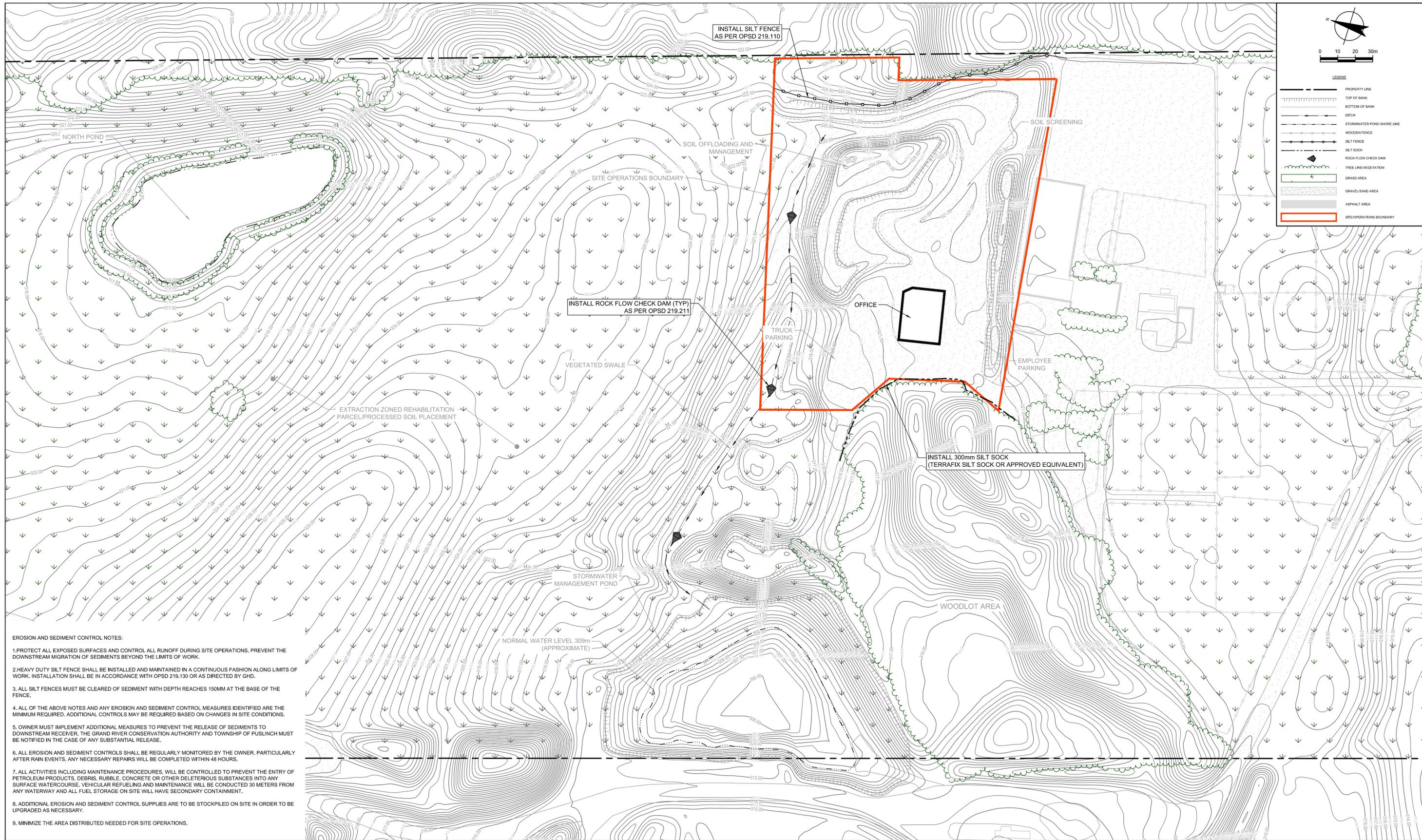
# **Appendix J**

## **Complaint Procedure Form**

Complaint Procedure Form  
2374868 Ontario Inc.  
6678 Wellington Road 34, Cambridge, Ontario

<b><u>Complainant Information</u></b>	
Date & Time	
Name	
Address	
E-mail	
Phone Number	
<b><u>Complaint Information</u></b>	
Date & Time	
Location	
Complaint Taken By	
Issue or Incident	
Description of Incident	
Corrective Action	





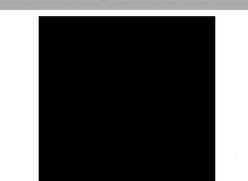
- EROSION AND SEDIMENT CONTROL NOTES:**
1. PROTECT ALL EXPOSED SURFACES AND CONTROL ALL RUNOFF DURING SITE OPERATIONS. PREVENT THE DOWNSTREAM MIGRATION OF SEDIMENTS BEYOND THE LIMITS OF WORK.
  2. HEAVY DUTY SILT FENCE SHALL BE INSTALLED AND MAINTAINED IN A CONTINUOUS FASHION ALONG LIMITS OF WORK. INSTALLATION SHALL BE IN ACCORDANCE WITH OPSD 219.130 OR AS DIRECTED BY GHD.
  3. ALL SILT FENCES MUST BE CLEARED OF SEDIMENT WITH DEPTH REACHES 150MM AT THE BASE OF THE FENCE.
  4. ALL OF THE ABOVE NOTES AND ANY EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED ARE THE MINIMUM REQUIRED. ADDITIONAL CONTROLS MAY BE REQUIRED BASED ON CHANGES IN SITE CONDITIONS.
  5. OWNER MUST IMPLEMENT ADDITIONAL MEASURES TO PREVENT THE RELEASE OF SEDIMENTS TO DOWNSTREAM RECEIVER. THE GRAND RIVER CONSERVATION AUTHORITY AND TOWNSHIP OF PUSLINCH MUST BE NOTIFIED IN THE CASE OF ANY SUBSTANTIAL RELEASE.
  6. ALL EROSION AND SEDIMENT CONTROLS SHALL BE REGULARLY MONITORED BY THE OWNER, PARTICULARLY AFTER RAIN EVENTS. ANY NECESSARY REPAIRS WILL BE COMPLETED WITHIN 48 HOURS.
  7. ALL ACTIVITIES INCLUDING MAINTENANCE PROCEDURES, WILL BE CONTROLLED TO PREVENT THE ENTRY OF PETROLEUM PRODUCTS, DEBRIS, RUBBLE, CONCRETE OR OTHER DELETERIOUS SUBSTANCES INTO ANY SURFACE WATERCOURSE. VEHICULAR REFUELING AND MAINTENANCE WILL BE CONDUCTED 30 METERS FROM ANY WATERWAY AND ALL FUEL STORAGE ON SITE WILL HAVE SECONDARY CONTAINMENT.
  8. ADDITIONAL EROSION AND SEDIMENT CONTROL SUPPLIES ARE TO BE STOCKPILED ON SITE IN ORDER TO BE UPGRADED AS NECESSARY.
  9. MINIMIZE THE AREA DISTRIBUTED NEEDED FOR SITE OPERATIONS.

No.	Issue	Drawn	Approved	Date
1	ISSUED FOR PERMIT	B.S.	F.K.T.	2021-12-13

--	--	--	--	--

Bar is 20mm on original size drawing  
0 20mm

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Project Manager	A. SOUTAR	Date	Dec 13, 2021
This document shall not be used for construction unless signed and sealed for construction.		Scale	

Client	2374868 ONTARIO INC.
Project	STORMWATER MANAGEMENT REPORT
Title	EROSION AND SEDIMENT CONTROL PLAN
Project No.	11210029-01
Original Size	ANSI D
Sheet No.	C-02
Sheet	1 of 1



# **Environmental Impact Assessment – Zoning By-Law Amendment**

**6678 Wellington Rd. 34  
Township of Puslinch**

2374868 Ontario Inc.

9 May 2022

**→ The Power of Commitment**



<b>Project name</b>		2374868 Ont Inc-Permitting					
<b>Document title</b>		Environmental Impact Assessment – Zoning By-Law Amendment   6678 Wellington Rd. 34 Township of Puslinch					
<b>Project number</b>		11210029					
<b>File name</b>		Document1					
<b>Status Code</b>	<b>Revision</b>	<b>Author</b>	<b>Reviewer</b>		<b>Approved for issue</b>		
			<b>Name</b>	<b>Signature</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
S4	01	Leah Wright Zenkovich/ Katherine Ryan	Laura Lawlor		Fred Taylor		05/09/20 22

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# Executive Summary

GHD Limited was retained to complete an Environmental Impact Assessment (EIA) as part of the requirements for a Zoning By-law Amendment Application for the northern portion of a property located at 6678 Wellington Rd. 34 within the Township of Puslinch, County of Wellington. The Subject Lands encompasses the northern portion of the property within the Extractive Industrial zoned area.

The Subject Lands are rectangular in shape and the Study Area is defined as the Subject Lands and lands within 120 meters. The Subject Lands are currently used for the beneficial reuse of imported inert (meet Table 1 Background Standards) soils as part of the permitted rehabilitation activities for a former aggregate pit.

The Study Area contains the Wellington County Greenlands (Schedule A7: Wellington County Official Plan, 2021). The confirmation of the status of the woodland and the functions regarding the woodland and Greenlands is important to verify. The Study Area is also within the Paris Galt Moraine Policy Area and is subject to the Growth Plan for the Greater Golden Horseshoe. The Study Area contains portions of the Oil Well Bog Little Tract ANSI, with the closest Provincially Significant Wetland, Cranberry Oil Well Bog over 120-meter east of the Subject Lands.

An EIA is required as part of the supporting documentation for the proposed zoning by-law amendment as the property contains portions of the Wellington County Greenlands.

GHD biologists attended the Subject Lands on November 9<sup>th</sup>, 2021 & April 5<sup>th</sup>, 2022, to document vegetation and complete Ecological Land Classification (ELC), search for Species at Risk (SAR) and their habitats and confirm the presence or absence of Significant Wildlife Habitat. None of the bird species detected during GHD's area search for birds was considered significant on a national and provincial level. Candidate and Confirmed Significant Wildlife Habitat (Woodland Area Sensitive Bird Breeding Habitat (Candidate), Special Concern and rare wildlife species (Candidate), Deer winter congregation area (Confirmed), bat maternity colonies (Candidate) were identified within the Study Area. No federal, provincial, or regionally significant plant or wildlife species were identified on the Subject Lands. Additionally, no sensitive vegetation communities or provincially rare ecological communities were found in the Study Area.

Three areas within the Study Area were forested, classified in various types including deciduous, coniferous and mixed forest. The Greenlands system encompassed the woodlands to the east of the Subject Lands. Only the woodlands to the east and south were considered Significant woodlands based on the County of Wellington policies.

The land use will remain the same, as a hydrovac operation, with continued rehabilitation of the Subject Lands to agricultural use similar to the areas which have been already rehabilitated. No significant negative impacts are anticipated on the adjacent woodland and ANSI. The approved Rehabilitation Plan (**Appendix B**) includes use of imported soil for fill, grading and drainage, and vegetation planting in rehabilitated areas. The addition of trees also will enhance the woodlot and ANSI and provide additional protection to the PSW and ANSI while creating additional opportunity for wildlife.

The proposed zoning by-law amendment for the Subject Lands to include all of the hydro-vac operations will not result in significant negative impacts on the identified natural heritage features provided the mitigation outlined in Section 6.0 are implemented. GHD's recommendations have been made to address potential impacts to natural features and/or their functions.

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# 1. Introduction

## 1.1 Background

GHD Limited (GHD) has been retained to complete an Environmental Impact Assessment (EIA) as part of the requirements for a By-Law Amendment Application for the northern portion of the property located at 6678 Wellington Rd. 34 within the Township of Puslinch, County of Wellington, Ontario (Subject Lands) (**Figure 1**). This area is currently used for the beneficial reuse of imported inert (meet Table 1 Background Standards) soils as part of the permitted rehabilitation activities for the former aggregate pit.

The property owner currently has an agreement with Capital Paving to allow beneficial reuse of imported soils as part of the permitted rehabilitation activities for a former on-site aggregate pit. These soils are being brought to the Subject Lands by a hydrovac operation through 2374868 Ontario Incorporated. The Subject Lands are zoned as Extractive Industrial on the northern half within the associated Aggregate license area, according to the Township of Puslinch Zoning by-law No. 023-18 Schedule "A". The proposed use for the hydrovac services will require a zoning by-law amendment (to include Commercial use) to ensure proper compliance in land use for the current operation. The zoning by-law amendment is anticipated to be applied to the existing lands associated with the hydrovac operation.

The literature review identified the potential presence of Significant Wildlife Habitat (white-tailed deer wintering area), potential habitat of Species at Risk (birds, bats, other wildlife, butternut trees), Wellington County-Greenlands, Woodland, ANSI-Oil Well Bog Little Tract and Wildlife Corridor functions on or within 120 m of the property. An EIA is required as supporting documentation for the proposed zoning by-law amendment for compliance of the existing uses of the property as the property contains portions of the Wellington County Greenlands.

The Terms of Reference (TOR) completed in December 2021 and provided as **Appendix A**, proposed the inclusion of in-season breeding bird surveys and two-season vegetation surveys. Based on the results of the background screening, findings of the November 2021 and April 2022 site visits and limitations of "development" to re-zoning, these additional in-season surveys are no longer deemed necessary to evaluate potential impacts to the natural environment as a result of continued land use under a new zoning classification.

## 1.2 Location and Study Area

The Subject Lands encompass the northern portion of the property within the Extractive Industrial zoned area. The Subject Lands are rectangular in shape and identified on the north side of Wellington Rd. 34. The features identified in the Study Area included pasturelands and deciduous/mixed forest encompassing the eastern boundary. The central woodland overlapping the Subject Lands was a deciduous forest pocket of sugar maple and beech. Areas within the extraction lands are in a state of rehabilitation with areas of disturbed cultural meadow.

The adjacent property land use to the west is an operating aggregate extraction pit, to the north is agricultural land, to the east is forested land, and to the south are residential and agricultural lands. The Subject Lands, for purposes of this EIA will include the Extractive Industrial zoned area (EXI), northern half of the property, with the Study Area including the surrounding 120-meter adjacent lands (**Figure 2**).

## 1.3 Study Rationale

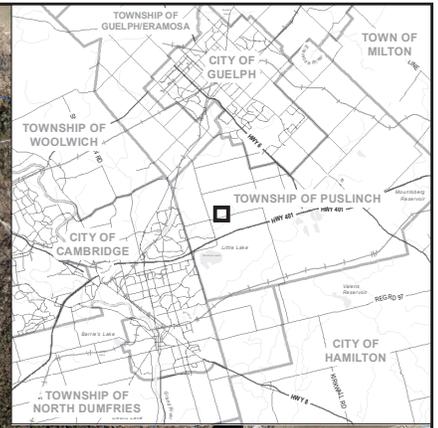
This section identifies federal, provincial and other regulatory legislation, policies, official plans (OP) and OP amendments that are applicable and relevant to the Study Area and the immediate vicinity. This includes policies that triggered the study. These documents may identify natural features, Species at Risk and other habitat as well as other features relevant to this study.

The Study Area contains the Wellington County Greenlands (Schedule A7: Wellington County Official Plan, 2021). The confirmation of the status of the woodland and the functions regarding the woodland and Greenlands is important to verify. The Study Area is also within the Paris Galt Moraine Policy Area and is subject to the Growth Plan for the

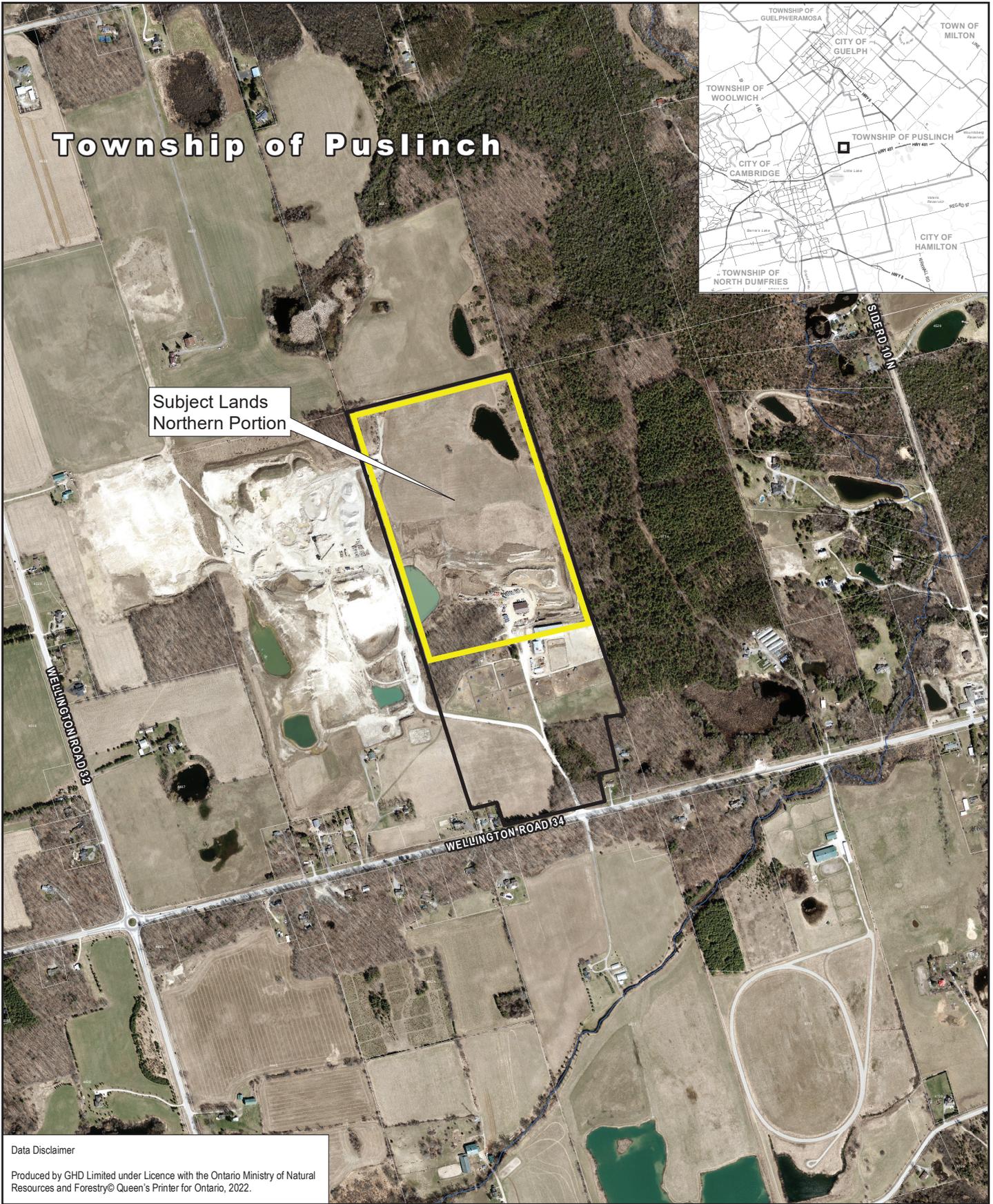
Greater Golden Horseshoe. The Study Area contains portions of the Oil Well Bog Little Tract ANSI, with the closest Provincially Significant Wetland, Cranberry Oil Well Bog approximately 30 meters east of the Study Area.

An EIA is required as part of the supporting documentation for the proposed zoning by-law amendment as the Subject Lands contain portions of the Wellington County Greenlands.

# Township of Puslinch

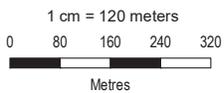


Subject Lands  
Northern Portion



**Data Disclaimer**

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Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983  
Grid: NAD 1983 UTM Zone 17N



2374868 Ontario Inc.  
6678 Wellington Road 34, Puslinch, ON  
Puslinch Township  
County of Wellington

Project No. 11210029  
Revision No.  
Date Apr 26, 2022

Environmental Impact Assessment  
**Site Location Plan**

**Figure 1**

## 1.3.1 Federal Legislation

### ***Migratory Birds Convention Act, 1994 (S.C. 1994, c.22)***

The purpose of the Migratory Birds Convention Act (MBCA 1994) is to implement the Convention by protecting and conserving migratory birds — as populations and individual birds — and their nests.

No work is permitted to proceed that would result in the destruction of active nests (i.e., nests with eggs or young birds), or the wounding or killing of bird species protected under the MBCA and/or Regulations under that Act.

## 1.3.2 Provincial Legislation

### ***Endangered Species Act, 2007***

The purposes of the Ontario Endangered Species Act (ESA 2007) are to:

- To identify species at risk based on the best available scientific information, including information obtained from community knowledge and aboriginal traditional knowledge;
- To protect species that are at risk and their habitats, and to promote the recovery of species that are at risk;
- To promote stewardship activities to assist in the protection and recovery of species that are at risk. 2007, c. 6, s. 1. (Government of Ontario, 2019)

The ESA clearly defines the five classifications of species status as extinct, extirpated, endangered, threatened, or special concern, and provides guidelines on the process of species status determination.

Regulations made under this Act include: Ontario Regulation 230/08 and 242/08. Ontario Regulation 230/08 provides the list of Species at Risk (SAR) in Ontario, which is updated regularly. This list was most recently consolidated on August 1, 2018. Species status provided in the list is assessed by an independent body, the Committee on the Status of Species at Risk in Ontario (COSSARO), based on the best-available science and Indigenous Traditional Knowledge.

### ***Provincial Policy Statement, 2020***

The Provincial Policy Statement, 2020 (PPS) is the statement of the Ontario government's policies on land use planning. It applies province-wide (in the province of Ontario) and provides provincial policy direction on land use planning. Municipalities use the PPS to develop their official plans and to guide and inform decisions on other planning matters. The PPS is issued under Section 3 of the Planning Act and all decisions affecting land use planning matters shall be consistent with' the Provincial Policy Statement (Government of Ontario, 2020).

Portions of Sections 2.1.4-2.1.8 of the Provincial Policy Statement (PPS 2020) apply to this project.

*2.1.4 Development and site alteration shall not be permitted in:*

- a. significant wetlands in Ecoregions 5E, 6E and 7E1; and*

*2.1.5 Development and site alteration shall not be permitted in:*

- b. significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)1;*
- c. significant wildlife habitat;*
- e. significant areas of natural and scientific interest*

*2.1.7 Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.*

*2.1.8 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

ANSI-Oil Well Bog Little Tract is adjacent to the Subject Lands. To comply with Sections 2.1.4 and 2.1.5, alteration of the Subject Lands must not negatively impact the feature or its function (PPS 2020).

Woodlands are present on the eastern and southern borders of the Subject Lands. To comply with section 2.1.4 and 2.1.8. of the PPS (2020), development or alteration on lands within or adjacent to Significant Woodlands are not permitted unless it is demonstrated that there will be no negative impact to the feature or its function.

In addition, Significant Wildlife Habitat (SWH) is a Key Natural Heritage Feature in the PPS, and development or alteration of lands on or within SWH is prohibited. Potential SWH of deer overwinter habitat has been identified within the forests to the east. An EIA is required to demonstrate that the proposed works will not negatively effect any of the features or their ecological functions.

### ***A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020***

A Place to Grow: Growth Plan for the Greater Golden Horseshoe 2020 came into effect on August 28th, 2020 replacing the Growth Plan for the Greater Golden Horseshoe 2017. The 2020 Growth Plan for the Greater Golden Horseshoe (Growth Plan) is a strategic, long-range, comprehensive and integrated approach to guide future growth in Ontario. It includes planning for infrastructure, land use, economic development, and population health (OMMAH 2020). The Study Area does not fall within an identified settlement area; as a result, the portions of Sections 4.2.2 and 4.2.3 of the Growth Plan 2020 referencing the Natural Heritage System for the Growth Plan are applicable to the Study Area. Section 4.2.4 and 4.2.8 of the Growth Plan (2020) is also applicable.

#### ***Section 4.2.2 States:***

- 1. A Natural Heritage System for the Growth Plan has been mapped by the Province to support a comprehensive, integrated, and long-term approach to planning for the protection of the region's natural heritage and biodiversity. The Natural Heritage System for the Growth Plan excludes lands within settlement area boundaries that were approved and in effect as of July 1, 2017.*
- 2. Municipalities will incorporate the Natural Heritage System for the Growth Plan as an overlay in official plans, and will apply appropriate policies to maintain, restore, or enhance the diversity and connectivity of the system and the long-term ecological or hydrologic functions of the features and areas as set out in the policies in this subsection and the policies in subsections 4.2.3 and 4.2.4.*

#### ***Section 4.2.3 States:***

*Outside of settlement areas, development or site alteration is not permitted in key natural heritage features that are part of the Natural Heritage System for the Growth Plan or in key hydrologic features, except for:*

- a) forest, fish, and wildlife management;*
- b) conservation and flood or erosion control projects, but only if they have been demonstrated to be necessary in the public interest and after all alternatives have been considered;*
- c) activities that create or maintain infrastructure authorized under an environmental assessment process;*
- d) mineral aggregate operations and wayside pits and quarries;*
- e) expansions to existing buildings and structures, accessory structures and uses, and conversions of legally existing uses which bring the use more into conformity with this Plan, subject to demonstration that the use does not expand into the key hydrologic feature or key natural heritage feature or vegetative protection zone unless there is no other alternative, in which case any expansion will be limited in scope and kept within close geographical proximity to the existing structure;*
- f) expansions or alterations to existing buildings and structures for agricultural uses, agriculture-related uses, or on-farm diversified uses and expansions to existing residential dwellings if it is demonstrated that: i. there is no alternative, and the expansion or alteration in the feature is minimized and, in the vegetation protection zone, is directed away from the feature to the maximum extent possible; and ii. the impact of the expansion or alteration on the feature and its functions is minimized and mitigated to the maximum extent possible; and*

*g) small-scale structures for recreational uses, including boardwalks, footbridges, fences, docks, and picnic facilities, if measures are taken to minimize the number of such structures and their negative impacts*

#### **Section 4.2.4 States**

*1. settlement areas, a proposal for new development or site alteration within 120 metres of a key natural heritage feature within the Natural Heritage System for the Growth Plan or a key hydrologic feature will require a natural heritage evaluation or hydrologic evaluation that identifies a vegetation protection zone, which:*

*a) is of sufficient width to protect the key natural heritage feature or key hydrologic feature and its functions from the impacts of the proposed change;*

*b) is established to achieve and be maintained as natural self-sustaining vegetation; and*

*c) for key hydrologic features, fish habitat, and significant woodlands, is no less than 30 metres measured from the outside boundary of the key natural heritage feature or key hydrologic feature*

*2. Evaluations undertaken in accordance with policy 4.2.4.1 will identify any additional restrictions to be applied before, during, and after development to protect the hydrologic functions and ecological functions of the feature*

*3. Development or site alteration is not permitted in the vegetation protection zone, with the exception of that described in policy 4.2.3.1 or shoreline development as permitted in accordance with policy 4.2.4.5.*

*Section 4.2.8 (7) identifies where an application under the Aggregate Resources Act has been received and deemed complete by the Province as of July 1, 2017, any applications under the Planning Act to permit the making, establishment or operation of the pit or quarry to which the Aggregate Resources Act application relates, if approved, will not be subject to to the policies of this Plan*

#### **Paris Galt Marine Conservation Act, 2019**

The Paris Galt Marine Conservation Act 2019 came into effect on February 20, 2019. The Act amends the Paris Galt Moraine Conservation Plan and addresses ecological conservation concerns for the Paris Galt Moraine Area, such as planning for land use, maintaining ecological and hydrological function and integrity, and extraction of resources and sprawl (Legislative Assembly of Ontario 2019).

As identified within Section 4 of the Paris Galt Moraine Conservation Plan

*The objectives of the Paris Galt Moraine Conservation Plan are,*

- a) protecting the ecological and hydrological integrity of the Paris Galt Moraine Area;*
- b) ensuring that only land and resource uses that maintain, improve or restore the ecological and hydrological functions of the Paris Galt Moraine Area are permitted;*
- c) maintaining, improving and restoring all the elements that contribute to ecological and hydrological functions of the Paris Galt Moraine Area, including the quality and quantity of its water;*
- d) ensuring that the Paris Galt Moraine Area is maintained as a contiguous natural landform and environment for the benefit of present and future generations;*
- e) providing for land and resource development that conforms with the objectives of the Plan and any applicable Ontario climate change plan;*
- f) providing for an approach to ecological and hydrological management that considers the cumulative impact of water use and future population growth on water needs, and that ensures water will be available for use as public drinking water for individuals and communities in the area;*
- g) restricting the extraction of mineral aggregates that are below the water table; and*
- h) any other prescribed objectives.*

### 1.3.3 Local and Other Regulatory Bodies

#### ***Wellington County (July 2021 Office Consolidation)***

In the 2021 Wellington County Official Plan (OP) Office Consolidation, the Subject Lands are designated as “Greenlands” and “Secondary Agriculture” (Schedule A7, Puslinch). The Subject Lands also fall within Paris Galt Moraine Policy Area (Schedule B7, Puslinch Township). As such, sections 5.5.4, 10.2.2 and schedule A7 (Significant Woodlands), sections 5.6.3. (ANSI), as well as 5.6.1, 5.6.2, 5.6.5 and Schedule A7 (Core Greenlands and Greenlands) apply to this project. An EIA report is required in accordance with the County’s Official Plan section 4.6.3, as the proposed site alteration is within 120 m of significant natural heritage features.

Under the OP, significant woodlands can be identified as woodlands over 4 ha and plantations over 10 ha.

#### ***Township of Puslinch Zoning by-law No. 023-18 Schedule “A”***

According to by-law No. 023-18 Schedule “A”, the northern part of the property (the Subject Lands for the purposes of this EIA) is currently zoned as EX1 from the associated Aggregate license. To ensure compliance with this bylaw, the zoning requires an amendment to Commercial use for the proposed addition of hydrovac services to the current operation.

Section 2.0 of the by-law defines the relevant zones as follows:

*“Extractive Industrial (EXI)- Provides for and regulates land that may be included within a license issued by the Ministry of Natural Resources and Forestry.*

*Commercial use ( C)- Provides for and regulates local commercial uses in the in the Hamlet of Arkell”*

#### ***Section 8.0 and 9.0 of the by-law sets out the permitted uses and zone standards and requirements for C and EXI zones, respectively. Grand River Conservation Authority***

The conservation authority whose jurisdiction the Study Area falls under is Grand River Conservation Authority (GRCA), however the Study Area is not within a regulated area and therefore a permit is not required from the GRCA.

## 1.4 Scope and limitations

This report has been prepared by GHD for [Client] and may only be used and relied on by [Client] for the purpose agreed between GHD and [Client] as set out in section 1 of this report.

GHD otherwise disclaims responsibility to any person other than [Client] arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 1 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

## 1.5 Other Resources Referenced

Prior to field surveys, background information for the Study Area and surrounding lands from a variety of sources was reviewed to provide context for the setting and sensitivity of the site. Background information sources included:

## 1.5.1 Data Sources

- Aerial imagery
- MNRF Land Information Ontario (LIO) database mapping and Natural Heritage Information Centre (NHIC) Make-a-map tool (2021)
- GRCA map your Property tool (2022)
- Ontario Breeding Bird Atlas data (Bird Studies Canada, (BSC) 2001-2005 field data)
- Fisheries and Oceans Canada (DFO) Aquatic Species at Risk Map
- Ontario Insects (Ontario Nature)
- Ontario Reptile and Amphibian Atlas (Ontario Nature)

## 1.5.2 Literature and Resources

- Natural Heritage Reference Manual (MNRF, 2010)
- Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. Peterborough, 38pp. (OMNRF, 2015)

# 1.6 Description of Zoning Amendment

The proposed zoning amendment is to add the use of the hydrovac services from 2374868 Ontario Incorporated, used to dispose of separated soils from the on-site aggregate pit, which are currently existing. These soils will continue to be used as part of the rehabilitation plans for the Subject Lands from an old Aggregate license. The Rehabilitation plan includes spreading of topsoil and planting within terrestrial and created/existing ponds (**Appendix B**).

## 1.6.1 Scope of Report

As mentioned in Section 1.1 of this Report a TOR was completed for the proposed work plan for this EIA, however based on the timing of the field visit in Nov 2021 and early April 2022, the scope of field work was modified slightly (**Appendix A**).

The scope of work for the project included the following:

- Description of current and proposed land uses
- Ecological Land Classification (ELC) mapping of vegetation communities
- An assessment of Species at Risk habitat
- Assessment of ecological functions of the woodland
- Assessment of candidate Significant Wildlife Habitat
- Mitigation recommendations
- Identification of the significant natural features and any buffers/setbacks as required

This report will only deal with the suitability of the Subject Lands from an ecological perspective and the constraints due to the presence of the key natural heritage features. Further, the scope of this EIA is limited to an ecological assessment of the northern portion of the property to support the zoning bylaw amendment. Any other approvals or constraints due to zoning, flood and fill regulations, health regulations, archaeology, slope stability studies, minimum distance separation or other approvals for the municipality and other agencies are the responsibility of the owner.

## 2. Study Methods

### 2.1 General Approach

Our approach to preparation of the EIA consisted of three distinct phases.

In the first phase we collected and reviewed available information on the Subject Lands including recent air photography, Ministry of Northern Development, Mines, Natural Resources and Forest (NDMNRF) key natural features GIS mapping, wetland mapping, Official plan schedules and other correspondence or files available from the County, Township or NDMNRF. The TOR (**Appendix A**), as required by the County of Wellington, was also part of this phase, and provided a framework for our work plan and the completion of the EIA. It should be noted that due to the timing of the field visit in early April, Breeding Bird surveys were not included as part of the field component for this EIA.

The second phase consisted of site visits by our biologist to confirm the data collected in the literature review and obtained the boundaries of any natural features. Surveys included site visits that encompassed ELC mapping, vegetation community boundaries, and the presence of significant species including Species at Risk and their habitat. The significance of the features and the ecological functions were determined during field surveys.

The third phase was the preparation of an EIA with site-specific mitigation measures for protecting the natural features, sensitive species, and other natural features within the Study Area. Recommendations regarding the woodland, ANSI and Greenlands System were included. This report also included figures that show the location of all the natural features, and other mitigation measures and recommendations.

### 2.2 Study Site Methodology

#### 2.2.1 Physical Site Characteristics

Site characteristics were assessed during field visits. This assessment included general documentation of existing disturbances, current property use, topography and natural features.

#### 2.2.2 Biophysical Inventory

##### 2.2.2.1 Level of Effort

A summary of surveys with natural environment conditions and level of effort has been provided in **Table 1**. The surveys were completed within the Subject Lands by GHD biologists according to methodologies outlined in the sections below.

*Table 1 Surveys - Level of Effort*

Survey Date	Survey Type	Weather	Start Time	Effort (person hrs.)
November 9, 2021	Preliminary assessment of SAR habitat, ELC, incidental wildlife	6°C, Cloud cover 10%, Beaufort Wind Scale 1, no precipitation	9:00 AM	3.75
April 5, 2022	ELC, assessment of SAR habitat, assessment of ecological functions of the woodland, assessment of candidate SWH	16°C, Cloud cover 0%, Beaufort Wind Scale 1, no precipitation	8:30 AM	12

## **2.2.2.2 Vegetation**

### ***ELC Survey Method***

All vegetation encountered within the Subject Lands was inventoried during the site visits. Delineation and classification of the vegetation community types was based on the ELC for Southern Ontario (Lee et al., 1998). General notes on disturbance, topography and the state of each community were also compiled. All vegetation communities in the Study Area were included.

Rare, significant, or uncommon species were searched for. Species significance or rarity on a national, provincial, regional or local level was based on published literature and standard status lists. These included SARA (2021), COSEWIC (2021), COSSARO (2020) and Riley (1989).

## **2.2.2.3 Wildlife**

### ***Area Searches***

While GHD was on site conducting surveys of vegetation communities observations of any wildlife encountered were recorded (including birds, mammals, amphibians and reptiles). Documentation included notes about the species detected, their location and the type of encounter (i.e., direct sightings and indirect evidence such as calls, tracks, scat, burrows, dens, trails and browse).

## **2.2.2.4 Significant Wildlife Habitat (SWH)**

Prior to the site visits, a candidate list of SWH features were determined based on the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E, 2015. During site visits, GHD biologists looked for evidence of those candidate significant wildlife habitat features (i.e., to determine presence/absence). Upon compiling field data, further consideration was given to which candidate SWHs could be confirmed as present within the Subject lands.

# **3. Survey Results**

The following section presents GHD site-specific survey data only. Supporting information, the background review and other sources of information will be presented and discussed in Section 4.0 – Discussion and Analysis.

## **3.1 Physical Site Characteristics**

The Subject Lands can be described as generally flat with some rolling topography within the woodlands and a steeper decline with the southwest corner of the Subject Lands. The Subject Lands contained the hydrovac business and associated office on the southern portions. Cultural field meadow, cultural thicket and active hay fields were all identified within the boundary of the Subject Lands. A large forested area containing mixed, coniferous and deciduous forest types was identified to the east of the Subject Lands, with deciduous forest to the north-west and south-west. Two ponds were identified within the boundary of the Subject Lands, one used as an active stormwater management pond for the hydrovac business, with the other an open aquatic pond.

## **3.2 Biological Inventories**

### **3.2.1 Vegetation**

The vegetation communities were delineated within the Study Area according to methodologies outlined in Section 3.2.1.1.

### 3.2.1.1 ELC Code Descriptions

Seven vegetation communities were identified within the Study Area. The community is described below and illustrated in a photographic inventory (**Appendix C**).

A total of 50 plant species were identified during field surveys. The dominant species in each community are described below and a complete plant list is found in **Appendix D**.

#### **Dry - Fresh White Pine - Sugar Maple Mixed Forest Type (FOM2-2)**

This community type was identified to the northeast of the Subject lands, within the forested area continuous with the ANSI-Oil Well Bog Little Tract. This upland area had a mix of sugar maple (*Acer saccharum*), red pine (*Pinus resinosa*), eastern white pine (*Pinus strobus*), European buckthorn (*Rhamnus cathartica*) and black cherry (*Prunus serotina* var. *serotina*).

#### **Dry - Fresh Sugar Maple Deciduous Forest Ecosite (FOD5)**

This community was found in three areas around the Subject Lands, one being in the southeast corner, another on the west side of the Subject Lands, near the southern limits of the EXI zoned area and to the west of the Subject Lands at the northwest corner. This community was densely dominated by sugar maple (*Acer saccharum*). Other species identified included American beech (*Fagus* sp.), ironwood (*Ostrya virginiana*), American basswood (*Tilia americana*) and common lilac (*Syringa vulgaris*).

#### **Dry - Fresh White Pine - Red Pine Coniferous Forest Type (FOC1-2)**

This community was identified within the area running along the eastern edge of the Subject Lands. The dominant tree species identified here included eastern white pine (*Pinus strobus*) and red pine.

#### **Open Aquatic (OAO)**

This anthropogenic pond was identified in the northeast corner of the Subject Lands. The pond contained no recorded submergent vegetation, with willow species identified around the perimeter. The pond was identified as being approximately 2 meters deep with no online connection, and was used for recreational purposes.

#### **Dry - Moist Old Field Meadow Type (CUM1-1)**

The area to the west of the fill piles, north of the FOD5 woodland and south of the hayfield near the northern limits of the Subject Lands, was identified as CUM1-1. This area showed signs of heavy disturbance comprised of long stemmed grasses and the other of species such as Russian knapweed (*Rhaponticum repens*), Canada goldenrod (*Solidago canadensis*) and bull thistle (*Cirsium vulgare*).

#### **Mineral Cultural Thicket Ecosite (CUT1)**

This community type was identified in the northeastern corner of the parcel, between the pond to the north and the eastern limit of the Subject Lands. Dominant species included staghorn sumac (*Rhus typhina*), eastern red cedar (*Juniperus virginiana* var. *virginiana*), eastern white cedar (*Thuja occidentalis*) and white spruce (*Picea glauca*). Willows (*Salix* ssp) also bordered the pond.

#### **Pasturelands (No ELC Code applicable)**

This community was comprised of pasturelands used for the horses that existed onsite as part of the equestrian centre up until summer of 2021. This area was identified to the west of the existing driveway and north of Wellington Rd 34. The majority of the vegetation here was comprised of long stemmed grasses typically grown in pastures, however has been maintained upon the removal of the horses.

## 3.2.2 Birds

### 3.2.2.1 Incidental Bird Observations

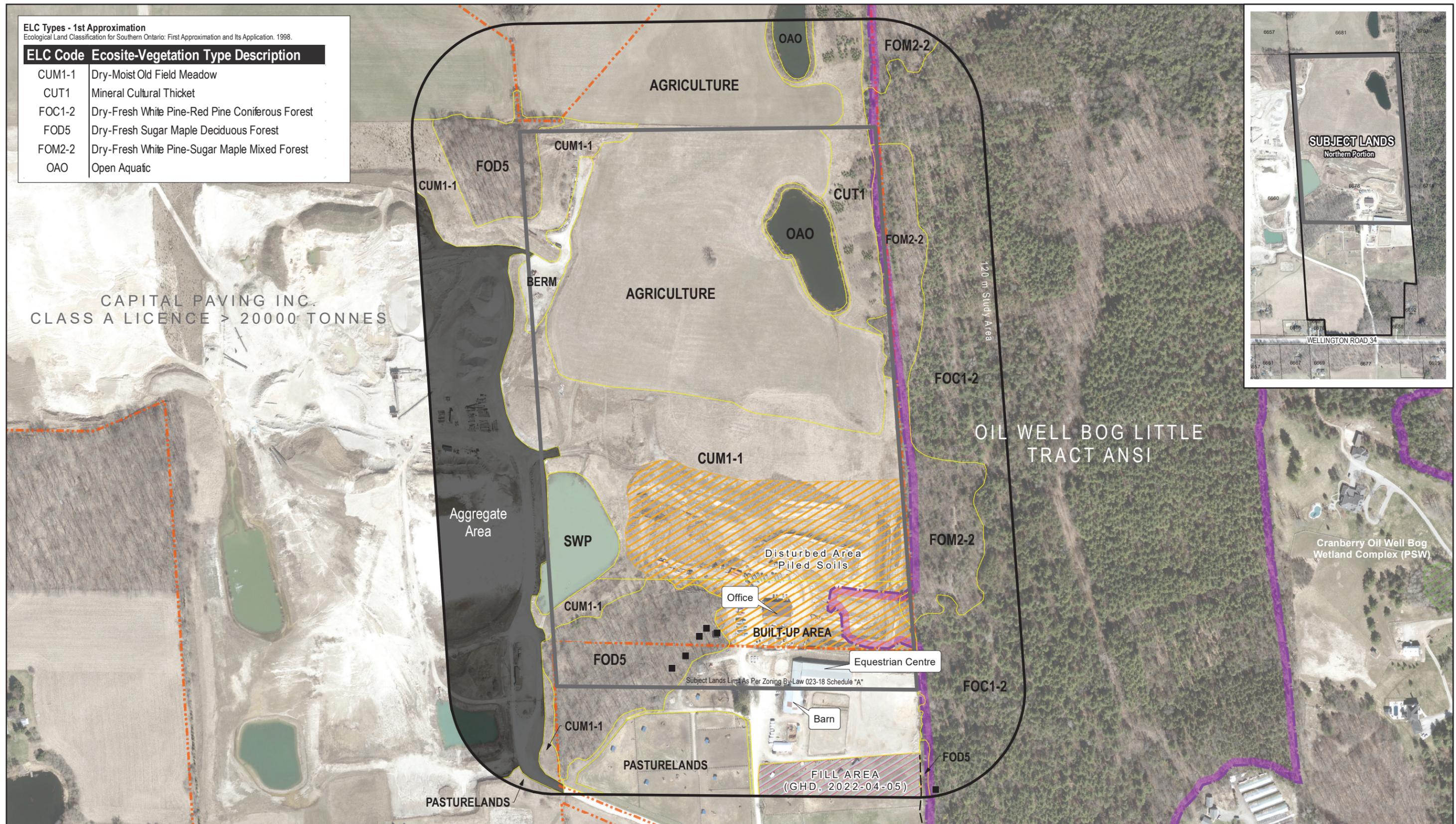
Twenty bird species were identified within the Study Area which included a range of common species including killdeer (*Charadrius vociferus*), ring-billed gull (*Larus delawarensis*), red-bellied woodpecker (*Melanerpes carolinus*), downy woodpecker (*Picoides pubescence*), blue jay (*Cyanocitta cristata*), black-capped chickadee (*Poecile atricapilla*), American robin (*Turdus migratorius*), song sparrow (*Melospiza melodia*) and northern cardinal (*Cardinalis cardinalis*). Other birds were identified flying over the Subject Lands and included turkey vulture (*Cathartes aura*), sandhill crane (*Grus canadensis*) and Canada goose (*Branta canadensis*). A full list of all birds encountered are summarized in **Appendix E**.

## 3.2.3 Other Wildlife

Only three other wildlife species were identified on the Subject Lands during area searches, which included visual observation of eastern cottontail (*Sylvilagus floridanus*) and eastern gray squirrel (*Sciurus carolinensis*), and scat identified to belong to eastern coyote (*Canis latrans*).

**ELC Types - 1st Approximation**  
Ecological Land Classification for Southern Ontario: First Approximation and Its Application, 1998.

ELC Code	Ecosite-Vegetation Type Description
CUM1-1	Dry-Moist Old Field Meadow
CUT1	Mineral Cultural Thicket
FOC1-2	Dry-Fresh White Pine-Red Pine Coniferous Forest
FOD5	Dry-Fresh Sugar Maple Deciduous Forest
FOM2-2	Dry-Fresh White Pine-Sugar Maple Mixed Forest
OAO	Open Aquatic



**Data Disclaimer**  
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**Legend**

Cavity Trees (GHD 2022-04-05)	Aggregate Site Authorized - Active	<b>Wetlands by Significance</b>
Subject Lands - Southern Portion	Aggregate Area	Evaluated-Provincial
120 m Study Area	Fill Area (GHD, 2022-04-05)	Not-Evaluated or Unknown
Vegetation Communities	Disturbed Area, Piled Soils	
ANSI		

1 cm = 40 meters  
0 25 50 75 100  
Meters  
Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983  
Grid: NAD 1983 UTM Zone 17N  
Paper Size ANSI B



2374868 Ontario Inc.  
6678 Wellington Road 34, Puslinch, ON  
Puslinch Township  
County of Wellington  
Environmental Impact Assessment  
Vegetation Communities & Natural Features

Project No. 11210029  
Revision No.  
Date May 9, 2022

**Figure 2**

Q:\GIS\PROJECTS\11210000s\11210029\Layouts\202204\_EIA002\11210029\_202204\_EIA002\_GIS002 - Vegetation Communities and Natural Features.mxd  
Print date: 09 May 2022 - 11:10

Data source: © Township of Puslinch, 2020.

## 4. Discussion and Analysis

### 4.1 Species and Communities

#### 4.1.1 Vegetation

GHD identified no vegetation species that were classified as federally and/or provincially rare in the Subject Lands (SARA 2021; COSEWIC 2021; COSSARO 2020). Additionally, no regionally rare plant species (Riley, 1989) were detected within the Subject Lands.

None of the ecological communities (i.e., ELC ecosites or vegetation communities) found in the Study Area are considered provincially rare (NHIC, 2021).

Data from NHIC was reviewed in the general area of the Study Area, which documented the potential presence of SAR species. Butternut, an endangered species provincially and federally (COSSARO, 2020; COSEWIC, 2021) was identified in the literature. The detailed botanical inventories of the Subject Lands identified no butternut trees (**Appendix F**).

#### 4.1.2 Birds

None of the bird species detected during GHD's area search for birds was considered significant on a national or provincial level (COSEWIC, 2021; COSSARO, 2020). See **Appendix F** for the full list of species identified in the literature review.

One species detected during field inventories was area-sensitive as per MNRF Significant Wildlife Habitat Technical Guide (2015) definitions, red-breasted nuthatch (*Sitta canadensis*). This bird was identified using the adjacent forest and ANSI to the east of the Subject Lands. Area-sensitive species are those that require a minimum area of suitable habitat to successfully breed.

Data from other sources (NHIC, OBBA) have also been used to get a picture of avifauna that may be present within the Study Area. Those species that were identified as containing a moderate or high likelihood for presence are listed below: barn swallow (*Hirundo rustica*), bobolink (*Dolichonyx oryzivorus*), eastern meadowlark (*Sturnella magna*), eastern wood-pewee (*Contopus virens*), wood thrush (*Hylocichla mustelina*), common nighthawk (*Chordeiles minor*), and grasshopper sparrow (*Ammodramus savannarum*).

Barn swallow is listed as a threatened species provincially and federally (COSSARO, 2020, COSEWIC, 2021). In Ontario, barn swallows breed in areas that contain a suitable nesting structure, open areas for foraging, and a body of water. This species nests in human made structures including barns, buildings, sheds, bridges, and culverts. Preferred foraging habitat includes grassy fields, pastures, agricultural cropland, lake and river shorelines, cleared rights-of-way, and wetlands (COSEWIC 2011). Mud nests are fastened to vertical walls or built on a ledge underneath an overhang. Suitable nests from previous years are reused (Brown and Brown 1999). A newer barn existed within the Study Area however is actively used for storage and when not in use (doors closed) there are no openings or gaps for bird entrance. Additionally, no old or current nests were identified in the barn. This barn would not provide suitable habitat for barn swallow nesting.

Bank swallow is listed as a threatened species provincially and federally (COSSARO, 2020; COSEWIC, 2021). In Ontario, the bank swallow breeds in a variety of natural and anthropogenic habitats, including lake bluffs, stream and riverbanks, sand and gravel pits, and roadcuts. Nests are built in a vertical or near-vertical bank. Breeding sites are typically located near open foraging sites such as rivers, lakes, grasslands, agricultural fields, wetlands and riparian woods. Forested areas are generally avoided (Garrison 1999). Surveys were targeted to look for soil piles that would provide suitable habitat for this species within the Study Area, however the Subject Lands are in active use with disturbances on-going, providing no opportunity for nesting birds.

Bobolink is listed as a threatened species provincially and federally (COSSARO, 2020; COSEWIC, 2021). In Ontario, bobolink breeds in grasslands or graminoid dominated hayfields with tall vegetation (Gabhauer 2007). Bobolink prefers grassland habitat with a forb component and a moderate litter layer. They have low tolerance for presence of woody vegetation and are sensitive to frequent mowing within the breeding season. They are most abundant in established, but regularly maintained, hayfields, but also breed in lightly grazed pastures, old or fallow fields, cultural meadows and newly planted hayfields. Their nest is woven from grasses and forbs. It is built on the ground, in dense vegetation, usually under the cover of one or more forbs (Martin and Gavin 1995). The pasturelands are currently maintained and will be used for on-going agricultural practises. Additionally, the northern hayfields are actively farmed and will continue to be farmed, with no change in land use. The Old field meadow (CUM1-1) contained an abundance of typical weed species with grasses present as well, due to the abundance of weed species this habitat would likely not provide suitable habitat for bobolink. This community will remain, with the current land use unchanged.

Eastern meadowlark is listed as a threatened species provincially and federally (COSSARO, 2020; COSEWIC, 2021). In Ontario, eastern meadowlark breeds in pastures, hayfields, meadows and old fields. Eastern meadowlark prefers moderately tall grasslands with abundant litter cover, high grass proportion, and a forb component (Hull 2003). They prefer well drained sites or slopes, and sites with different cover layers (Roseberry and Klimstra 1970). The pasturelands are currently maintained and will be used for on-going agricultural practises. Additionally, the northern hayfields are actively farmed and will continue to be farmed, with no change in land use. The Old field meadow (CUM1-1) contained an abundance of typical weed species with grasses present as well, due to the abundance of weed species this habitat would likely not provide suitable habitat for eastern meadowlark. This community will remain, with the current land use unchanged.

Eastern wood-pewee is listed as a special concern species provincially and federally (COSSARO, 2020; COSEWIC, 2021). The eastern wood-pewee inhabits a wide variety of wooded upland and lowland habitats but is most commonly associated with the mid-canopy of forest clearings, and edge habitat in deciduous and mixed forests. It also occurs in anthropogenic habitats that provide an open forested aspect such as parks and suburban neighborhoods. It prefers intermediate-age mature forest stands with little understory vegetation (COSEWIC 2012). Suitable habitat exists within the wooded communities within the Subject Lands and adjacent lands to the east.

Wood thrush is listed as a special concern species provincially and a threatened species federally (COSSARO, 2020; COSEWIC, 2021). In Ontario, wood thrush breeds in moist, deciduous hardwood or mixed stands that are often previously disturbed, with a dense deciduous undergrowth and with tall trees for singing perches. This species selects nesting sites with the following characteristics: lower elevations with trees less than 16 m in height, a closed canopy cover (>70 %), a high variety of deciduous tree species, moderate subcanopy and shrub density, shade, fairly open forest floor, moist soil, and decaying leaf litter (COSEWIC 2012). Suitable habitat exists within the wooded communities within the Subject Lands and adjacent lands to the east.

Common nighthawk is listed as a special concern species provincially and threatened federally (COSSARO, 2020; COSEWIC, 2021). These aerial foragers require areas with large open habitat. This includes farmland, open woodlands, clearcuts, burns, rock outcrops, alvars, bog ferns, prairies, gravel pits and gravel rooftops in cities (Sandilands 2007). Due to the disturbed nature of the Subject Lands this would not provide suitable habitat for the common nighthawk.

Grasshopper sparrow is listed as a special concern species provincially and federally (COSSARO, 2020; COSEWIC, 2021). In Ontario, grasshopper sparrow is found in medium to large grasslands with low herbaceous cover and few shrubs. It also uses a wide variety of agricultural fields, including cereal crops and pastures. Close-grazed pastures and limestone plains (e.g. Carden and Napanee Plains) support highest density of this bird in the province (COSEWIC 2013). The pasturelands are currently maintained and will be used for on-going agricultural practises. Additionally, the northern hayfields are actively farmed and will continue to be farmed, with no change in land use. The Old field meadow (CUM1-1) contained an abundance of typical weed species with grasses present as well, due to the abundance of weed species this habitat would likely not provide suitable habitat for grasshopper sparrow. This community will remain, with the current land use unchanged.

### 4.1.3 Other Wildlife

No other federal or provincial species at risk were recorded on the Subject Lands during the site visit (SARA 2021; COSEWIC 2021; COSSARO, 2020).

Data from NHIC identified the potential presence of three provincially and federally endangered bat species; Little Brown Myotis (*Myotis lucifugus*), tri-colored bat (*Eastern pipistrelle*), Northern myotis (*Myotis septentrionalis*).

Little Brown Myotis will roost in both natural and man-made structures. They require a number of large dead trees, in specific stages of decay and that project above the canopy in relatively open areas (Lacki, 2007). May form nursery colonies in the attics of buildings within 1 km of water. Caves or abandoned mines may be used for hibernaculum, but high humidity and stable above freezing temperatures are required. Although a few cavity trees were identified along the eastern border of the Subject Lands (within the adjacent ANSI and Little Tract Forest) (**Figure 2**) the trees were not in significant stages of decay. Additionally, no habitat for hibernaculum or nursery colonies were identified with the absence of caves or abandoned mines and any attics in buildings.

Tri-colored bat may roost in foliage, in clumps of old leaves, hanging moss or squirrel nests. They are occasionally found in buildings although there are no records of this in Canada (Poissant et al, 2010). They typically feed over aquatic areas with an affinity to large-bodied water and will likely roost in close proximity to these. Hibernation sites are found deep within caves or mines in areas of relatively warm temperatures. These bats have strong roost fidelity to their winter hibernation sites and may choose the exact same spot in a cave or mine from year to year. The presence of forests in the Study Area indicated the potential for roosting habitat for tri-colored bat, however with the absence of large bodies of water preferred for feeding and no hibernation sites including caves or mines the presence of this bat on the Subject Lands is highly unlikely.

Northern myotis will usually roost in hollows, crevices, and under loose bark of mature trees. Roosts may be established in the main trunk or a large branch of either living or dead trees. Caves or abandoned mines may be used for hibernaculum, but high humidity and stable above freezing temperatures are required (COSSARO 2012). Although one cavity tree was identified along the eastern border of the Subject Lands (within the adjacent ANSI and Little Tract Forest) and five cavity trees within the sugar maple forest (FOD5) within the Subject Lands in the south-west. No habitat for hibernaculum or nursery colonies were identified with the absence of caves or abandoned mines and any attics in buildings. The proposed use of the Subject Lands will remain unchanged and any cavity trees identified will remain.

## 4.2 Natural Features

### 4.2.1 Woodlands

Three areas within the Study Area were forested, classified in various types including deciduous, coniferous, mixed and plantation. There was a deciduous pocket identified within the south-western limits of the Subject Lands, as well as a deciduous/coniferous/mixed forest encompassing the eastern boundary, contiguous with the Oil Well Bog Little Tract ANSI. The northwestern corner of the Subject Lands contained a sugar maple forest (FOD5; **Figure 2**).

According to Schedule 7 within the County of Wellington Official Plan (2021) the adjacent lands to the east of the Subject Lands fall within the Greenlands system. The Greenlands system encompasses woodlands. As identified in Section 5.5.4 in the County of Wellington Official Plan *in the rural system woodlands over 4 ha and plantations over 10 ha are considered to be significant by the County*. The woodlands to the east (FOC1-2/FOD5/FOM1-1) of the Subject Lands are contiguous with a large woodland identified as Little Tract, owned by the County of Wellington. This forest is much greater than 4 ha in size therefore would be considered Significant Woodlands according to policies laid out by County of Wellington.

The sugar maple forests (FOD5) identified within the north-western and south-eastern corner of the Subject Lands were less than 1 ha in size and therefore would not meet the criteria laid out in the County of Wellington OP for

significance. These features were also not designated as part of the Greenlands System in Schedule 7 (County of Wellington, 2021).

## 4.2.2 Wetlands

No Provincially Significant Wetlands or unevaluated wetlands were identified within the Subject Lands. The Cranberry Oil Well Bog PSW was identified as greater than 250 m to the east of the Subject Lands and outside of the Study Area.

## 4.2.3 Ponds

Two ponds were identified within the Subject Lands. The northern pond was identified as an Open Aquatic. This pond contained no visible aquatic vegetation at the time of the field visit, however contained some perimeter vegetation consisting of trees and shrubs. This pond was entirely offline with no surface water connections.

The pond identified in the south-western corner of the Subject Lands was utilized as a Stormwater pond for the existing hydrovac business.

## 4.2.4 ANSI

The Regionally Significant Oil Well Bog Little Tract Life Science ANSI was identified directly abutting the Subject Lands to the east and contained various Landform features as identified in the Life Science Inventory Checklist: Oil Well Bog Little Tract (NDMNR, 2022) and listed below:

1. Size: 452.83 ha in size
2. Vegetation types: 10 vegetation communities including black spruce bog supporting 4 bog forms, swamps, upland, lowland disturbed and mature forest
3. High quality biological communities and rich species diversity
4. Glacial spillway in the northern side of the Paris Moraine
5. Bedrock: dolomite of Silurian age at 15 meters, muck, kame deposits, outwash sand
6. Surficial Geology: Three soils mapped, Burford, Fox and organic soils

## 4.2.5 Significant Wildlife Habitat

Significant Wildlife Habitat (SWH) often occurs within other natural heritage features and areas covered by Policy 2.1 of the PPS (e.g., significant wetlands). Therefore, it has been suggested that identification and evaluation of SWH is best undertaken after other natural heritage features have been identified (Natural Heritage Reference Manual, 2010).

GHD biologists analyzed the information collected from the ecological communities on the Subject Lands using the criteria for Significant Wildlife Habitat in Ecoregion 6E (2015) and identified three (3) potential candidate SWH within the Study Area:

- Woodland Area-Sensitive Bird Breeding Habitat,
- Special Concern and Rare Wildlife Species, and
- Bat maternity colonies.

White-tailed deer overwintering area (Stratum II) was confirmed through the review of Land Information Mapping and noted to be present within the Oil Well Bog Little Tract ANSI adjacent the Subject Lands (Table 3). This category was most closely related to Deer Winter Congregation Areas as identified within the Significant Wildlife Habitat Ecoregion 6E (MNR, 2015) therefore will be named as this moving forward.

All forest communities were surveyed for cavity trees that could serve as possible maternity roost habitat for SAR bats. The FOD5 community to the southeast of the Subject Lands was noted to contain one suitable cavity tree, and the

FOD5 community on the southwest side of the Subject Lands contained five cavity trees; identified in **Appendix C** and on **Figure 2**.

Table 2 Significant Wildlife Habitat – Candidate and Confirmed as identified within the Significant Wildlife Habitat Technical Guide 6E

Wildlife Habitat	Wildlife Species	Candidate SWH and Habitat Criteria		Confirmed SWH and Defining Criteria	Candidate Habitat found within Study Area	Confirmed Habitat found within Study Area
		ELC Ecosite	Habitat Criteria			
<p><b>Woodland Area-Sensitive Bird Breeding Habitat</b></p> <p><i>Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest songbirds</i></p>	<ul style="list-style-type: none"> <li>– Yellow-bellied sapsucker</li> <li>– Red-breasted Nuthatch</li> <li>– Veery</li> <li>– Blue-headed Vireo</li> <li>– Northern Parula</li> <li>– Black-throated Green Warbler</li> <li>– Blackburnian Warbler</li> <li>– Black-throated Blue Warbler</li> <li>– Ovenbird</li> <li>– Scarlet Tanager</li> <li>– Winter Wren</li> </ul>	<p>FOC</p> <p>FOM</p> <p>FOD</p> <p>SWC</p> <p>SWM</p> <p>SWD</p>	<p>Typically, large mature (&gt;50 yrs. Old) forest stands or woodlots &gt;30 ha.</p> <p>Interior forest habitat is at least 200m from forest edge habitat</p>	<p>Presences of nesting or breeding pairs of 3 or more of the listed wildlife species</p> <p><i>Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH</i></p>	<p>Sugar Maple Forest (FOD5);</p> <p>White Pine-Red Pine Coniferous Forest (FOC1-2);</p> <p>White Pine-Sugar Maple Mixed Forest (FOM2-2)</p>	<p><b>Potential:</b> Although only one of the listed species (red-breasted nuthatch) was identified in area searches within the Study Area, the large size of the adjacent woodland/ANSI to the east would provide suitable habitat for any of the listed area sensitive species and better captured within breeding bird season.</p> <p>Due to the small size, the sugar maple forest on the south-western corner and northwestern corner of the Subject Lands would not provide suitable habitat for woodland Area Sensitive breeding birds requiring larger areas of forest.</p>
<p><b>Special Concern and Rare Wildlife Species</b></p> <p><i>Rationale: These species are quite rare or have experienced significant population declines in Ontario</i></p>	<p>All Special Concern and Provincially rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre.</p>	<p>All plant and animal element occurrences (EO) within a 1 or 10km grid.</p> <p>Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.</p>	<p>When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites lxxviii</p> <p>Information Sources • Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. • NHIC Website “Get Information”: <a href="http://nhic.mnr.gov.on.ca">http://nhic.mnr.gov.on.ca</a> • Ontario Breeding Bird Atlas • Expert advice should be sought as many of the rare spp. Have little information available about their requirements</p>	<p>Studies Confirm: • Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat. • SWHMIST cxlix Index #37 provides development effects and mitigation measures</p>	<p>Sugar maple forest (FOD5)</p>	<p><b>Potential:</b> Field studies did not confirm the presence of any special concern species based on the timing of the field season, however records from the literature review identified the potential habitat presence of eastern wood-pewee and wood thrush to occur within the Study Area, particularly within the sugar maple forests to the east and southwestern/northwestern corners of the Subject Lands as well as potential for grasshopper sparrow to occur within the Old field meadow (CUM1-1).</p>
<p><b>Deer Winter Congregation Areas</b></p> <p><i>Rationale: Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions</i></p>	<p>White-tailed Deer</p>	<p>All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.</p>	<p>woodlots will typically be &gt;100 ha in size (E). Woodlots 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha ccxxiv. • Woodlots with high densities of deer due to artificial feeding are not significant (E). Information Sources • MNR District Offices. • LIO/NRVISS</p>	<p>Studies confirm: • Deer management is an MNR responsibility, deer winter congregation areas considered significant will be mapped by MNR cxlviii. • Use of the woodlot by whitetailed deer will be determined by MNR, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNR (E) • Studies should be completed during winter (Jan/Feb) when &gt;20cm of snow is on the ground using aerial survey techniquesccxxiv, ground or road surveys. or a pellet count deer density surveyccxxv. • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMIST cxlix Index #2 provides development effects and mitigation measures.</p>	<p>White Pine- Red Pine Coniferous Forest (FOC1-2);</p> <p>Sugar Maple Forest (FOD5)</p>	<p><b>Confirmed:</b> through the review of Land Information Ontario Mapping and noted to be present within the Oil Well Bog Little Tract ANSI to the east of the Subject Lands.</p>

Wildlife Habitat	Wildlife Species	Candidate SWH and Habitat Criteria		Confirmed SWH and Defining Criteria	Candidate Habitat found within Study Area	Confirmed Habitat found within Study Area
		ELC Ecosite	Habitat Criteria			
<b>Bat Maternity Colonies</b>	<ul style="list-style-type: none"> <li>- <i>Big Brown Bat</i></li> <li>- <i>Silver-haired Bat</i></li> </ul>	<p><i>Maternity Colonies considered SWH are found in forested Ecosites.</i></p> <p><i>All ELC Ecosites in ELC Community Series:</i></p> <p><i>FOD</i></p> <p><i>FOM</i></p> <p><i>SWD</i></p> <p><i>SWM</i></p>	<p><i>Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings were not considered to be SHW).</i></p> <p><i>Maternity roosts are not found in caves and mines in Ontario</i></p> <p><i>Maternity colonies located in Mature deciduous or mixed forest stands with &gt;10ha large diameter (&gt;25 cm dbh) wildlife trees</i></p> <p><i>Female bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2</i></p> <p><i>Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred</i></p>	<p><i>Maternity Colonies with confirmed use by;</i></p> <p><i>&gt;10 Big Brown Bats</i></p> <p><i>&gt;5 Adult Female Silver haired Bats</i></p> <p><i>The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Eco element containing the maternity colonies.</i></p> <p><i>Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects"</i></p>	Sugar maple forest (FOD5)	<p><b>Potential:</b> 5 cavity trees were identified within the sugar maple forest (FOD5) within the southwest corner of the Subject Lands. 1 cavity tree was identified within the Oil Well Bog Little Tract ANSI to the east of the Subject Lands</p> <p>-bat boxes identified within the sugar maple forest (FOD5) within the southwest corner of the Subject Lands.</p>

# 5. Impact Assessment and Recommendations

The following section provides a description of the predicted impacts that may result from the zoning by-law amendment to allow use of the property to include an existing hydrovac operation. Under the proposed conditions, the land use will remain the same with continued rehabilitation of the Subject Lands operating under an MNRF approved Pit Rehabilitation Plan. As identified within the Design and Operations Report (GHD, 2021) as part of the operations of this business the facility receives soil mixed with water from hydrovac operations conducted by Site personnel and trucks at multiple sites in southern Ontario. The soil water mixture is placed in stockpiles, water gravity drains off and the soil is tested to confirm it meets Table 1 (Background) Standards.

The hydrovac facility will continue to operate within its current footprint, with the runoff designed to drain to the Stormwater Pond (also regularly tested for water quality) which was located within the southwestern limits of the Subject Lands. It is important to continue to ensure that no soil encroachment occurs within the eastern woodlot as part of the stockpiling of the soils.

## 5.1 Species and Communities

### 5.1.1 Birds

The red-breasted nuthatch (*Sitta canadensis*) will not be negatively impacted by the proposed re-zoning and existing hydrovac operation. The continued use and rehabilitation of the Subject Lands will not impact the forested areas within the Study Area. No tree removal is proposed as part of the commercial use as a hydrovac facility or as part of the rehabilitation of the Subject Lands therefore no significant negative impacts are anticipated on the habitat for this species. The existing uses of the Subject Lands will not change. The rehabilitation plan proposed tree planting in areas within the Subject Lands which would enhance the habitat and adjacent woodlands, providing additional cover.

The eastern wood-pewee will not be negatively impacted by the proposed re-zoning. No tree removal is proposed as part of the commercial use as a hydrovac facility or as part of the rehabilitation of the Subject Lands therefore no significant negative impacts are anticipated on the habitat for this species. The existing uses of the Subject Lands will not change. The rehabilitation plan proposed tree planting in areas within the Subject Lands which would enhance the habitat and adjacent woodlands, providing additional cover.

The wood thrush will not be negatively impacted by the proposed re-zoning and existing hydrovac operation. No tree removal is proposed as part of the commercial use as a hydrovac facility or as part of the rehabilitation of the Subject Lands therefore no significant negative impacts are anticipated on the habitat for this species. The existing uses of the Subject Lands will not change. The rehabilitation plan proposed tree planting in areas within the Subject Lands which would enhance the habitat and adjacent woodlands, providing additional cover.

The bobolink, eastern meadowlark and grasshopper sparrow were not identified during field surveys, however based on the absence of breeding bird or grassland bird surveys could not be confirmed due to the timing of the field visit. No clearing of the Old field meadow is expected, the area of the disturbed soils as utilized by the existing hydrovac operation will remain the same.

### 5.1.2 Other Wildlife

Potential roosting habitat was identified for little Brown Myotis and Northern myotis within the forests to the east (ANSI) and within the south-western forest (FOD5). No woodland removal is proposed as part of the continued use of the Subject Lands as a hydrovac business and the proposed rehabilitation of the Subject Lands. The cavity trees (all determined to be low quality trees) will not be impacted as a result of the continued use of the Subject Lands. The trees will remain in place, with no negative impacts to potential habitat within cavity trees for any of the listed bat species above.

## 5.2 Natural Features

### 5.2.1 Significant Woodland/ANSI/Greenlands System

Three areas within the Study Area were forested, classified in various types including deciduous, coniferous and mixed. There was a deciduous pocket (FOD5) identified along the northwestern and southwestern limits of the Subject Lands, as well as a deciduous/coniferous/mixed forest encompassing the eastern boundary and contiguous with the Oil Well Bog Little Tract ANSI and Greenlands system.

According to Schedule A7 within the County of Wellington Official Plan (2021) the adjacent lands to the east of the Subject Lands fall within the Greenlands system. The Greenlands system encompasses woodlands. As identified in Section 5.5.4 in the County of Wellington Official Plan *in the rural system woodlands over 4 ha and plantations over 10 ha are considered to be significant by the County*. The woodlands to the east (FOC1-2/FOM1-1/FOD5) of the Subject Lands are well over 4 ha in size therefore are considered Significant Woodlands according to County of Wellington policies. The woodland to the east was designated as part of the Natural Heritage System (Growth Plan for the Greater Golden Horseshoe). Some of the functions of the eastern woodland included habitat for area sensitive species, cover for wildlife, SWH (deer winter congregation area, potential for bat maternity colonies, special concern species). The woodlot also contains portions of PSW and Regional Life Science ANSI, and therefore provides value in the continued protection of these features.

The existing footprint of the operation should be utilized. If the expansion of the operation is proposed, lands should be evaluated further to ensure policy compliance.

No significant negative impacts are anticipated on the adjacent woodland and ANSI as a result of the proposed zoning change.

The Rehabilitation Plan (**Appendix B**) includes proposed fill importation, grading, drainage and tree planting areas around the Subject Lands. The addition of trees will enhance the significant woodland and ANSI and provide additional protection to the PSW and ANSI while creating additional opportunity for wildlife.

### 5.2.2 Significant Wildlife Habitat

Four types of Significant Wildlife Habitat were confirmed (Deer winter congregation area) or contained potential (candidate) habitat within in the Study Area (habitat for woodland Area Sensitive Bird Breeding, special concern species and rare wildlife species, and bat maternity colonies). Each of these habitats is located outside of the Subject Lands.

No woodland or tree removal is proposed or will occur as a result of the on-going operation of the hydrovac business and rehabilitation of the Subject Lands. Additionally, no clearing of the Old field meadow is expected, the disturbed soils as utilized by the existing hydrovac operations will remain the same. None of these habitats will be negatively impacted as a result of the proposed re-zoning for existing operations.

### 5.2.3 Pond

The northern pond was identified as an Open Aquatic. This anthropogenic pond is entirely offline with no surface water connections. The pond is within the hay fields at the north end of the Subject Lands, and north of the hydrovac operations. This land use will remain as agriculture and no change to the landscape or landuse will occur surrounding the pond. The pond will continue to provide water storage and provide aquatic habitat for species that may be utilizing it. No significant negative impacts are anticipated on the pond as a result of the zoning bylaw amendment for the Subject Lands and continued commercial use as a hydrovac operation in the southern limits. The pond is currently used for drainage purposes and will be continued to be used as such.

## 5.2.4 Wildlife Corridors/Connectivity

The woodland to the east of the Subject Lands was part of a large contiguous woodland that provided a movement corridor from north to south. This feature is also part of the Regional Life Science ANSI/ and Greenlands system. The re-zoning of the Subject Lands will not result in any significant negative impacts on the corridor function. The land use will remain the same, with the use as a hydrovac business and continued efforts to rehabilitate the Subject Lands. No woodland removal is proposed, and therefore no change in corridor or connectivity is proposed. The proposed rehabilitation efforts (i.e. tree planting) will provide additional vegetation within the Subject Lands and along the edges of the corridor, further enhancing the existing adjacent habitat.

## 5.2.5 Paris Galt Moraine

The continued use of the land as a hydrovac business meets the objectives of the Paris Galt Moraine Conservation Plan. The ecological and hydrological integrity of the Area will be protected, no surface water features will be impacted as a result of the re-zoning of the Subject Lands and continued land use. Two ponds were identified within the Subject Lands, one of which was utilized for stormwater. The north pond will remain, as will the surrounding agricultural fields, and therefore no impacts to the hydrology of the area are anticipated. Section 5.2.1 identifies that no significant negative impacts will occur as a result on the Adjacent ANSI/woodlot or its ecology. The Paris Galt Moraine Area will be maintained as a contiguous landform and will not be affected. No further extraction of mineral aggregates is proposed for the Subject Lands.

## 5.2.6 General Mitigation Measures

Additional measures to mitigate on-going site operations under the proposed re-zoning include:

1. Mitigation measures to avoid nests and vegetation clearing during the nesting season (April 1 – August 31 of any year).
2. No woodland or tree removal be completed.
3. Ensure hydrovac operations and stockpiling of soils do not encroach into the eastern woodlot and remain within the existing footprint of the facility.
4. The existing permitted Rehabilitation Plan includes include native woody and herbaceous vegetation in selected areas as part of the re-vegetation of the Subject Lands.
5. If the existing use for the Subject Lands changes in the future, site specific applications will be subject to their own approvals.
6. If the proponent wishes to expand the hydrovac facility outside of its current boundary, further evaluation of the lands is required to assess its compliance with applicable policies.

# 6. Policies and Legislative Compliance

The following section describes how the proposed development will be in conformance with the relevant federal, provincial and other regulatory legislation, policies, official plans and OP amendments that are applicable and relevant to the Study Area and the immediate vicinity.

Table 3 Policy Compliance

Applicable Legislation/Policy	Summary of Findings	Policy Compliance
<p><i>Migratory Bird Convention Act</i> (MBCA) (Government of Canada, 1994)</p>	<p>Mitigation measures to avoid nests and vegetation clearing during the nesting season (April 1 – August 31) will support conformity with the MBCA.</p>	<p>Yes</p>
<p>Endangered Species Act (Government of Ontario, 2007)</p>	<p>No Provincially END or THR individuals were observed within the Subject Lands.</p>	<p>Yes</p>
<p>Provincial Policy Statement (PPS) (MMAH, 2020)</p>	<p>No development or site alteration will occur within any Natural Heritage Features. No negative impacts are anticipated on these features with the proposed mitigation as laid out in <b>Section 5</b>. No negative impacts are anticipated on any of the potential Significant Wildlife Habitat occurring within the adjacent lands (<b>Section 5.2.2</b>). No habitat for endangered or threatened species was identified within the Subject Lands. The closest PSW was identified outside of the Study Area. The Regional Life Science ANSI will be protected, with no removal or proposed development. This EIA has demonstrated that no negative effects will occur as a result of continued land use on the Subject lands.</p>	<p>Yes</p>
<p>Growth Plan for the Greater Golden Horseshoe (Government of Ontario, 2020)</p>	<p>The Study Area does not fall within an identified settlement area. As a result, Sections 4.2.2 and 4.2.3 of the GPGGH 2020 referencing the Natural Heritage System for the Growth Plan applies to the Study Area. Section 4.2.4 of the Growth Plan (2020) applies to this project.</p> <p>Section 4.2.8 (7) identifies <i>where an application under the Aggregate Resources Act has been received and deemed complete by the Province as of July 1, 2017, any applications under the Planning Act to permit the making, establishment or operation of the pit or quarry to which the Aggregate Resources Act application relates, if approved, will not be subject to to the policies of this Plan</i>. As the Subject Lands are operating under a NDMNRF approved Pit Rehabilitation permit, activities related to this apply. Additionally the proposed hydrovac use is in keeping with the typical uses that occur at the extraction site and processing facility.</p> <p>Additionally, this EIA demonstrates in <b>Section 5.2.1</b> that no negative impacts are anticipated on the adjacent woodland as a result of the re-zoning and continued land use.</p> <p><b>Section 5</b> outlines mitigation measures to mitigate any potential impacts that may occur while protecting the natural heritage features in a manner that is consistent with the Growth Plan.</p>	<p>Yes</p>
<p>Paris Galt Moraine Policy (Government of Ontario, 2019)</p>	<p><b>Section 5.2.5</b> identifies the proposed re-zoning of the Subject Lands meets the objectives of the Paris Galt Moraine Policy.</p>	<p>Yes</p>

Applicable Legislation/Policy	Summary of Findings	Policy Compliance
County of Wellington Official Plan (July, 2021)	The woodlot identified to the east of the Subject Lands was identified as Significant based on the County of Wellington size criteria for Rural Systems (>4ha). <b>Section 5.2.1</b> of this Report identifies the compliance with the OP. No significant negative impacts will occur as a result of the re-zoning with the land use remaining the same.	Yes
Township of Puslinch Zoning by-law No. 023-18 Schedule "A"	This EIA was prepared as part of the requirements for the Re-zoning Application.	The zoning requires an amendment to Commercial use for the proposed addition of hydrovac services to the current operation in order to comply with Bylaw 023-18
Grand River Conservation Authority Regulation 161/06 (Government of Ontario, 2006)	The GRCA regulation limit does not fall within the Subject Lands boundary/Subject Lands therefore a permit is not required.	Yes

## 7. Conclusion

GHD Limited has prepared this EIA to address potential environmental issues associated with the zoning by-law amendment of the Subject Lands to include all aspects of the hydrovac business on the northern portion of a property located at 6678 Wellington, within the County of Wellington, Township of Puslinch.

Significant natural features identified within the Study Area included Significant Woodland, ANSI-Oil Well Bog Little Tract, Candidate and Confirmed Significant Wildlife Habitat (Woodland Area-sensitive bird breeding habitat (Candidate), Special Concern and rare wildlife species (Candidate), Deer winter congregation area (Confirmed), bat maternity colonies (Candidate)). Each of these features are located outside of the Subject Lands. Measures have been recommended to mitigate impact of the on-going land use to the ANSI/ Significant Woodland, and Significant Wildlife.

The proposed re-zoning of the Subject Lands to include the hydrovac operations (on the southern portion of the Subject Lands) will not result in significant negative impacts on the identified natural heritage features provided the mitigation outlined in Section 5.0 are implemented. This opinion is limited to the identified zoning by-law amendment application; if the use of the Subject Lands is to change in the future, the site specific application will be subject to review and approval pertaining to any potential impacts to natural features and/or their functions.

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# Appendices

# **Appendix A**

## **Terms of Reference**



# **Terms of Reference for Environmental Impact Assessment**

**6678 Wellington Rd. 34,  
Township of Puslinch**

2374868 Ontario Inc.

December 1, 2021

**→ The Power of Commitment**



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# 1. Introduction

The existing lot is located on the north side of Wellington Rd. 34 within the Township of Puslinch, County of Wellington. The property currently has an agreement with Capital Paving to allow disposal of separated soils as part of the rehabilitation activities for an on-site aggregate pit. These soils are being brought to the site by a hydrovac operation through 2374868 Ontario Incorporated. The property is zoned as Agricultural (A) on the southern half and Extractive Industrial (EXI) on the northern half from the associated Aggregate license, according to the Township of Puslinch Zoning by-law No. 023-18 Schedule "A". The proposed use for the hydrovac services will require a zoning amendment (to Commercial use) to ensure proper compliance in land use for his current operation. The rezoning is anticipated to be applied to the entire property; however, for purposes of this EIA the Study Area is proposed to be the northern half of the property and within the EXI zoning plus an additional 120 meters area of investigation. The features identified in the Study Area included active hay field (southern fields) and deciduous forest encompassing the eastern boundary. The south-eastern corner contained mostly sugar maple with a small plantation. The central woodland overlapping the property was a deciduous forest pocket of sugar maple and beech. Areas within the EXI lands are in a state of rehabilitation with cultural meadow (Figure 1).

The Study Area contains the Wellington County Greenlands (Schedule A7: Wellington County Official Plan, 2021). The confirmation of the status of the woodland and the functions regarding, the woodland and Greenlands, is important to verify. The Study Area is also within the Paris Galt Moraine Policy Area and is subject to the Growth Plan for the Greater Golden Horseshoe. The Study Area contains portions of the Oil Well Bog Little Tract ANSI, with the closest Provincially Significant Wetland, Cranberry Oil Well Bog approximately 30 meters east of the Study Area.

An EIA is required as part of the supporting documentation for the proposed zoning by-law amendment as the property contains portions of the Wellington County Greenlands.

Based on our literature review, the following natural features are present on or within 120 meters of the property:

- Potential habitat of Species at Risk
- Wellington County-Greenlands
- Woodland
- Wildlife Corridor and Linkages
- Significant Wildlife Habitat: White-tailed Deer Wintering Area (Stratum 2)
- Oil Well Bog Little Tract ANSI (Regional Life Science ANSI)

## 2. Approach

### 2.1 General Approach

Our approach to preparation of the EIA will consist of three distinct phases.

In the first phase we will collect and review available information on the site including recent air photography, Ministry of Northern Development, Mines, Natural Resources and Forest (NDMNR) key natural features GIS mapping, wetland mapping, Official plan schedules and other correspondence or files available from the County, Township or NDMNR. This Terms of Reference, as required by the County of Wellington, is also part of this phase, and will act as a framework for our work plan and the completion of the EIA.

The second phase will consist of site visits by our terrestrial and wetland biologists to confirm the data collected in the literature review and boundary of any natural features. The boundary any wetlands and the woodlands on or adjacent to the property will be confirmed, GPS readings taken and the features mapped. Surveys will include site visits that

encompass breeding bird surveys, Ecological Land Classification (ELC) mapping, vegetation community boundaries, and presence of significant species including Species at Risk. The significance of the features and the ecological functions will be determined during our field surveys.

The proposed multi-season 2022 surveys will occur where property access is available, and includes:

- Breeding bird surveys (two rounds)
- Ecological Land Classification mapping of vegetation communities
- An assessment of Species at Risk habitat
- Two-season botanical inventory of the Study Area
- Assessment of ecological functions of the woodland
- Assessment of candidate Significant Wildlife Habitat

The third phase will be the preparation of an EIA with site-specific mitigation measures for protecting the natural features, sensitive species, and other natural features within the Study Area. Recommendations regarding the woodland and Greenlands, including buffers and setbacks will be included. This report will include figures that show the location of all the natural features, and other mitigation measures and recommendations. GHD will discuss our findings and sensitive species or features identified through background review and field investigations.

The report will follow the content requirements of the County of Wellington Official Plan and procedural policies for an EIA report. The property is not within the regulated area of the Grand River Conservation Authority.

It is our understanding that retaining a third-party consultant may be required to review the EIA report. Please confirm if any third party review of this TOR is required at this time, or if the third party can be retained to review the completed the peer review of the EIA when it has been prepared.

## 2.2 Field Inventories

### 2.2.1 Timing and Schedule

The EIA for the proposed project will be undertaken during the spring and summer of 2022 with surveys expected to be completed by late summer. Surveys must be conducted in the proper season and as per established protocols for the target species. The surveys will cover all portions of the Study Area and adjacent areas to assess the boundary of natural features such as the woodland.

### 2.2.2 Detailed Methodology

Vegetation: vegetation communities within the Study Area will be visited and species composition of dominant species determined. Community type criteria will follow the Ecological Land Classification for Southern Ontario (ELC) program (Lee et al. 1998) and will be done to the vegetation type level. The presence of rare species or significant communities, if any, will be documented and locations mapped. Timing of vegetation surveys will coincide with peak growing seasons; with visits occurring in the late spring ephemeral and summer flowering plants.

The presence of invasive species, regenerating vegetation, disturbances and land uses will be noted.

A master plant species list will be compiled from field notes in the final phase.

Bird Surveys: Bird surveys will be conducted following the protocols of the Ontario Breeding Bird Atlas point count. Birds seen or heard within the 10-minute station period will be documented and breeding evidence codes recorded. Surveys will be conducted in the early morning at dawn on two days approximately 10-14 days apart (June). Survey stations will be established in the woodland and hayfields to encompass all habitat types. We will also check for raptor nests (hawks and owls) that can be found in woodlots.

Wildlife: Incidental observations of reptiles, amphibians and mammals will be made during all site visits. Observations will include direct sightings and indirect evidence such as calls, scat, browse, burrows, dens and nests. The presence

of cavity trees and wildlife tracks and trails will also be noted. A spring survey for early breeding frog species will not be conducted, as there are no ponds or waterbodies or vernal pools on the southern portions of the site.

Species At Risk: The Ontario Endangered Species Act (ESA) places the onus on developers to determine if Species at Risk (birds, snakes, trees, plants) are present or absent on a property through targeted in-season field surveys by a qualified biologist. Candidate habitat for Species at Risk will be evaluated through field investigations.

Woodland: The boundary of wooded area, species composition, including the age, diameter, species composition and dripline will be examined during our field surveys. The significance of the woodland based on NDMNRF criteria will be assessed from our field surveys, GIS mapping and the size of the treed area on site. The health, disturbance, presence of non-native species, disease and storm damage will be noted, as these types of forests tend to have multiple influences.

Significant Wildlife Habitat: The areas identified by NDMNRF as Deer Wintering Habitat (Stratum 2) will be verified and habitat confirmed in the field. The potential for candidate SWH will be determined using the Ecoregion 7e criteria schedules (MNR 2015).

Surface and Groundwater: No surface water features were identified within the southern portions of the property therefore no hydrological studies are proposed. As the proposed by-law amendment does not require a change in land-use no impacts are anticipated to the groundwater of the site therefore no hydrogeological studies have been proposed.

## **2.3 Analysis and Reporting**

### **2.3.1 Evaluation of Significance**

Following field surveys, the significance of all natural heritage features and species found on site will be assessed in light of the relevant policies and regulations. Species lists from our field work will be compared to the most current federal, provincial, and regional plant and wildlife lists.

### **2.3.2 Impact Assessment**

In this component of the EIA, the details of the proposed zoning change will be considered in the context of the significance of the natural features and species present in the area. Potential impacts to the Greenlands and the features and functions identified on site will be outlined. This would include the dripline of woodland. In addition, the potential for setbacks or buffers from identified features will be considered as per the County Official Plan.

### **2.3.3 Mitigation and Enhancement Recommendations**

Based on the site conditions, buffers and the proposed zoning change, we will recommend mitigation measures applicable to the potential changes in land use. Mitigation measures may include such items as sediment and erosion control, timing windows, protection areas and fencing. Considerations will also be made for the potential to maintain, restore and improve the long-term ecological functions and biodiversity of the associated Greenlands. The potential for enhancement of environmental features and functions will also be considered and when necessary provided in a proposal for monitoring.

### **2.3.4 Conclusions and Recommendations**

Project conclusions will be summarized in a concise manner at the end of the EIA report to ensure readability of the document and clear transference of information to the project team.

### 3. Deliverables

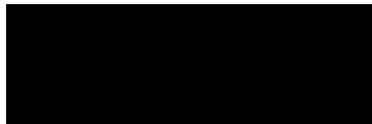
GHD will provide electronic portable document files (.pdf) of the EIA to the proponent and the agencies unless otherwise stated. This report will be prepared as per the requirements in the Official Plans and the details outlined in this Terms of Reference (ToR). The EIA will act as supporting documentation for the zoning amendment application. Our vegetation community layers and ELC boundary lines can be made available to the agencies to update their GIS mapping.

If you have any questions on this Terms of Reference, please contact me. A formal response on the receipt acceptance of the ToR is appreciated.

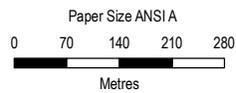
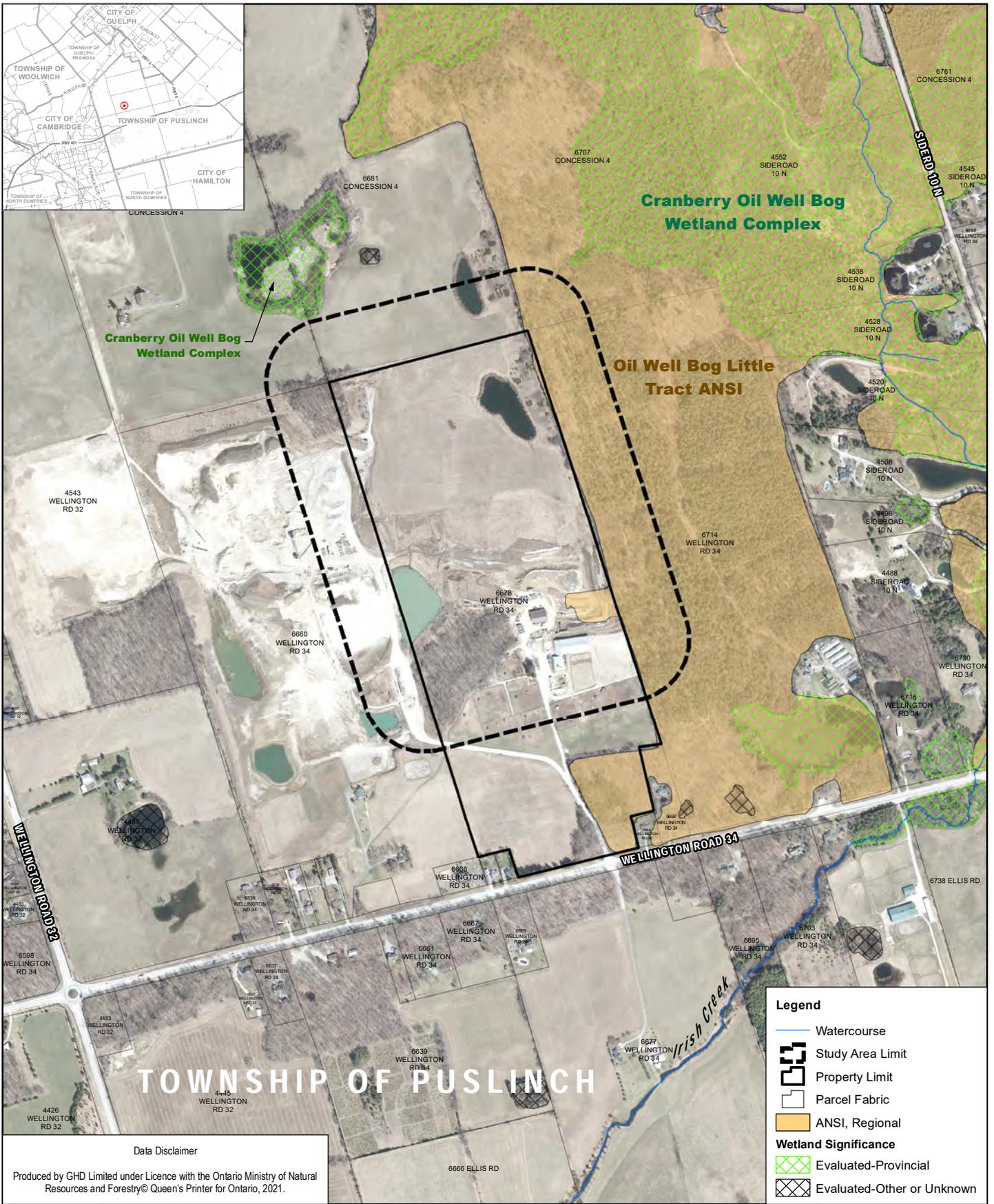
All of Which is Respectfully Submitted,  
GHD



**Katherine Ryan**  
Terrestrial and Wetland Biologist  
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**Brandon Holden**  
Senior Terrestrial Ecologist  
brandon.holden@ghd.com



**JEFF BUNN**  
 6678 WELLINGTON ROAD 34, CAMBRIDGE, ON  
 PT LOT 8, CON 3, GEO. TOWNSHIP OF PUSLINCH  
 TOWNSHIP OF PUSLINCH  
 COUNTY OF WELLINGTON

Project No. **11210029**  
 Revision No.  
 Date **Nov 26, 2021**

**TERMS OF REFERENCE  
 STUDY AREA**

**FIGURE 1**

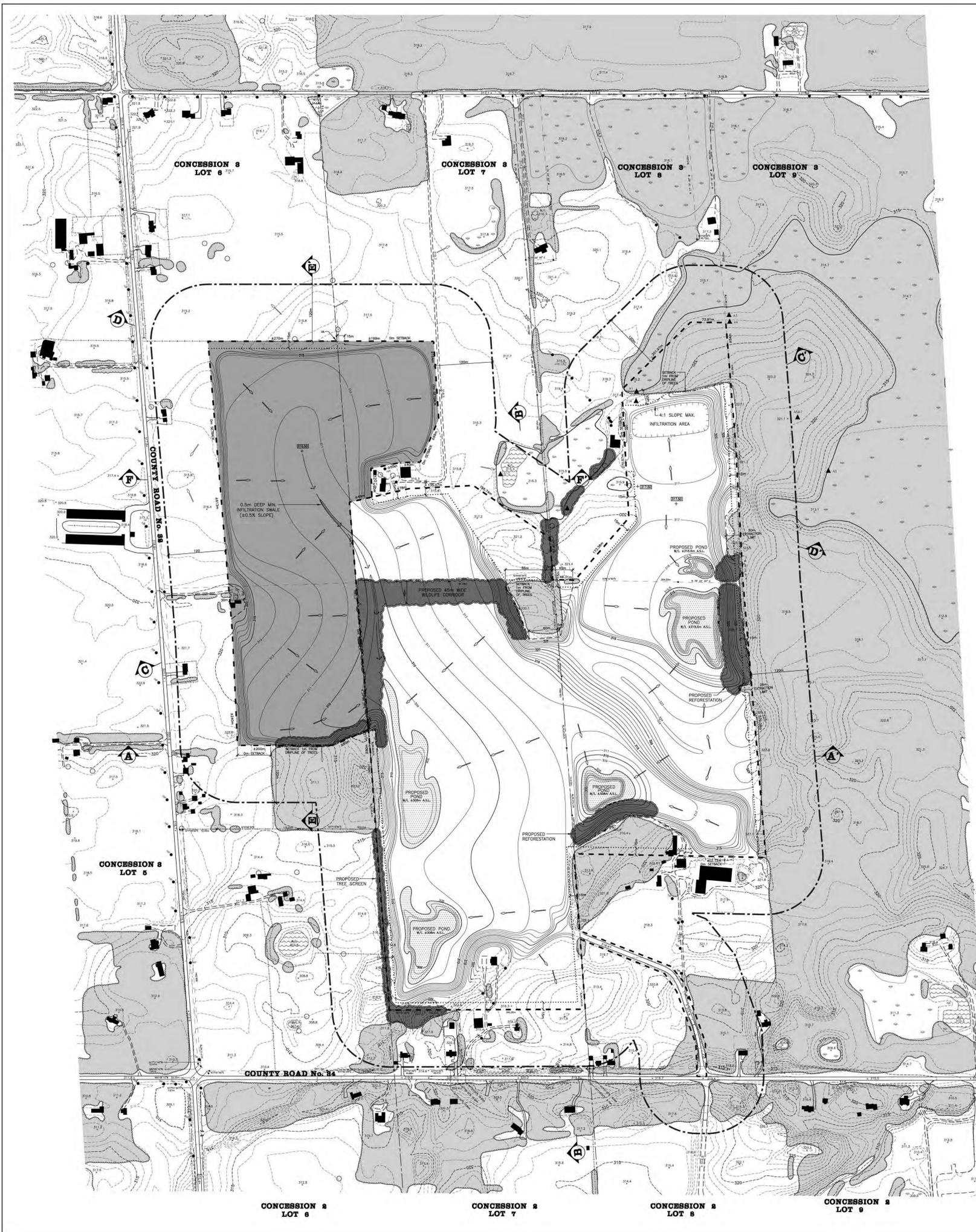


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# **Appendix B**

## **Rehabilitation Plan**



### LEGEND

- BOUNDARY OF EXISTING LICENCE AREA
- - - BOUNDARY OF LICENCE EXTENSION
- ..... REGULATORY SETBACK LINE
- LIMIT OF EXTRACTION
- 120m BOUNDARY LINE
- PROPERTY LINE
- CONCESSION/ LOT LINE

- EXISTING VEGETATION
- EXISTING SURFACE WATER
- 5m CONTOUR LINE
- 1m CONTOUR LINE
- SPOT ELEVATION
- PROPOSED 5m CONTOUR LINE
- PROPOSED 1m CONTOUR LINE
- PROPOSED SPOT ELEVATION
- PROPOSED VEGETATION
- PROPOSED POND
- BUILDING
- EXISTING HYDRO POLE
- RAILWAY
- GATE
- DIRECTION OF SURFACE WATER DRAINAGE
- SMALL STREAM, AGRICULTURAL DITCH/ SWALE
- FENCE
- PIEZOMETER

### NOTES

- TOPOGRAPHIC INFORMATION WAS PREPARED THROUGH (AIR PHOTO INTERPRETATION BY PHOTOMAP AIR SURVEYS, LIMITED, TORONTO ON, DATED FEBRUARY 4, 1997, WITH GROUND CONTROL PROVIDED BY VAN HARTEN SURVEYING LTD. GEODESIC ELEVATIONS ARE REFERENCED TO THE CORNER OF COUNTY ROADS 34 AND 52. INFORMATION UPDATED BY BASE MAPPING COMPANY APRIL, 2002 THROUGH AIR PHOTO INTERPRETATION (CIVIC LICENSE # 2001).
- REFER TO DRAWING 1 OF 5 FOR EXISTING FEATURES.  
REFER TO DRAWING 2 OF 5 FOR OPERATIONS PLAN, PHASING DIAGRAMS AND NOTES.  
REFER TO DRAWING 3 OF 5 FOR TECHNICAL RECOMMENDATIONS AND DETAILS.  
REFER TO DRAWING 4 OF 5 FOR SECTIONS.  
REFER TO DRAWING 5 OF 5 FOR REHABILITATION PLAN AND NOTES.
- REHABILITATION OF THE PROPERTY INCLUDES THE CREATION OF FOUR PONDS, FORESTED CORRIDORS, AGRICULTURAL LAND AND WILDLIFE HABITAT.
- AREA CALCULATIONS
 

	EXISTING LICENCE	LICENCE EXTENSION	TOTAL
AREA OF LICENCE TO BE REHABILITATED	168.16 Ha	327.59 Ha	495.75 Ha
AREA OF LICENCE TO BE REHABILITATED TO AGRICULTURAL LAND	155.81 Ha	327.59 Ha	483.40 Ha
AREA OF LICENCE TO BE REHABILITATED TO PONDS (PONDS NOT TO EXCEED 8.22 Ha)	4.75 Ha	-	4.75 Ha
AREA OF LICENCE TO BE REHABILITATED TO FORESTED CORRIDORS AND WILDLIFE HABITAT	7.60 Ha	10.32 Ha	17.92 Ha
THREE PLANTINGS OUTSIDE OF LICENCE BOUNDARIES	-	-	10.89 Ha
- REHABILITATION OF SLOPES SHALL BE BY USING OVERBURDEN AND TOPSOIL FROM WITHIN THE LICENCED BOUNDARY. OVERBURDEN ON SIDE SLOPES AND RECREATIONAL AREAS SHALL BE A MINIMUM OF 200mm THICK AND TOPSOIL SHALL BE A MINIMUM OF 150mm THICK. SIDESLOPES AND RECREATIONAL AREAS SHALL BE SEEDING WITH THE FOLLOWING AT A RATE OF 125 KG/Ha:
 

10% BUCKWHEAT	10% TALL FESCUE
10% ALFALFA	10% CHEERING RED FESCUE
10% WHITE CLOVER	10% PERENNIAL RYE
10% ANNUAL RYE	

 PLEASE REFER TO DRAWING 3 OF 5, DETAILS, FOR MORE INFORMATION ON BACKFILLING AND CREATION OF REHABILITATED SLOPES.
- AGRICULTURAL AREA MAY BE REHABILITATED AS FOLLOWS:
  - DEEP RIPPING TO ELIMINATE COMPACTION
  - SPREADING OVERBURDEN AND ROUGH GRADING
  - REMOVAL OF STONES LARGER THAN 100mm
  - SPREADING A MINIMUM OF 200mm OF TOPSOIL AND FINE GRAVING
  - UPON COMPLETION OF THE TOPSOIL INSTALLATION AND FINE GRADING THE LAND OWNER SHALL SEED AREAS TO A CROP APPROPRIATE TO THEIR INDIVIDUAL AGRICULTURAL OPERATIONS.
  - TOPSOIL OR OVERBURDEN (SERT MATERIAL) MAY BE IMPORTED TO IMPROVE REHABILITATION BY AUGMENTING TOPSOIL THICKNESS OR BY MAKING SIDE SLOPES GENTLER
- REHABILITATION OF PONDS SHALL INCLUDE SHALLOW AREAS FOR WEED GROWTH AND PRODUCTIVITY, AND DEEP CELLS TO CREATE COLD WATER ZONES.  
UNDERWATER HABITAT ENHANCEMENT WILL USE LOGS, STUMPS, AND WASTE ROCK. REFER TO SHORELINE HABITAT DETAIL DRAWING 3 OF 5, DETAILS. THE PONDS WILL BE SEEDING WITH SUBMERGED AND EMERGENT VEGETATION IN SHALLOW AREAS.
- ALL SURFACE DRAINAGE WILL BE DIRECTED TOWARDS THE PONDS OR INFILTRATION AREAS, THERE WILL BE NO OFFSITE SURFACE DRAINAGE.
- THE FOLLOWING VEGETATION WILL BE PLANTED ON SIDE SLOPES:
  - WOODY VEGETATION: PLANTED IN CLUSTERS AS SHOWN SHALL INCLUDE:
    - 3 YEAR OLD SEEDLINGS - WHITE PINE, RED PINE, WHITE CEDAR & LARCH
    - 10mm CALIPER, #1.5m HIGH - BALSAM POPLAR, BLACK ASH, SILVER MAPLE, WILLOW & BLACK CHERRY
    - 3 YEAR OLD PLANTS, SPACED AT 2.1m (7ft) O.C. - DOGWOOD, SLMAC AND ALDER
  - WEEDBEDS/EMERGENT VEGETATION: -SEEDING WITHIN THE SHALLOW ZONE (0 TO 0.5m DEEP)
    - NARROWLEAF CATALPA, SWEET FLAG AND NORTHERN ARROWHEAD.
  - SUBMERGED VEGETATION: -SEEDING WITHIN THE DEEP WATER ZONE (0.5 TO 1.0m DEEP)
    - NORTHERN WATERLILY, COONAWA AND BLUEWATER PONDWEED.
- ALL VEGETATION PLANTED DURING THE OPERATION OF THIS LICENCE WILL BE MAINTAINED IN A HEALTHY VIGOROUS GROWING CONDITION. DEAD PLANTS WITHIN THE TREE SCREEN WILL BE REPLACED WITHIN TWO YEARS. PLANT SPECIES AND SPACING ARE SUBJECT TO MODIFICATION DUE TO AVAILABILITY AND SITE CONDITIONS.
- ALL BUILDINGS, EQUIPMENT AND MACHINERY ASSOCIATED WITH THE EXTRACTION OPERATIONS WILL BE REMOVED UPON COMPLETION OF EXTRACTION. RESIDENTIAL AND FARM BUILDINGS AND FARMING EQUIPMENT WILL REMAIN.
- A PIEZOMETER SHALL BE INSTALLED DURING PHASE "A" OPERATIONS (AS SHOWN) AT ±319m a.s.l. FINAL REHABILITATED GRADE IN THE ADJACENT EXTRACTION AREA SHALL BE A MINIMUM OF 0.5m ABOVE THE ESTABLISHED WATER TABLE (EXTRACTION AREA).
- IT IS ANTICIPATED THAT THE PIEZOMETER ELEVATIONS ACROSS THE EXISTING LICENCE AND CONCESSION AREA WILL REMAIN RELATIVELY UNCHANGED. INFORMATION WAS OBTAINED FROM HYDROLOGICAL ASSESSMENTS COMPLETED BY TERRACON INVESTIGATIONS DATED AUGUST 1997, MAY 4, 1998 AND MAY 20, 1998 AND BY BLACKBURN HYDROLOGIST INC. DECEMBER 2002.

NO.	DATE	REVISIONS	OWNER	H.A.	D.M.A.K.	NO.	DATE	REVISIONS	OWNER	H.A.	D.M.A.K.
2.	MAR. '03	AS PER OWNER COMMENTS									
1.	FEB. '03	AS PER OWNER COMMENTS									

Pre Licence Review      Site Plan Amendments

**Harrington and Hoyle Ltd.**  
 LANDSCAPE ARCHITECTS  
 91 Anderson Avenue, Unit #2  
 Markham, Ontario, L6E 1A5  
 Telephone: (905) 294-8282  
 Fax: (905) 294-7823  
 Office in Markham and Cambridge

**Project Name**  
**CAPITAL CAPITAL PAVING INC.**  
**Wellington Pit #5 and Extension**  
**Licence Number 20085**  
 PART LOTS 6, 7 & 8, CONCESSION 8  
 TOWNSHIP OF PUSLUNCH, WELLINGTON COUNTY

**Scale**  
 1:3000  
 0 10 20 30 40 50 60 70 80 90 100 110 120m

**Drawing Status**  
 PRELIMINARY FOR DISCUSSION

**Drawn** Checked Issue Date Project Number  
 R.M. G.D.H./ B.J.                     02-06

**Drawing Title** Drawing Number  
**REHABILITATION PLAN** **5 OF 5**

PLOT DATE: MARCH 20, 2003  
 FILE NAME: 02-06-COMP-0003-5.DWG

# **Appendix C**

## **Photographic Inventory**

## EIA – Rezoning: Photographic Inventory



Photo 1 - April 5, 2022. Overview of the disposal area for the separated soils as part of the hydrovac business



Photo 2 - April 5, 2022. Stormwater pond, with aggregate pit beyond, facing northwest.



Photo 3 - April 5, 2022. Northeast pond, facing south



Photo 4 - April 5, 2022. The Provincially Significant Wetland Cranberry Oil Well Bog Wetland, outside of the 120 m buffer around the property, surrounded by intermittent red osier dogwood (*Garrya* sp.) and cattails (*Thypha* sp.). Facing south.



Photo 5 - April 5, 2022. Pasturelands just southwest of EXI zoned limit, facing west.



Photo 6 - April 5, 2022. Hayfield community at the northern end of the property, facing north.



Photo 7 - April 5, 2022. FOD5 community on the east side of the Study Area, facing west towards fill pile.



Photo 8 - April 5, 2022. CUT1 community identified in the northeastern corner of the Subject Lands, between the north pond and the eastern limit of the property.



Photo 9 - April 5, 2022. FOD5 community pocket identified on the western limit of the property, facing west.



Photo 10 - April 5, 2022. CUM1-1 community identified near the western limit of the property, north of the FOD5 deciduous forest pocket and adjacent to the northwest stormwater pond. Facing southwest.



Photo 11 - April 5, 2022. FOC1-2 community, facing east.



Photo 12 - April 5, 2022. FOM2-2, within the eastern forest (Wellington County's Little Tract)



Photo 13 - April 5, 2022. Barn structure



Photo 14 - April 5, 2022. Cavity # 1, sugar maple (*Acer saccharum*), FOD5 community



Photo 15 - April 5, 2022. Cavity # 2, sugar maple, within the western FOD5 community.



Photo 16 - April 5, 2022. Snag # 4, sugar maple within the western FOD5 community.

# Appendix D

## Plant List

## Appendix D

Plant Species List  
Environmental Impact Assessment – Rezoning  
2374868 Ontario Inc  
6678 Wellington Rd. 34  
Township of Puslinch

Scientific Name	Common Name	Coefficient of Conservatism (CC)	Wetness Index	Weediness Index	Provincial Status (S-Rank)	ESA Status	SARA Status	Local Status Wellington Dufferin
<b>Athyriaceae</b>	<b>Athyriaceae Family</b>							
<i>Dryopteris marginalis</i>	Marginal Wood Fern	5	3		S5			X
<b>Cupressaceae</b>	<b>Cypress Family</b>							
<i>Juniperus virginiana</i> var. <i>virginiana</i>	Eastern Red Cedar	4	3		S5			X
<i>Thuja occidentalis</i>	Eastern White Cedar	4	-3		S5			X
<b>Pinaceae</b>	<b>Pine Family</b>							
<i>Picea abies</i>	Norway Spruce		5	-1	SNA			X
<i>Picea glauca</i>	White Spruce	6	3		S5			X
<i>Pinus resinosa</i>	Red Pine	8	3		S5			X
<i>Pinus strobus</i>	Eastern White Pine	4	3		S5			X
<i>Pinus sylvestris</i>	Scots Pine		3	-3	SNA			X
<i>Viburnum opulus</i> ssp. <i>opulus</i>	Cranberry Viburnum		-3		SNA			X
<b>Anacardiaceae</b>	<b>Cashew Family</b>							
<i>Rhus typhina</i>	Staghorn Sumac	1	5		S5			X
<b>Apiaceae</b>	<b>Carrot Family</b>							
<i>Daucus carota</i>	Wild Carrot		5	-2	SNA			X
<i>Asclepias syriaca</i>	Common Milkweed	0	5		S5			X
<b>Asteraceae</b>	<b>Aster Family</b>							
<i>Ambrosia artemisiifolia</i>	Common Ragweed	0	3		S5			X
<i>Arctium lappa</i>	Great Burdock		3		SNA			X
<i>Cirsium vulgare</i>	Bull Thistle		3	-1	SNA			X
<i>Eutrochium maculatum</i> var. <i>maculatum</i>	Spotted Joe Pye Weed	3	-5		S5			X
<i>Rhaponticum repens</i>	Russian Knapweed		5		SNA			X
<i>Solidago canadensis</i>	Canada Goldenrod	1	3		S5			X
<i>Tussilago farfara</i>	Coltsfoot		3	-2	SNA			X
<i>Xanthium strumarium</i>	Rough Cocklebur	2	0		S5			X
<i>Betula papyrifera</i>	Paper Birch	2	2		S5			X
<i>Ostrya virginiana</i>	Eastern Hop-Hornbeam	4	4		S5			X
<b>Brassicaceae</b>	<b>Mustard Family</b>							
<i>Alliaria petiolata</i>	Garlic Mustard		0	-3	SNA			X
<b>Caprifoliaceae</b>	<b>Honeysuckle Family</b>							
<i>Dipsacus fullonum</i>	Common Teasel		3	-1	SNA			X
<i>Cornus stolonifera</i>	Red-Osier Dogwood	2	-3		S5			X
<b>Fabaceae</b>	<b>Legume Family</b>							

## Appendix D

Plant Species List  
 Environmental Impact Assessment – Rezoning  
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<i>Medicago sativa ssp. sativa</i>	Alfalfa		5	-1	SNA		X
<i>Trifolium pratense</i>	Red Clover		3	-2	SNA		X
<i>Quercus rubra</i>	Northern Red Oak	6	3		S5		X
<i>Juglans nigra</i>	Black Walnut	5	3		S4?		X
<b>Lamiaceae</b>	<b>Mint Family</b>						
<i>Leonurus cardiaca ssp. cardiaca</i>	Common Motherwort		5	-2	SNA		X
<i>Tilia americana</i>	Basswood	4	3		S5		X
<b>Oleaceae</b>	<b>Olive Family</b>						
<i>Fraxinus americana</i>	White Ash	4	3		S4		X
<i>Fraxinus pennsylvanica</i>	Green Ash	3	-3		S4		X
<i>Syringa vulgaris</i>	Common Lilac		5	-2	SNA		X
<b>Papaveraceae</b>	<b>Poppy Family</b>						
<i>Chelidonium majus</i>	Greater Celandine		5	-3	SNA		X
<b>Polygonaceae</b>	<b>Buckwheat Family</b>						
<i>Rumex crispus</i>	Curled Dock		0	-2	SNA		X
<b>Rhamnaceae</b>	<b>Buckthorn Family</b>						
<i>Rhamnus cathartica</i>	European Buckthorn		0	-3	SNA		X
<b>Rosaceae</b>	<b>Rose Family</b>						
<i>Prunus serotina var. serotina</i>	Black Cherry	3	3		S5		X
<i>Rubus idaeus ssp. strigosus</i>	North American Red Raspberry	0	-2		S5		X
<b>Salicaceae</b>	<b>Willow Family</b>						
<i>Populus balsamifera</i>	Balsam Poplar	4	-3		S5		X
<i>Populus grandidentata</i>	Large-Toothed Aspen	5	3		S5		X
<i>Salix discolor</i>	Pussy Willow	3	-3		S5		X
<b>Sapindaceae</b>	<b>Maple Family</b>						
<i>Acer negundo</i>	Manitoba Maple	0	-2		S5		X
<i>Acer saccharinum</i>	Silver Maple	5	-3		S5		X
<i>Acer saccharum</i>	Sugar Maple	4	3		S5		X
<b>Ulmaceae</b>	<b>Elm Family</b>						
<i>Ulmus americana</i>	White Elm	3	-2		S5		X
<b>Poaceae</b>	<b>Grass Family</b>						
<i>Calamagrostis canadensis var. canadensis</i>	Bluejoint Reedgrass	4	-5		S5		X
<i>Phalaris arundinacea var. arundinacea</i>	Reed Canary Grass	0	-3		S5		X
<i>Phragmites australis ssp. australis</i>	European Reed		-3		SNA		X
<b>Typhaceae</b>	<b>Cattail Family</b>						
<i>Typha latifolia</i>	Broad-Leaved Cattail	3	-5		S5		X

## Appendix D

### Plant Species List Environmental Impact Assessment – Rezoning 2374868 Ontario Inc 6678 Wellington Rd. 34 Township of Puslinch

<b>Notes</b>
<b>Co-efficient of Conservatism:</b> This value, ranging from 0 (low) to 10 (high), is based on a species tolerance of disturbance and fidelity to a specific habitat integrity.
<b>Weediness Index:</b> This value, ranging from -1 (low) to -3 (high) quantifies the potential invasiveness of non-native plants. In combination with the percentage of non-native plants, it can be used as an indicator of disturbance.
<b>Wetness Index:</b> This value, ranging from -5 (obligate wetland) to 5 (upland) provides the probability of a species occurring in wetland or upland habitats.
<p><b>S-Ranks-</b></p> <p><b>S1: Critically Imperiled</b> - Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.</p> <p><b>S2: Imperiled</b> - Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province. vulnerable to extirpation.</p> <p><b>S4: Apparently Secure</b> - Uncommon but not rare; some cause for long-term concern due to declines or other factors.</p> <p><b>S5: Secure</b> - Common, widespread, and abundant in the nation or state/province.</p> <p><b>SH: Possibly Extirpated (Historical)</b>—Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years. A species or community could become NH or SH without such a 20-40 year delay if the only known occurrences in a nation or state/province were destroyed or if it had been extensively and unsuccessfully looked for. The NH or SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurrences.</p> <p><b>SR: Reported</b> in Ontario, but without persuasive documentation.</p> <p><b>SX: Presumed Extirpated</b>—Species or community is believed to be extirpated from the nation or state/province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.</p> <p><b>SE: Exotic;</b> not believed to be a native component of Ontario's flora. Numerical rankings after SE follow designations described above for native species.</p> <p><b>SNA: Unranked</b> — Status not assigned.</p> <p><b>SU: Unranked</b> — Nation or state/province conservation status not yet assessed.</p>
<p><b>ESA Status</b></p> <p>Endangered Species Act (ESA), 2007. Extirpated - EXP, Endangered - END, Threatened - THR, Special Concern - SC</p>
<p><b>SARA Status</b></p> <p>Species at Risk Act (SARA), 2002. Extirpated - EXP, Endangered - END, Threatened - THR, Special Concern - SC</p>
<p><b>Local Status Wellington:</b> Riley, J.L., 1989. Distribution and Status of the Vascular Plants of Central Region. Ontario Ministry of Natural Resources, Central Region, Richmond Hill, ON. 110 pp.</p> <p>X - No status. Present and native in the CZ but no status assigned because of lack of information, often due to confusion with similar species</p>

# **Appendix E**

## **Bird List**

Appendix E

Bird List  
 Environmental Impact Assessment – Rezoning  
 2374868 Ontario Inc  
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 Township of Puslinch

Common Name	Scientific Name	Ontario Status	COSEWIC	SARA
Canada Goose	<i>Branta canadensis</i>	S5		
Bufflehead	<i>Bucephala albeola</i>	S4		
Hooded Merganser	<i>Lophodytes cucullatus</i>	S5B,S5N		
Turkey Vulture	<i>Cathartes aura</i>	S5B		
Sandhill Crane	<i>Grus canadensis</i>	S5B	NAR	
Killdeer	<i>Charadrius vociferus</i>	S5B,S5N		
Ring-billed Gull	<i>Larus delawarensis</i>	S5B,S4N		
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	S4		
Downy Woodpecker	<i>Picoides pubescens</i>	S5		
Blue Jay	<i>Cyanocitta cristata</i>	S5		
Black-capped Chickadee	<i>Poecile atricapilla</i>	S5		
American Robin	<i>Turdus migratorius</i>	S5B		
Song Sparrow	<i>Melospiza melodia</i>	S5B		
Dark-eyed Junco	<i>Junco hyemalis</i>	S5B		
Northern Cardinal	<i>Cardinalis cardinalis</i>	S5		
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	S4B		
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S4		
Common Grackle	<i>Quiscalus quiscula</i>	S5B		
Pine Siskin	<i>Spinus pinus</i>	S4B		

Acronyms:

- S1: Extremely rare in Ontario; usually fewer than 5 occurrences
- S1S2: Extremely rare to very rare in Ontario
- S2: Very rare in Ontario; usually betw 5-20 occurrences
- S2S3: Very rare to uncommon in Ontario
- S3: Rare to uncommon in Ontario; usually between 20-100 occurrences
- S3S4: Rare to common in Ontario
- S4: Common in Ontario; apparently secure, usually more than 100 occurrences
- S4S5: Common to very common in Ontario
- S5: Very common in Ontario, demonstrably secure
- SE: Exotic; not believed to be a native component of Ontario's fauna
- SHB: Hypothetical breeder; not positively confirmed breeding in Ontario
- SZ: Not of practical conservation concern as there are no clearly definable occurrences
- SZB: No clearly definable occurrences of breeding
- SZN: no clearly definable occurrences of a non-breeding species

- END: Endangered
- END-R: Regulated under the Ontario Endangered Species Act
- THR: Threatened
- SC: Special Concern
- NAR: Not At Risk

# **Appendix F**

## **Screening**

Appendix F

SAR Background Screening  
 Environmental Impact Assessment – Rezoning  
 2374868 Ontario Inc.  
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Common Name	Scientific Name	Species At Risk Act (Sch 1) <sup>1</sup>	Endangered Species Act <sup>2</sup>	Habitat Requirements	Likelihood to Occur within Site	Rationale to Occur
<b>Amphibians</b>						
Western chorus frog - Great Lakes St. Lawrence/Canadian Shield Population	<i>Pseudacris triseriata</i>	THR	—	In Ontario, habitat of this amphibian species typically consists of marshes or wooded wetlands, particularly those with dense shrub layers and grasses, as this species is a poor climber. They will breed in almost any fishless pond including roadside ditches, gravel pits and flooded swales in meadows. This species hibernates in terrestrial habitats under rocks, dead trees or leaves, in loose soil or in animal burrows. During hibernation, this species is tolerant of flooding (Environment Canada 2015).	Low-	No wetlands within the Subject Lands
<b>Birds</b>						
Bank swallow	<i>Riparia riparia</i>	THR	THR	In Ontario, the bank swallow breeds in a variety of natural and anthropogenic habitats, including lake bluffs, stream and river banks, sand and gravel pits, and roadcuts. Nests are built in a vertical or near-vertical bank. Breeding sites are typically located near open foraging sites such as rivers, lakes, grasslands, agricultural fields, wetlands and riparian woods. Forested areas are generally avoided (Garrison 1999).	Low-	Soil piles were actively managed and disturbed with no nesting opportunity
Barn swallow	<i>Hirundo rustica</i>	THR	THR	In Ontario, barn swallow breeds in areas that contain a suitable nesting structure, open areas for foraging, and a body of water. This species nests in human made structures including barns, buildings, sheds, bridges, and culverts. Preferred foraging habitat includes grassy fields, pastures, agricultural cropland, lake and river shorelines, cleared right-of-ways, and wetlands (COSEWIC 2011). Mud nests are fastened to vertical walls or built on a ledge underneath an overhang. Suitable nests from previous years are reused (Brown and Brown 1999).	Moderate	A barn existed on site, however is actively used for storage and when doors are closed there are no openings or gaps for entrance. No old or current nests identified in the barn
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR	In Ontario, bobolink breeds in grasslands or graminoid dominated hayfields with tall vegetation (Gabhauer 2007). Bobolink prefers grassland habitat with a forb component and a moderate litter layer. They have low tolerance for presence of woody vegetation and are sensitive to frequent mowing within the breeding season. They are most abundant in established, but regularly maintained, hayfields, but also breed in lightly grazed pastures, old or fallow fields, cultural meadows and newly planted hayfields. Their nest is woven from grasses and forbs. It is built on the ground, in dense vegetation, usually under the cover of one or more forbs (Martin and Gavin 1995).	Moderate	Potential within the cultural field meadows if left unmaintained-however these were all active hayfields

Appendix F

SAR Background Screening  
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 Township of Puslinch

Common Name	Scientific Name	Species At Risk Act (Sch 1) <sup>1</sup>	Endangered Species Act <sup>2</sup>	Habitat Requirements	Likelihood to Occur within Site	Rationale to Occur
Chimney swift	Chaetura pelagica	THR	THR	In Ontario, chimney swift breeding habitat is varied and includes urban, suburban, rural and wooded sites. They are most commonly associated with towns and cities with large concentrations of chimneys. Preferred nesting sites are dark, sheltered spots with a vertical surface to which the bird can grip. Unused chimneys are the primary nesting and roosting structure, but other anthropogenic structures and large diameter cavity trees are also used (COSEWIC 2007).	Low-	No structures with chimneys
Common nighthawk	Chordeiles minor	THR	SC	These aerial foragers require areas with large open habitat. This includes farmland, open woodlands, clearcuts, burns, rock outcrops, alvars, bog ferns, prairies, gravel pits and gravel rooftops in cities (Sandilands 2007)	Moderate	No-the site was continuously disturbed with continuous truck movement
Eastern meadowlark	Sturnella magna	THR	THR	In Ontario, the eastern meadowlark breeds in pastures, hayfields, meadows and old fields. Eastern meadowlark prefers moderately tall grasslands with abundant litter cover, high grass proportion, and a forb component (Hull 2003). They prefer well drained sites or slopes, and sites with different cover layers (Roseberry and Klimstra 1970)	Moderate	Potential within the cultural field meadows if left unmaintained-however these were all active hayfields
Eastern wood-pewee	Contopus virens	SC	SC	The eastern wood-pewee inhabits a wide variety of wooded upland and lowland habitats but is most commonly associated with the mid-canopy of forest clearings, and edge habitat in deciduous and mixed forests. It also occurs in anthropogenic habitats that provide an open forested aspect such as parks and suburban neighborhoods. It prefers intermediate-age mature forest stands with little understory vegetation (COSEWIC 2012).	High	suitable habitat within wooded communities in the Study Area
Grasshopper sparrow pratensis subspecies	Ammodramus savannarum (pratensis subspecies)	SC	SC	In Ontario, grasshopper sparrow is found in medium to large grasslands with low herbaceous cover and few shrubs. It also uses a wide variety of agricultural fields, including cereal crops and pastures. Close-grazed pastures and limestone plains (e.g. Carden and Napanee Plains) support highest density of this bird in the province (COSEWIC 2013).	Moderate	Potential within the cultural field meadows if left unmaintained-however these were all active hayfields

Appendix F

SAR Background Screening  
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Common Name	Scientific Name	Species At Risk Act (Sch 1) <sup>1</sup>	Endangered Species Act <sup>2</sup>	Habitat Requirements	Likelihood to Occur within Site	Rationale to Occur
Wood thrush	Hylocichla mustelina	THR	SC	In Ontario, wood thrush breeds in moist, deciduous hardwood or mixed stands that are often previously disturbed, with a dense deciduous undergrowth and with tall trees for singing perches. This species selects nesting sites with the following characteristics: lower elevations with trees less than 16 m in height, a closed canopy cover (>70 %), a high variety of deciduous tree species, moderate subcanopy and shrub density, shade, fairly open forest floor, moist soil, and decaying leaf litter (COSEWIC 2012).	High	suitable habitat within wooded communities in the Study Area
<b>Mammals</b>						
Eastern small-footed myotis	Myotis leibii	—	END	This species is not known to roost within trees, but there is very little known about its roosting habits. The species generally roosts on the ground under rocks, in rock crevices, talus slopes, or rock piles, and occasionally inhabits buildings. Areas near the entrances of caves or abandoned mines may be used for hibernaculum, where the conditions are drafty with low humidity, and may be subfreezing (Humphrey 2017).	Moderate	Cavity trees identified within the Subject Lands
Little brown myotis	Myotis lucifugus	END	END	In Ontario, this species range is extensive and covers much of the province. It will roost in both natural and man-made structures. They require a number of large dead trees, in specific stages of decay and that project above the canopy in relatively open areas (Lacki, 2007). May form nursery colonies in the attics of buildings within 1 km of water. Caves or abandoned mines may be used for hibernaculum, but high humidity and stable above freezing temperatures are required.	Moderate	Cavity trees identified within the Subject Lands
Tri-colored bat	Perimyotis subflavus	END	END	In Ontario, tri-colored bat may roost in foliage, in clumps of old leaves, hanging moss or squirrel nests. They are occasionally found in buildings although there are no records of this in Canada (Poissant et al, 2010). They typically feed over aquatic areas with an affinity to large-bodied water and will likely roost in close proximity to these. Hibernation sites are found deep within caves or mines in areas of relatively warm temperatures. These bats have strong roost fidelity to their winter hibernation sites and may choose the exact same spot in a cave or mine from year to year.	Moderate	Potential within the wooded communities in the Study Area

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SAR Background Screening  
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Common Name	Scientific Name	Species At Risk Act (Sch 1) <sup>1</sup>	Endangered Species Act <sup>2</sup>	Habitat Requirements	Likelihood to Occur within Site	Rationale to Occur
Northern myotis	Myotis septentrionalis	END	END	In Ontario, this species range is extensive and covers much of the province. It will usually roost in hollows, crevices, and under loose bark of mature trees. Roosts may be established in the main trunk or a large branch of either living or dead trees. Caves or abandoned mines may be used for hibernaculum, but high humidity and stable above freezing temperatures are required (COSSARO 2012).	Moderate	Cavity trees identified within the Subject Lands
<b>Reptiles</b>						
Eastern ribbonsnake - (Great Lakes population)	Thamnophis sauritus	SC	SC	In Ontario, eastern ribbonsnake is semi-aquatic, and is rarely found far from shallow ponds, marshes, bogs, streams or swamps bordered by dense vegetation. They prefer sunny locations and bask in low shrub branches. Hibernation occurs in mammal burrows, rock fissures or even ant mounds (COSEWIC 2012).	Low-	No wetlands within the Subject Lands
Milksnake	Lampropeltis triangulum	SC	NAR	In Ontario, milksnake uses a wide range of habitats including prairies, pastures, hayfields, wetlands and various forest types, and is well-known in rural areas where it frequents older buildings. Proximity to water and cover enhances habitat suitability. Hibernation takes place in mammal burrows, hollow logs, gravel or soil banks, and old foundations (COSEWIC 2014).	Low-	a lack of cover within the Subject Lands and level of disturbance would not create suitable habitat conditions
Snapping turtle	Chelydra serpentina	SC	SC	In Ontario, snapping turtle utilizes a wide range of waterbodies, but shows preference for areas with shallow, slow-moving water, soft substrates and dense aquatic vegetation. Hibernation takes place in soft substrates under water. Nesting sites consist of sand or gravel banks along waterways or roadways (COSEWIC 2008).	Low-	no wetlands within the Subject Lands, two offline ponds , the pond in the southwest was a Stormwater Management Pond with the Northern pond lacking vegetation
<b>Vascular Plants</b>						
Butternut	Juglans cinerea	END	END	In Ontario, butternut is found along stream banks, on wooded valley slopes, and in deciduous and mixed forests. It is commonly associated with beech, maple, oak and hickory (Voss and Reznicek 2012). Butternut prefers moist, fertile, well-drained soils, but can also be found in rocky limestone soils. This species is shade intolerant (Farrar 1995).	Low-	No butternut trees identified during field surveys
<b>Notes</b>						
1 Species at Risk Act (SARA), 2002. Schedule 1; Part 1 (Extirpated), Part 2 (Endangered), Part 3 (Threatened), Part 4 (Special Concern)						
2 Endangered Species Act (ESA), 2007. Schedule 1 (Extirpated - EXP), Schedule 2 (Endangered - END), Schedule 3 (Threatened - THR), Schedule 4 (Special Concern - SC)						



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February 20, 2024

Lynn Banks  
Development and Legislative Coordinator  
Township of Puslinch  
7404 Wellington Rd. 34  
Puslinch, Ontario N0B 2J0

**Response to Peer Review Comment items 4, 6 & 7 on an Environmental Impact Assessment in Support of a Zoning By-Law Amendment at 6678 Wellington Rd. 34, Township of Puslinch**

Dear Lynn,

Please find enclosed our responses to Dougan & Associates (Dougan) regarding their review of GHD Limited (GHD)'s Environmental Impact Assessment (EIA) (GHD, 2022) in support of a Zoning Bylaw Amendment. GHD had prepared an updated EIA and response to comments on March 7, 2023. Dougan's original comments were dated August 10, 2022.

Responses are to comments outlined in the March 14, 2023 letter from Todd Fell and Christina Olar of Dougan and Associates addressed to Lynn Banks, Development and Legislative Coordinator, Township of Puslinch. This response is prepared to address the natural heritage items 4, 6 & 7 of Dougan's second set of comments in relation to the original comments provided to GHD. All other comments were considered planning related and will be addressed separately with other planning related items. Dougan's comments appear in **Table 1** below and are followed by GHD's responses.

Please contact the undersigned if you have any questions or require further project support.

Regards



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Table 1 Dougan & Associates Comments and GHD Responses

Item #	Peer Review Comment: June 29, 2022	Comment Addressed in EIA dated August 10, 2022? (Y/N)	Additional Comments and Clarifications (Dougan & Assoc.) March 14, 2023	GHD Response February 16, 2024
4	<p><i>(For EIS-Zoning Bylaw Amendment)-</i> The report identifies two ponds adjacent to wooded areas representing potential amphibian habitat. Please characterize the potential presence of amphibian habitat and assess the potential impacts and associated mitigation measures for proposed land uses and activities</p>	<p>Partially, discussed sections 5.2.2 and Table 2. See additional comment.</p>	<p>Table 2 notes that “Marsh Monitoring surveys were not completed for the Subject Lands, however these ponds may provide suitable habitat for breeding amphibians in the absence of surveys.” We are in agreement with this statement. Potential impacts (including any indirect impacts) and mitigation strategies related to amphibian breeding SWH are not discussed in the EIS. Please provide a clear impact assessment and mitigation strategies regarding potential amphibian breeding SWH.</p>	<p>Sections 4.2.5 and <b>Table 2</b> of the EIA identify the potential presence of amphibian habitat on site within the ponds located on the northern limits of the Study Area. GHD adopted the precautionary principle (i.e., we assumed amphibians were present). Section 3.2.1 of the EIA characterizes the vegetation communities that may afford amphibian breeding habitat which included the open aquatic (OAO) ELC code. These aquatic communities were identified on the northern limits of the Study Area; one pond (OAO) within the Subject Lands (approximately 200 metres (m) from the operational boundary); the other pond (OAO) north of the Subject Lands over &gt;200 meters from operation area (Refer to <b>Attachment A</b> (Figure 2) for community locations).</p> <p>Potential direct and indirect impacts may include vehicle/amphibian interactions (direct) and potential effects on water quality or quantity (indirect). However, minimal impacts are anticipated on the amphibian breeding within the Study Area due to the distance from the operational area, an alternative/preferred pathway for travel, adjacent land uses and proposed mitigation to be implemented.</p> <p>The ponds will remain outside of the operational area for the hydrovac facility located a minimum of 200 m away. As indicated in the Significant Wildlife Habitat Ecoregion Criteria Schedule 6E the habitat for amphibian woodland breeding may include up to 230 m from the suitable pond. There is potential for vehicle interaction (direct impacts) to occur within the outer 30 m of this extent however based on adjacent land use and available alternate/preferred pathways for travel (woodlands and thicket to the east, agricultural lands for the balance), the impact to amphibian movement into the operational area at this distance is low.</p> <p>The alternative/preferred pathway for movement of amphibians between the wetland and the closest woodland would be the travel corridor utilized most frequently by amphibian species potentially using the ponds. The travel corridor would include portions of the CUT1 and the woodlands directly to the east (FOM2-2, FOC1-2). There may also be potential for amphibian movement between ponds, utilizing a similar corridor to the woodlands identified east of the Subject Lands. The remaining adjacent lands to the north, west and south of the ponds are active agricultural lands. Although the hay crop may provide temporary foraging habitat for amphibians, these lands are harvested on a regular basis. A monoculture crop is absent of cover, that may provide important protection from predators. However, with active agricultural fields comprising of most of this area, amphibian within these fields would be low and the impacts anticipated to be minimal.</p> <p>Although the impacts are anticipated to be limited, heavy duty silt fencing erosion and sediment control (ESC) measure is proposed to be installed and maintained as exclusion fencing along the northern limits of the operational area to minimize any vehicle interactions with amphibian movement.</p>

Item #	Peer Review Comment: June 29, 2022	Comment Addressed in EIA dated August 10, 2022? (Y/N)	Additional Comments and Clarifications (Dougan & Assoc.) March 14, 2023	GHD Response February 16, 2024
				<p>Potential indirect impacts may include negative impacts to the water quality or water quantity of the breeding amphibian habitat. The ponds are 200 m from the operational area. No siltation or runoff of deleterious substances are anticipated. Silt fencing is proposed along the northern limits of the operational area and are outside of the limits of disturbance. The runoff of water from the operational area are directed towards the stormwater management pond directly to the west of the operational limits.</p> <p>In summary, no negative impacts are anticipated on the amphibian breeding habitat as a result of the hydrovac facility based on the distance from the operation area, available alternative/preferred pathways and proposed ESC mitigation.</p>
6	<p>Please provide a figure showing the limit of disturbance for all activities in relation to natural heritage constraints and applicable buffers. Please include proposed mitigation including buffers and sedimentation and erosion control measures.</p>	<p>Partially; provided in Figure 3. See additional comments related to Figure 3.</p>	<p>Figure 3 identifies the proposed extraction area and a 10 m buffer to the Oil Well Bog Little Tract ANSI. Given the significance of the feature (Significant Woodland, Greenlands, ANSI) and its function as candidate and confirmed SWH, additional rationale is requested to support the recommended 10 m woodland buffer and fencing is sufficient, including an assessment of potential indirect impacts.</p> <p>Figure 3 does not show a buffer or other mitigative measures (e.g. silt fencing, permanent fencing) applied to the FOD5 community in the southwest portion of the study area. This feature is included in the Township's Environmental Protection Overlay, and based on the ELC description, it appears this woodland is of relatively high quality and contains a high proportion of native species. It is unclear if this</p>	<p>Existing literature as documented within the Ecological Buffer Guideline Review by Beacon Environmental (2012).<sup>1</sup> indicates that the most readily measurable effects of immediate human disturbance (i.e., waste disposal, landscaping, construction) on woodlands occurs within the first 10 – 20 m, with most severe impacts within 10 m. Based on the Subject Lands existing topographical features (i.e. berm), elevation differences and current land uses the 10 m buffer was rationalized to be most appropriate to provide adequate protection of the woodlands.</p> <p>A large berm, with a significant elevation drop to the operational area exists along the eastern boundary of the property. This vegetative berm provides a physical barrier to all activities occurring as part of the hydrovac operation. Based on the topography of the site currently the berm elevation drops significantly with approximately a 5 m elevation difference from the ground elevation of the adjacent property. Retaining the vegetated berm and narrow transition meadow abutting the eastern woodland will provide suitable protection to the tree health and woodland communities. Any potential runoff or silt/sediment released as a result of the operational activities will be contained on the operational, west side of the berm. To afford protection to the rooting area of the largest trees, a 10-metre buffer has been recommended. This distance would be inclusive of the vegetated berm area. The EIA recommends that the limited buffer area currently void of vegetation be seeded with native herbaceous seed. This will provide additional support from ESC and enhance the diversity of herbaceous species within the Subject Lands.</p> <p>Implementing greater than a 10 m buffer would not provide any additional protection to the woodland feature if preserved based on the topographical differences (much lower to the east with an established, steep and stable drop at the property line demarked with a page wire fence). With the on-going operations, no evidence of degradation to the forest edge including, wind blow, abundance of invasive species, sediment encroachment have been observed to date.</p>

<sup>1</sup> Beacon Environmental Ltd. 2012. Ecological Buffer Guideline Review (December 2012). 130 pp

Item #	Peer Review Comment: June 29, 2022	Comment Addressed in EIA dated August 10, 2022? (Y/N)	Additional Comments and Clarifications (Dougan & Assoc.) March 14, 2023	GHD Response February 16, 2024
			<p>woodland has been assessed for significance. Please provide an assessment of the FOD5 woodland significance, describe potential impacts, and, where applicable, proposed mitigation strategies to demonstrate no negative impact to the feature or its ecological functions.</p>	<p>To further explore the potential impacts (direct and indirect) on the ecological features and functions of the eastern woodland, we have outlined the features and functions of the woodland, potential impacts and mitigation in <b>Attachment B</b>.</p> <p>The size of the southwest forest (FOD5) is less than 1 ha. The land covered by woodlands in Wellington County is greater than 5 percent, which requires a woodland to be a minimum of 4 ha be considered significant. The southwestern woodland does not meet this criterion.</p> <p>In Section 4.2.1 of the EIA GHD indicated that the forest is less than 4 ha in size and would not meet the criteria listed in the County of Wellington Official Plan for significance. Based on it's size (of less than 1 ha), it also would not meet criteria from the Natural Heritage Reference Manual (2005) which are used to inform municipal natural heritage polices.</p> <p>The woodland does not contain interior habitat and is not in close proximity to significant natural features (190 m from ANSI), or fish habitat. The woodland is not part of the County's identified Greenlands system and does not provide a linkage function, nor did it contain any uncommon characteristics. It also does not provide economically valuable products or other special services. Although there was a high diversity of native species, dominated by sugar maple, the woodlot did not meet the threshold criteria of 4 ha in size.</p> <p>Additionally, this woodlot is not part of the Township's Environmental Protection overlay as identified within the Township of Puslinch's Zoning By-law Schedule A (2018) and Explore Wellington GIS viewer (Wellington County, viewed on November 13, 2023). The woodland however was identified as containing habitat for Significant Wildlife Habitat (bat maternity colonies-potential and Special Concern and Rare Wildlife species-eastern wood-pewee) as identified in the EIA, therefore GHD recommends the retention of the woodland. Five potential bat cavity trees were identified within this woodland. These will remain intact with no disturbance, removal proposed. Bat boxes were identified within this woodlot which are considered bat habitat enhancement measures.</p> <p>One special concern species (eastern wood-pewee) was identified within the southwest woodlot. Habitat for this species is not anticipated to be impacted in any way. No woodland removal or encroachment is proposed or expected. Based on the existing operation of the hydrovac facility and the presence of eastern wood-pewee, the truck noise from the operations has not impacted on the presence of the birds within this small woodlot. The continued use will not further impact on this species.</p> <p>Potential direct impacts on this woodland could include tree harm or mortality or sediment/material encroachment as a result of the operations. This woodland contains significant topographical variations that begin immediately along the borders of the community with a 2:1 slope descent into a large bowl-like land inundation. This provides an immediate physical constraint to truck movement or encroachment into the woodland. A small berm exists along the western limits of the woodland which acts</p>

Item #	Peer Review Comment: June 29, 2022	Comment Addressed in EIA dated August 10, 2022? (Y/N)	Additional Comments and Clarifications (Dougan & Assoc.) March 14, 2023	GHD Response February 16, 2024
				<p>as a physical barrier to the woodland. GHD would recommend several concrete barriers to be placed along the eastern limits of FOD5 and the berm edge (when present), to further distinguish the woodland boundary to ensure the continued preservation of this feature (<b>Attachment C</b>). Additionally, GHD recommends Heavy-Duty Silt fencing be installed along the limits of this FOD5 woodland in the southwest corner of the Subject Lands. With the implementation of the above mitigation measures, no negative impacts are anticipated on the ecological functions of this woodland.</p>
7	<p>The EIS Report identifies wildlife habitat in adjacent significant woodlands. The potential for conflict with wildlife entering an active construction site has not been addressed. Please identify mitigation measures to exclude wildlife from construction zones as well as the protocols for workers to follow if wildlife, especially SAR, are encountered.</p>	<p>Partially; Figure 3 and section 5.2.6.2. See additional comment.</p>	<p>While silt and permanent fencing is recommended along the eastern boundary of the site, it is recommended that permanent wildlife exclusion fencing be installed along the entire operational perimeter to prevent wildlife entering the operational area from the ANSI and/or southwest woodlot during construction and during the operational phase. Additionally, the EIS should provide recommended timing for installation of fencing. To prevent construction and post-construction wildlife mortality, it is recommended that silt and permanent fencing be installed pre-construction.</p>	<p>The EIA was amended in response to the original comment to include mitigation measures for wildlife and the protocols for site staff to follow if species at risk are encountered in the operational area.</p> <p>Based on the findings of the EIA and the identified uses of the Subject Lands and surrounding area, the erection of permanent fencing along the entire operational perimeter would not necessarily enhance the protection of wildlife. As detailed in the EIA a number of other wildlife were noted including mostly small mammals (eastern cottontail (<i>Sylvilagus floridanus</i>), common raccoon (<i>Procyon lotor</i>) and eastern gray squirrel (<i>Sciurus carolinensis</i>), one amphibian, green frog (<i>Lithobates clamitans</i>) and one large mammal, white-tailed deer (<i>Odocoileus virginianus</i>). In addition to the presence of wildlife, Significant Wildlife Habitat for amphibian breeding (woodland) and deer overwintering (Stratum II) were identified. The installation of heavy-duty sediment and erosion control fencing around the east, north and portion of the west perimeter of the operation limits (<b>Attachment C</b>) would act as exclusion fencing and protect any potential direct impacts associated with truck encounters which may cause injury or mortality to any of the above-mentioned species. The main corridors for amphibian and mammal movement are to the east within the ANSI/natural area. With the site operations occurring daily, aggregate pit to the west and limited natural features (woodland/watercourse) within the operational boundary or to the west, amphibian and mammal wildlife movement across the Subject Lands is anticipated to be limited.</p> <p>Sign of some deer use within the central FOD5 forest was evident during field investigations, however winter deer use would most commonly occur within the eastern forest based on the forest habitat characteristics and as a deer yard was identified in the eastern forest area through MNR mapping. The eastern forest provides cover and food during the winter months, where the central FOD5 community is lacking those. Permanent fencing has been proposed along the 10-meter buffer of the operational area to reinforce this barrier, however the elevation difference in most areas along the eastern border of the property along the operational limits provides a physical barrier for deer currently. The vehicle speeds in this area are limited to 5 kilometres (km) an hour, with signs posted along the access route. No impacts to deer are anticipated to occur as a result of vehicle interactions and the low speeds the trucks are moving around the facility. The erection of permanent fencing around the</p>

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				<p>entire operational area could potentially minimize any movement to the small number of deer that may use the central FOD5 woodland for temporary cover.</p> <p>We recommend that functioning heavy duty sediment and erosion control fencing be installed along the limits of key locations along the operational area adjacent the eastern, south-western woodlots as well as the northern operational boundary prior to before April 1 or after October 1 of any given year. The ESC fencing will also act as exclusion fencing for small mammals, amphibians and reptiles that may attempt to enter the operational area. This will limit vehicle interactions (injury or death). The fencing shall be inspected regularly and maintained as needed and should remain in place for the duration of the operations and replaced or repaired in a timely fashion, as needed. The locations identified for silt fencing/exclusion fencing include the northern and eastern perimeter of the operational area. ESC fencing will also be installed and maintained along FOD5/operational area limit border. This, in conjunction with the permanent 6-foot fence along the eastern forest buffer, will provide sufficient separation between the operations and natural habitats to mitigate impacts to wildlife from site operations. The mitigation fencing is identified on Figure 3, within <b>Attachment C</b>.</p>

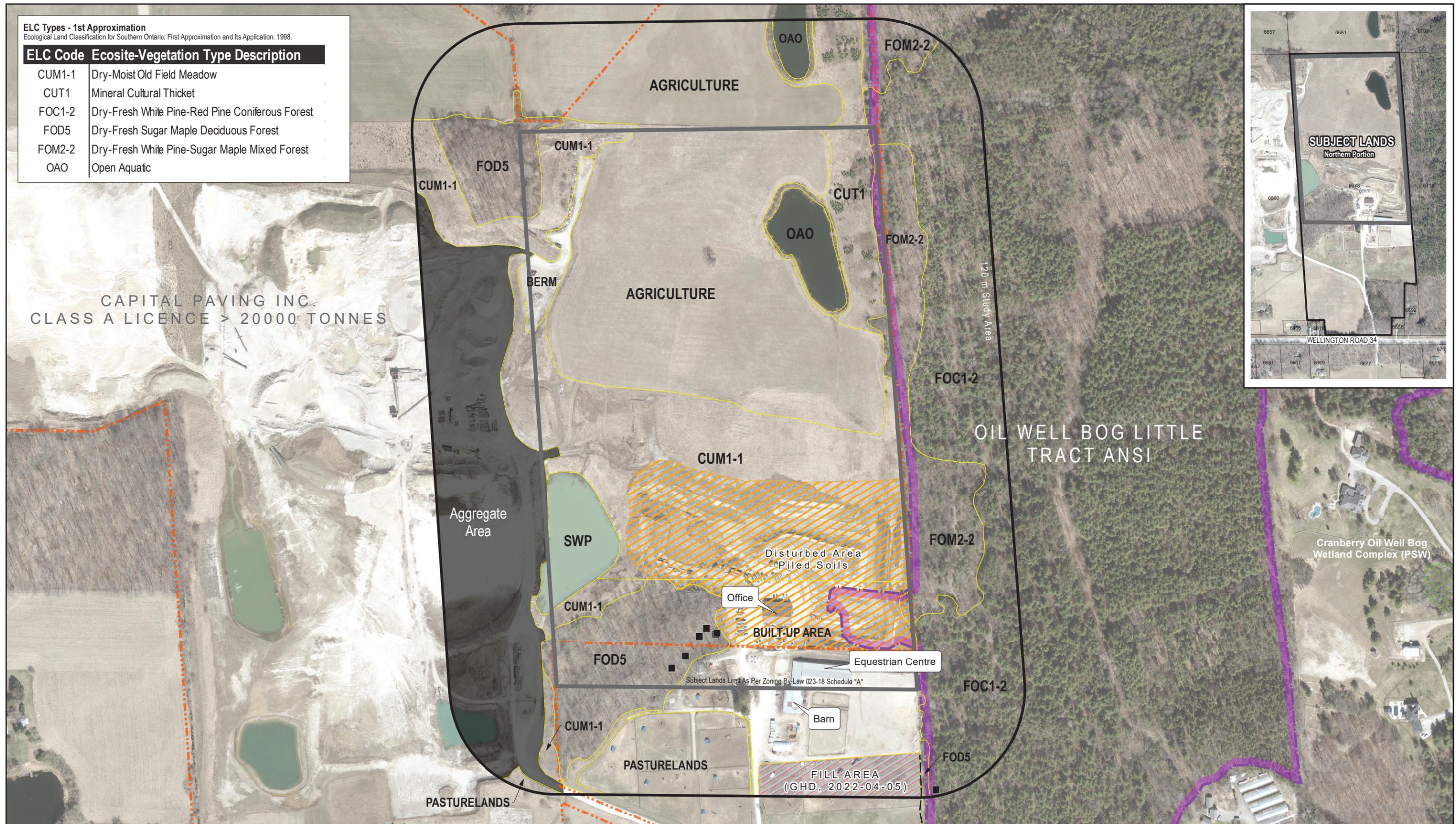
# Attachments

# Attachment 1

## Figure 2

**ELC Types - 1st Approximation**  
Ecological Land Classification for Southern Ontario: First Approximation and Its Application, 1998.

ELC Code	Ecosite-Vegetation Type Description
CUM1-1	Dry-Moist Old Field Meadow
CUT1	Mineral Cultural Thicket
FOC1-2	Dry-Fresh White Pine-Red Pine Coniferous Forest
FOD5	Dry-Fresh Sugar Maple Deciduous Forest
FOM2-2	Dry-Fresh White Pine-Sugar Maple Mixed Forest
OAO	Open Aquatic



**Data Disclaimer**  
Produced by GHD Limited under Licence with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2022.

**Legend**

Cavity Trees (GHD 2022-04-05)	Aggregate Site Authorized - Active	Evaluated-Provincial
Subject Lands - Southern Portion	Aggregate Area	Not-Evaluated or Unknown
120 m Study Area	Fill Area (GHD, 2022-04-05)	
Vegetation Communities	Disturbed Area, Piled Soils	
ANSI		

1 cm = 40 meters  
0 25 50 75 100  
Meters  
Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983  
Grid: NAD 1983 UTM Zone 17N  
Paper Size ANSI B



2374868 Ontario Inc.  
6678 Wellington Road 34, Puslinch, ON  
Puslinch Township  
County of Wellington

Environmental Impact Assessment  
Vegetation Communities & Natural Features

Project No. 11210029  
Revision No.  
Date May 9, 2022

**Figure 2**

Data source: © Township of Puslinch, 2020.

Q:\GIS\PROJECTS\11210000s\11210029\Layouts\202204\_EIA002\11210029\_202204\_EIA002\_GIS002 - Vegetation Communities and Natural Features.mxd  
Print date: 09 May 2022 - 11:10

# **Attachment 2**

## **Impact Assessment**

Features and functions of the woodland, potential impacts and mitigation		
Ecological feature or Function of eastern forest	Potential Impact (direct and indirect)	Proposed mitigation/rationale
Habitat for woodland area sensitive species (red-breasted nuthatch)	<ul style="list-style-type: none"> <li>– Noise disturbance (indirect)</li> <li>– Dust (indirect)</li> </ul>	<p><u>Habitat avoidance:</u> No woodland removal is proposed.</p> <p><u>Setback:</u> Implement a 10-meter buffer off the eastern woodland (habitat for the red-breasted nuthatch)</p> <ul style="list-style-type: none"> <li>– Existing berm provides additional protection from dust with Site works at approximately 5 m lower in elevation.</li> <li>– <u>No change in land-use,</u> current activities on-going therefore no increase in noise/dust levels for the Subject Lands.</li> <li>– No current impacts or degradation of the woodland observed based on current field conditions.</li> </ul>
Wildlife habitat (small mammals)	<ul style="list-style-type: none"> <li>– Noise (indirect)</li> <li>– Edge effect (indirect)</li> <li>– Dust (indirect)</li> <li>– Mortality due to truck interactions (direct)</li> </ul>	<p><u>Maintaining Land Use:</u> No change in land-use, current activities on-going therefore no change or increase in noise levels to the Subject Lands.</p> <p><u>Habitat avoidance:</u> No woodland removal proposed.</p> <p><u>Setback:</u> Implement a 10-meter vegetated buffer off the eastern woodland</p> <p><u>Exclusionary measures:</u> Heavy-duty ESC fencing will be implemented and act as exclusion fencing along the eastern forest, in addition to permanent chain link fencing (6-foot fence) along the 10 m buffer of the eastern forest. Attachment B identifies the location of exclusionary measures.</p>
SWH (deer winter congregation area)	<ul style="list-style-type: none"> <li>– Barrier to deer migration to wintering habitat (indirect)</li> </ul>	<p><u>Low Quality Habitat:</u> Subject Lands are not identified as a main corridor for wildlife movement due to the existing land uses in the immediate area (hydrovac operation and aggregate pit), with the lack of cover and foraging habitat within the operational area and adjacent aggregate pit.</p> <p><u>Habitat avoidance:</u> No habitat removal is proposed, the hydrovac activities are on-going with no new works proposed.</p> <p><u>Avoidance of permanent barriers:</u> no permanent barriers being erected with the exception along the eastern edge of the berm buffer adjacent the existing stable and steep elevation drop to the forest and ANSI east of the Subject Lands (existing barrier).</p>

Features and functions of the woodland, potential impacts and mitigation		
SWH (potential for bat maternity colonies)	<ul style="list-style-type: none"> <li>– potential disruption to suitable bat trees through possible vehicle encroachment in eastern woodland</li> </ul>	<p><u>Habitat avoidance</u>: no loss of vegetation, no forest clearing nor removal of suitable snag/cavity.</p> <p><u>Exclusionary Measures</u>: ESC fencing installed along the eastern woodland boundary.</p> <ul style="list-style-type: none"> <li>– Permanent six-foot fencing proposed along 10-meter buffer of east forest and ANSI.</li> </ul>
Special Concern species (eastern wood-pewee)	<ul style="list-style-type: none"> <li>– Habitat Loss (direct)</li> <li>– Habitat encroachment (direct/indirect)</li> <li>– Habitat degradation (noise/dust) (indirect)</li> </ul>	<p><u>Habitat avoidance</u>: No loss of vegetation/forest clearing.</p> <p><u>Exclusionary Measures</u>: Permanent six-foot fencing proposed along the 10 m buffer from the east forest and ANSI.</p> <p><u>No change in land-use</u>: Current activities on-going therefore no increase in noise/dust levels for the Subject Lands.</p> <ul style="list-style-type: none"> <li>– No current impacts or degradation of the woodland observed based on current field conditions.</li> </ul>
Water quality protection (Provincially Significant Wetland)	<ul style="list-style-type: none"> <li>– Degradation to water quantity and/or quality (indirect)</li> </ul>	<p><u>No change in land-use</u>: current activities on-going therefore runoff will be maintained.</p> <p><u>Feature Avoidance</u>: No woodland removal.</p>
Regional Life Science ANSI	<ul style="list-style-type: none"> <li>– Loss of landform features (direct)</li> <li>– Degradation in landform features (indirect)</li> </ul>	<p><u>Feature Avoidance</u>: ANSI protected in its entirety. No removal of landform features proposed.</p> <p><u>No change in land-use</u>: Slope and vegetation adjacent the ANSI and on the east side berm are stable.</p> <p><u>Exclusion and Erosion Control Measures</u>: Permanent six-foot fencing proposed along the 10-meter buffer of woodland.</p> <p>Heavy Duty silt fencing proposed along the eastern limits of the forest.</p>

# Attachment 3

## Figure 3



**Legend**

-  Operational Boundary
-  120 m Study Area
-  Subject Lands - Southern Portion
-  Constraint Communities
-  Concrete Barrier
-  Silt Fencing/Exclusion Fencing
-  Permanent Fencing (10 m Setback from Forest Community)

1 cm = 12 meters

0 12 24 36

Meters

Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983  
Grid: NAD 1983 UTM Zone 17N  
Paper Size ANSI B



2374868 ONTARIO INC.  
6678 Wellington Road 34, Puslinch, ON  
Puslinch Township  
County of Wellington

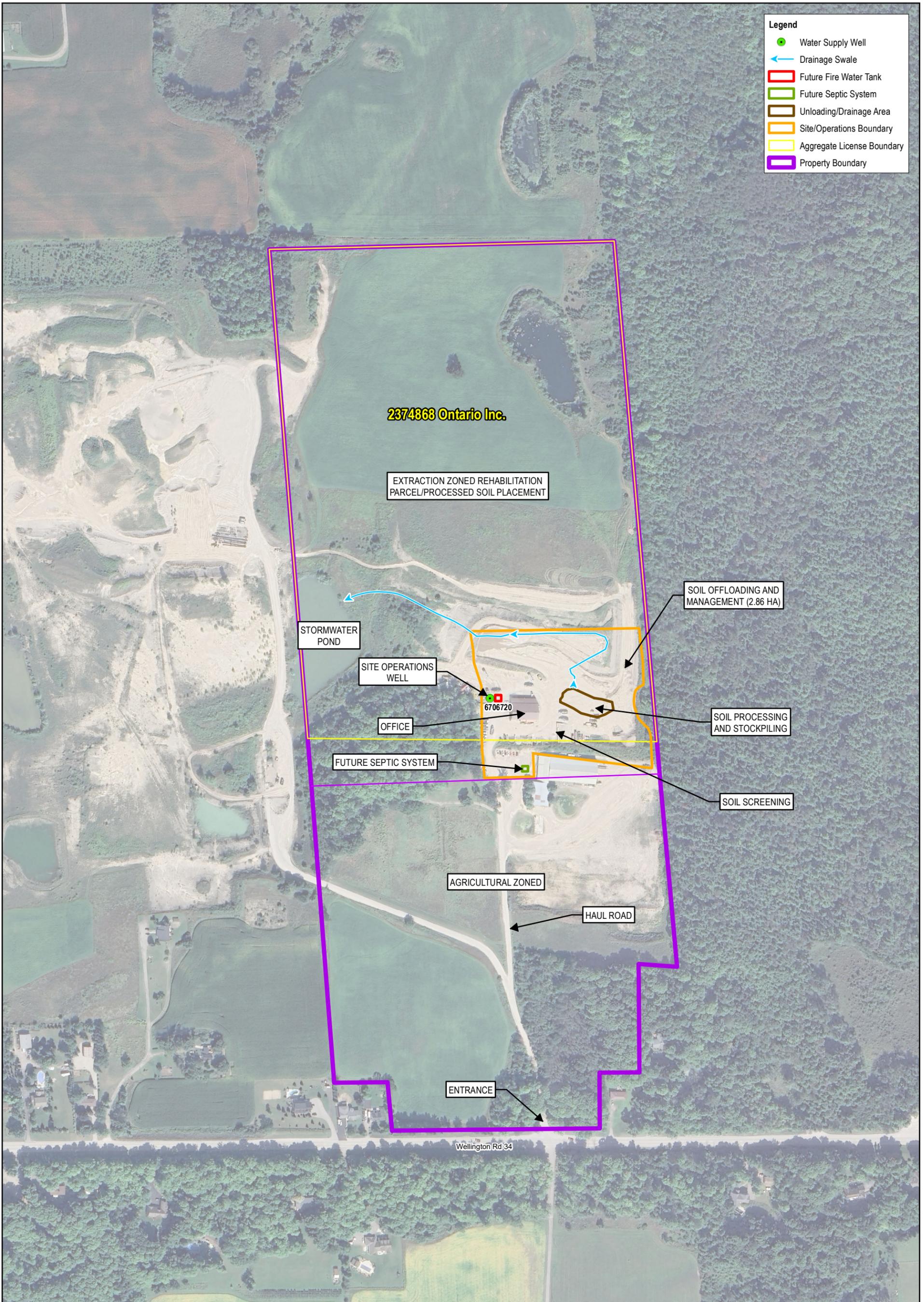
**ENVIRONMENTAL IMPACT ASSESSMENT**  
**Operational Limit, Constraints & Mitigation**

Project No. 11210029  
Revision No.  
Date Feb 16, 2024

**Figure 3**

Q:\GIS\PROJECTS\12596000\12596768\GIS\Maps\Deliverables\GeomorphHazardAssessment\11210029\_202204\_EIA002\_GIS004 - Operational Limit, Constraints and Mitigation - OLT.mxd  
Print date: 16 Feb 2024 - 10:36

Attribution: © Township of Puslinch, 2020; Produced by GHD Limited under Licence with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2023.



- Legend**
- Water Supply Well
  - ← Drainage Swale
  - Future Fire Water Tank
  - Future Septic System
  - Unloading/Drainage Area
  - Site/Operations Boundary
  - Aggregate License Boundary
  - Property Boundary

STORMWATER POND

SITE OPERATIONS WELL

OFFICE

FUTURE SEPTIC SYSTEM

AGRICULTURAL ZONED

HAUL ROAD

ENTRANCE

Wellington Rd 34

SOIL OFFLOADING AND MANAGEMENT (2.86 HA)

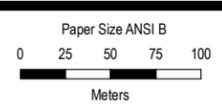
SOIL PROCESSING AND STOCKPILING

SOIL SCREENING

**2374868 Ontario Inc.**

EXTRACTION ZONED REHABILITATION PARCEL/PROCESSED SOIL PLACEMENT

6706720



2374868 ONTARIO INC.  
6678 WELLINGTON RD 34  
TOWNSHIP OF PUSLINCH, ON

Project No. 11210029  
Revision No. -  
Date May 28, 2025

Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983 CSRS  
Grid: NAD 1983 CSRS UTM Zone 17N

CONCEPT PLAN

FIGURE 1

455 Phillip Street, Unit 100A  
Waterloo, Ontario N2L 3X2  
Canada  
ghd.com



Our ref: 11210029-LTR-2

12 June 2025

Frank Ertl  
2374868 Ontario Inc.  
6678 Wellington Road 34  
Cambridge Ontario  
N3C 2V4

**Response to Review of Temporary Use By-Law Amendment Application by  
Valcoustics Canada Limited – 6678 Wellington Road 34, Puslinch, Ontario**

Dear Frank,

GHD Limited (GHD) has prepared this letter, on behalf of 2374868 Ontario Inc., to provide responses to the February 19, 2025 letter from Valcoustics Canada (Valcoustics). GHD previously provided responses in an October 30, 2023 letter to a March 16, 2023 Valcoustics letter on the previous zoning application. The proposed operation has not changed since the previous zoning application. GHD's October 23, 2023 letter included an updated Acoustic Assessment Report. The October 30, 2023, letter is provided in Attachment 1.

An Environmental Compliance Approval (ECA) for Air and Noise for the operation was submitted to Ontario Ministry of Environment Conservation and Parks (MECP) on April 13, 2023. GHD addressed some comments received from MECP on the application before Air & Noise ECA A-500-3223236868 was issued on October 11, 2024. A copy of the ECA is provided in Attachment 2. The final Acoustic Assessment Report (AAR) completed to support the ECA is provided in Attachment 3.

Regards

  
**Patrick Chen**  
Acoustical Engineer  
+1 519 340-4259  
patrick.chen@ghd.com

Encl.

Copy to: Fred Taylor, GHD

# **Attachments**

# **Attachment 1**

Our ref: 11210029-LTR-3

October 30, 2023

Mrs. Lynne Banks  
Development and Legislative Coordinator  
Township of Puslinch  
7404 Wellington Road 34  
Puslinch, Ontario  
N0B 2J0

**Response to Peer Review of Acoustic Assessment Report  
Hydrovac Facility Zoning By-Law Amendment Application**

Dear Mrs. Banks

## 1. Introduction

GHD prepared an Acoustic Assessment Report (AAR), dated January 7, 2021, on behalf of 2374868 Ontario Inc., to support an application for a MECP ECA (Air & Noise) for the hydrovac facility (Facility) located at 6678 Wellington Road 34 in Cambridge, Ontario (Site). The ECA application and supporting documents also were provided to the Township of Puslinch when it was submitted to the MECP as part of an application for a Zoning By-Law Amendment, the Township of Puslinch retained Valcoustics Canada Ltd. (Valcoustics) to review and provide comments on the Acoustic Assessment Report. On July 19, 2022, the Township of Puslinch provided a letter dated June 27, 2022 (VCL File: 122-0269) which provided Valcoustics comments. On October 2, 2023, GHD had a without prejudice discussion with Valcoustics to clarify the comments. An updated Acoustic Assessment Report can be found in Attachment 1.

This letter provides GHD's response to the Valcoustics comments. For convenience, each comment is copied in italics below and the response follows.

## 2. Acoustic Assessment Review Comments

### 2.1 Peer Review Comments

**Valcoustics Comment No. 1:**

*The noise assessment has applied the Ministry of Environment, Conservation and Parks (MECP) noise guideline requirements of NPC-300. This is considered appropriate.*

**GHD Response No. 1:**

Concur.

**Valcoustics Comment No. 2:**

***The proposed waste processing facility is considered a stationary noise source. NPC-300 defines a stationary noise source as “a source of sound or a combination of sources of sound that are included and normally operated within the property lines of a facility and includes the premises of one person as one stationary noise source, unless the dominant source of sound on those premises is construction”. From the information provided, it is not clear if the adjacent extractive operation is part of the same site as the proposed waste processing operation. As a minimum, it appears that truck traffic shares part of the site and the entrance. The noise assessment needs to assess all the sources operating on the site and not just the new sources associated with the proposed waste processing facility.***

**GHD Response No. 2:**

Comprehensive and detailed information on the hydrovac operations, Site and adjacent Capital Paving (Capital) traffic are provided in the Design and Operations (D&O) Report and Traffic Study submitted with the Zoning By-Law Amendment application in December 2021. The adjacent aggregate extractive operation business is not part of the waste processing operation. Though the properties share an entrance, they are independent sites and owned by separate companies. However, GHD conservatively assessed the additional truck traffic from the Capital Paving to have 5 trucks/hour based on information provided in the Traffic Study. The cumulative assessment of the proposed Facility based on this increase in number of trucks does not change the compliance status with applicable noise limits for the proposed waste processing operation as reflected in the updated AAR.

**Valcoustics Comment No. 3:**

***It is not clear from the information presented within the report if vacant lots that would permit a noise sensitive use exist in the area. As per NPC-300, such vacant lots need to be included as receptors in the noise impact assessment.***

**GHD Response No. 3:**

Vacant lots that would permit a noise sensitive use have been considered in the selection process of worst-case Points of Reception. According to the Township of Puslinch bylaws, the permitted uses for land zoned as Extractive does not allow for residential dwellings or any other land uses that would likely be noise sensitive. Additionally, all agricultural zoned land on the southern part of the Property and properties adjacent to the Property currently already have dwellings. As Township of Puslinch agricultural zoning allows for a maximum of 1 single detached dwelling per lot, no additional dwellings will be built.

**Valcoustics Comment No. 4:**

***The report indicates that the Class 2 guideline limits have been applied at all receptor locations. However, justification for Class 2 has not been provided. There is a concern that at least the receptors to the north of the facility may not be in a Class 2 area.***

**GHD Response No. 4:**

The area noise profile is dominated by Regional Highways such as Wellington Road 34 and Wellington Road 32. GHD notes POR8 to the north is approximately equidistant from Wellington Road 32 as POR1 is to Wellington Road 34, therefore GHD believes it is reasonable to apply Class 2 guideline limits as both would be dominated during the daytime periods by road traffic and human activity, while during nighttime hours this area would be dominated by natural noises typical of a Class 2 Area. However, to be conservative GHD updated the evaluation of POR 7 and POR 8 (the PORs to the north of Site) against Class 3 areas sound level limits and both PORs still show compliance as reflected in the updated AAR.

**Valcoustics Comment No. 5:**

***Section 6.1 of the report indicates the worst-case assessment was based on measured sound pressure levels. However, no measurement data is provided in the report. The report then goes on to say CadnaA was used to model the potential noise impacts which contradicts the prior statement.***

Clarification is needed.

**GHD Response No. 5:**

This was an inadvertent typographical error in the report and all sound levels used were based on equivalent values from GHD's noise library data based on measured sound pressure levels of like representative equipment and was used along with published reference data.

**Valcoustics Comment No. 6:**

***The modelling assumptions indicate a maximum reflection order of 1 was used to complete the assessment. A minimum 1 (and ideally at least 2) order of reflection should be used in the model.***

**GHD Response No. 6:**

This was an inadvertent typographical error in the report, the CadnaA model used a max reflection order of 2.

**Valcoustics Comment No. 7:**

***The ground absorption coefficients used in the model are not considered appropriate. Often 1 is used for absorptive ground (grass and crop land) and 0 is used for hard, sound reflective surfaces (gravel areas, haul road, ponds, etc.). Hard surfaces can provide some sound absorption. If hard ground absorption is to be accounted for then the soft ground cannot be assumed to be perfectly absorptive.***

**GHD Response No. 7:**

GHD has completed numerous of acoustic assessments accepted by the MECP assigning the ground absorption for grass/soft ground to be 1, gravel ground to be 0.5, asphalt and other hard surfaces to be 0.25, and water surfaces to be 0. However, GHD has conservatively in this case updated all "hard" ground to have a ground absorption value of 0. This change does not alter the noise compliance as reflected in the updated AAR.

**Valcoustics Comment No. 8:**

***The sound absorption coefficient used to model the reflective buildings is missing from the report.***

**GHD Response No. 8:**

Buildings were modelled with a smooth façade with a standard 0.21 absorption coefficient.

**Valcoustics Comment No. 9:**

***The report concludes that any future equipment that contributes less than 30 dBA at the PORs does not require further assessment. Even though it is agreed that a single source at this level is insignificant, if multiple sources at this level are added, they could contribute to the off-site noise impacts. Thus, our recommendation is that any changes to the proposed operation should not proceed without a proper acoustical assessment.***

**GHD Response No. 9:**

GHD has updated the AAR to only recommend that any new equipment should contribute less than 30 dBA at the PORs and will evaluate any potential future equipment to ensure that the cumulative impacts are compliant.

**Valcoustics Comment No. 10:**

***The noise source summary in Appendix C seems to indicate that the reference sound level for the truck route comes from a UK reference. North American references/standards should be used for motor vehicle traffic since sound emission requirements and vehicle types are different between Europe and North America.***

**GHD Response No. 10:**

The United Kingdom's Department of Environment Food and Rural Affairs (DEFRA) *Update of Noise Database for Prediction of Noise on Construction and Open Sites, 2005 and 2006* is a standard noise reference database that is used and accepted globally based on numerous reviewed and approved ECA applications submitted to the MECF for like equipment. However, GHD has updated the sound level data with reference to the U.S. Department of Transportation, Federal Highway Administration (FHWA) Traffic Noise Model – Technical Manual which comparable sound power level.

### **3. Conclusion**

We trust that the responses contained herein address the comments in Valcoustics review of the AAR. Should you have any questions on the above, please do not hesitate to contact us.

Regards

**Patrick Chen**  
Acoustics EIT  
+1 519 340-4259  
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Encl.

Copy to: Eric Nafziger, 2374868 Ontario Inc.  
Michael Masschaele, GHD

# **Attachment 1**

**Updated Acoustic Assessment Report**



# **Acoustic Assessment Report**

**6678 Wellington Road 34  
Cambridge, Ontario**

2374868 Ontario Inc.

03 October 2023

**Company Name**

2374868 Ontario Inc.

**Company Address**

Unit Number	Street Number	Street Name	PO Box
	6678	Wellington Road 34	
City/Town		Province	Postal Code
Cambridge		Ontario	N6C 1K7

**Location of Facility**

6678 Wellington Road 34, Cambridge, Ontario

The attached Acoustic Assessment Report was prepared in accordance with the guidance in the ministry document "Information to be Submitted for Approval of Stationary Sources of Sound" (NPC-233) dated October 1995 and the minimum required information identified in the check-list on the reverse of this sheet has been submitted.

**Company Contact**

Company Contact

Last Name	First Name	Middle Initial
Nafziger	Eric	J
Title		Telephone Number
Manager		519-658-5023
Signature		Date (yyyy/mm/dd)
		2021/01/06

**Technical Contact**

Technical Contact

Patrick Chen

Last Name	First Name	Middle Initial
Chen	Patrick	
Representing		Telephone Number
GHD Limited		519 340-4259
Signature		Date (yyyy/mm/dd)
		2023/04/13

	Required Information	Submitted	Explanation/Reference
<b>1.0</b>	<b>Introduction (Project Background and Overview)</b>	<input checked="" type="checkbox"/> Yes	<a href="#">Executive Summary</a>
<b>2.0</b>	<b>Facility Description</b>		
	2.1 Operating hours of Facility and significant Noise Sources	<input checked="" type="checkbox"/> Yes	<a href="#">Section 1</a>
	2.2 Site Plan identifying all significant Noise Sources	<input checked="" type="checkbox"/> Yes	<a href="#">Figure 1</a>
<b>3.0</b>	<b>Noise Source Summary</b>		
	3.1 Noise Source Summary Table	<input checked="" type="checkbox"/> Yes	<a href="#">Table 1</a>
	3.2 Source noise emissions specifications	<input checked="" type="checkbox"/> Yes	<a href="#">Table 1</a>
	3.3 Source power/capacity ratings	<input checked="" type="checkbox"/> Yes	<a href="#">Table 1</a>
	3.4 Noise control equipment description and acoustical specifications	<input type="checkbox"/> Yes	N/A
<b>4.0</b>	<b>Point of Reception Noise Impact Calculations</b>		
	4.1 Point of Reception Noise Impact Table	<input checked="" type="checkbox"/> Yes	<a href="#">Table 2</a>
	4.2 Point(s) of Reception (POR) list and description	<input checked="" type="checkbox"/> Yes	<a href="#">Section 3</a>
	4.3 Land-use Zoning Plan	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix A</a>
	4.4 Scaled Area Location Plan	<input checked="" type="checkbox"/> Yes	<a href="#">Figure 1</a>
	4.5 Procedure used to assess noise impacts at each POR	<input checked="" type="checkbox"/> Yes	<a href="#">Section 4</a>
	4.6 List of parameters/assumptions used in calculations	<input checked="" type="checkbox"/> Yes	<a href="#">Section 4, Section 6</a>
<b>5.0</b>	<b>Acoustic Assessment Summary</b>		
	5.1 Acoustic Assessment Summary Table	<input checked="" type="checkbox"/> Yes	<a href="#">Table 3</a>
	5.2 Rationale for selecting applicable noise guideline limits	<input checked="" type="checkbox"/> Yes	<a href="#">Section 5</a>
	5.3 Predictable Worst Case Impacts Operating Scenario	<input checked="" type="checkbox"/> Yes	<a href="#">Section 6, Appendix D</a>
<b>6.0</b>	<b>Conclusions</b>		
	6.1 Statement of compliance with the selected noise performance limits	<input checked="" type="checkbox"/> Yes	<a href="#">Section 7</a>
<b>7.0</b>	<b>Appendices (Provide details such as)</b>		
	Listing of Insignificant Noise Sources	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix B</a>
	Manufacturer's Noise Specifications	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix E</a>
	Calculations	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix D</a>
	Instrumentation	<input type="checkbox"/> Yes	N/A
	Meteorology during Sound Level Measurements	<input type="checkbox"/> Yes	N/A
	Raw Data from Measurements	<input type="checkbox"/> Yes	N/A
	Drawings (Facility / Equipment)	<input checked="" type="checkbox"/> Yes	<a href="#">Figure 1</a>

<b>Project name</b>		Badger 2374868 Ont Inc-Permitting S					
<b>Document title</b>		Acoustic Assessment Report   6678 Wellington Road 34					
<b>Project number</b>		11210029-RPT-10					
<b>File name</b>		11210029-RPT-10-Acoustic Assessment Report					
<b>Status Code</b>	<b>Revision</b>	<b>Author</b>	<b>Reviewer</b>		<b>Approved for issue</b>		
			<b>Name</b>	<b>Signature</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
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Appendix B	Summary of Insignificant Noise Sources
Appendix C	Noise Specification and Worst-Case Simultaneous Operations Summary
Appendix D	CadnaA Sample Calculation for POR1
Appendix E	Manufacturer Sound Level Specifications

# 1. Introduction

GHD Limited (GHD) has prepared an Acoustic Assessment Report Update (AAR) for the 2374868 Ontario Inc. facility (Facility) located at 6678 Wellington Road 34 in the Cambridge, Ontario. This AAR has been prepared to include all significant sources of noise emissions at the Facility and to demonstrate compliance at all offsite noise sensitive locations. The North American Industry Classification System (NAICS) Code that applies to this Facility is 562210 – Waste treatment and disposal.

This AAR has been prepared to support an application by 2374868 Ontario Inc., for an application for a Ministry of the Environment Conservation and Parks (MECP) Environmental Compliance Approval (ECA) (Air & Noise).

The Facility typically operates between 7 AM and 6 PM, Monday through Friday. However, additional work outside of these hours is occasionally performed.

The AAR presented herein provides an evaluation of the potential noise impacts at the sensitive receptors located nearest to the Facility. The AAR was prepared consistent with the following MECP guidance:

- NPC-103, "Procedures", August 1978
- NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October 1995
- "Basic Comprehensive Certificates of Approval (Air), User Guide, Appendix A - Supporting Information for an Acoustic Assessment Report or Vibration Assessment Report Required by a Basic Comprehensive CofA prepared by the Environmental Assessment and Approvals Branch, Version 2.1, March 2011"
- NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources –Approval and Planning", August 2013

The Facility is located in an area zoned as Extractive and Agricultural. The land uses immediately surrounding the Facility is also Extractive and Agricultural. A zoning map and zoning definitions are provided in Appendix A. A site plan is provided on Figure 1.

The Facility is located in a mixed Acoustical Class 2 and 3 area. Class 2 areas are defined by NPC 300 as an area where the background sound level during the day is dominated by the activities of people and by natural sounds during the night. Class 3 areas are defined by NPC 300 as an area where the background sound level is dominated by natural sounds having little or no road traffic.

## 1.1 Scope and Limitations

*This report: has been prepared by GHD for 2374868 Ontario Inc. and may only be used and relied on by 2374868 Ontario Inc. for the purpose agreed between GHD and 2374868 Ontario Inc.*

*GHD otherwise disclaims responsibility to any person other than 2374868 Ontario Inc. arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.*

*The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.*

*The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.*

*The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.*

## 2. Noise Source Summary

This AAR focuses on the sound emissions from the significant noise sources identified at the Facility with the potential to adversely impact the sensitive receptors and are inclusive of the noise emissions from the various heavy machinery onsite (cranes, loaders, and excavator-style equipment). The significant noise sources are identified in the Noise Source Summary Table 1 and the locations are identified on Figure 1.

It has been conservatively assumed that the onsite loaders and excavator equipment can operate any time of day. Screening operations are daytime only. Truck traffic is expected to have a maximum of up to 6 trucks per hour during the daytime hours and up to 2 trucks per hour in the evening and nighttime hours. Onsite vehicle activities including heavy trucks arriving and departing from site and traffic from Capitol Paving are summarized below:

Type of Vehicle	Day 7a.m.- 7 p.m. (Trips/hour)	Evening 7p.m.- 11 p.m. (Trips /hour)	Night 11 p.m.- 7 a.m. (Trips /hour)
Front End Loader Movements (S1)	15	5	5
Heavy Vehicle Truck Route (TR1)	6	2	2
Capital Paving Truck Traffic (TR2)	5	5	5

There are no sources of impulse noise or vibration at the Facility<sup>1</sup>.

Comprehensive and detailed information on the hydrovac operations, Site and adjacent Capital Paving (Capital) traffic are provided in the Design and Operations (D&O) Report and Traffic Study submitted with the Zoning By-Law Amendment application in December 2021. The adjacent aggregate extractive operation business is not part of the waste processing operation. Though the properties share an entrance, they are independent sites and owned by separate companies. GHD has conservatively added the Capital traffic entering and exiting from the shared entrance. It is also noted that the land south of the hydrovac operations is not part of the Facility's operations.

The significant equipment sources are all either trucking related activities or outdoor equipment located beside the within the Site Boundary. The Site does not have any significant interior noise sources resulting in breakout noise anywhere from the building. The existing building at the Site is made of standard industrial construction materials. The other noise sources at the Facility have not been included since they are considered insignificant contributors to the overall Facility noise level at the sensitive receptors. A summary of insignificant noise sources is provided in Table B.1 of Appendix B.

## 3. Point of Reception Summary

The identification of appropriate sensitive point(s)-of-reception is necessary to conduct the AAR for the Facility. A "point-of-reception" is any point on the premises of a person where sound, originating from other than those premises, is received. The point-of-reception may be located on permanent or seasonal residences, nursing/retirement homes, rental residences, hospitals, campgrounds, schools, or places of worship.

The objective of this AAR is to determine the predictable worst-case 1-hour equivalent sound level (1-hour Leq) at the worst-case point(s)-of-reception. The worst-case point(s)-of-reception are defined as the sensitive receptors with the greatest potential exposure to the Facility noise sources due to proximity and direct line-of-sight exposure.

---

<sup>1</sup> Assessment of vibration if applicable is assessed according to NPC-207.

The worst-case sensitive points of reception (POR) are:

- POR1 – nearest façade of a two-storey residence on Sideroad 10 N approximately 900 meters (m) east of the site (4.5 m Above Ground (AG))
- POR2 – nearest façade of a two-storey residence on Highway 34 approximately 630 meters (m) east of the site (4.5 m Above Ground (AG))
- POR3 - outdoor point of reception associated with a two-storey residence on Highway 34 approximately 70 m south of the site (1.5 m AG) evaluated to be the worst-case in comparison to the residence façade
- POR4 – nearest façade of a two-storey residence on Highway 34 approximately 60 meters (m) south of the site (4.5 m Above Ground (AG))
- POR5 – nearest façade of a two-storey residence on Highway 34 approximately 60 meters (m) southwest of the site (4.5 m Above Ground (AG))
- POR6 – nearest façade of a two-storey residence on Highway 34 approximately 150 meters (m) west of the site (4.5 m Above Ground (AG))
- POR7 – nearest façade of a two-storey residence on Concession Road approximately 740 meters (m) northwest of the site (4.5 m Above Ground (AG))
- POR8 – nearest façade of a two-storey residence on Concession Road approximately 1,300 meters (m) north of the site (4.5 m Above Ground (AG))

The location of the worst case PORs are identified on Figure 2.

Vacant lots that would permit a noise sensitive use have been considered in the selection process of worst- case Points of Reception. According to the Township of Puslinch bylaws, the permitted uses for land zoned as Extractive does not allow for residential dwellings or any other land uses that would likely be noise sensitive. Additionally, all agricultural zoned land on the southern part of the Property and properties adjacent to the Property currently already have dwellings. As Township of Puslinch agricultural zoning allows for a maximum of 1 single detached dwelling per lot, no additional dwellings will be built.

In accordance with NPC-300 all PORs locations within 500 m of the Facility were considered including the planes of windows which were assessed for daytime and nighttime noise limits. In addition, the ground level amenity areas, within 30 m of each POR, were also evaluated for daytime noise limits; however, the noise impact at the worst-case and most exposed PORs are presented herein. GHD also evaluated the zoning surrounding the Facility to identify any potential vacant lots that permit a residential build and has included all relevant POR's.

## 4. Sound Level Data

Manufacturer's sound level data for the proposed equipment is provided in Appendix E. This data was supplemented with spectral data from GHD's sound level library. All equipment must meet (or be below) the specified sound levels. The proposed significant noise sources included in this assessment are:

- Front End Loader (S1) – Sound Power Level: 113.2 dBA
- Screening Equipment Motor (S2A) – Sound Power Level: 109.3 dBA
- Screening Operation (S2B) – Sound Power Level: 105.6 dBA
- Excavator (S4) – Sound Power Level: 103.2 dBA
- Truck Route (TR1) – Sound Power Level: 109.5 dBA
- Capitol Paving Truck Route (TR2) – Sound Power Level: 109.5 dBA

All noise sources are outdoor sources.

## 5. Assessment Criteria

Assessment criteria may be determined for a POR based on the MECP's minimum exclusionary sound level limits, as presented in Table B-1 of NPC-300, in comparison to the background sound levels experienced in the area. The "background sound level" is defined as the sound level present in the environment that is produced by noise sources other than those from the Facility, and would include traffic sound levels and sound from neighboring industrial/commercial activity. The higher of the two assessment criteria is selected for purpose of assessment.

### 5.1 Sound Level Limits for Stationary Noise Sources

#### 5.1.1 MECP Standard Limits

NPC-300 defines stationary noise sources as sound from all sources that are normally operated within the property lines of a facility. The noise impact from stationary sources is evaluated based on operations during a predictable worst-case hour. Stationary noise assessment criteria are generally determined based on the MECP's minimum exclusionary sound level limits, as presented in NPC-300, in comparison to the background sound levels experienced in the area.

Limits are provided for two main types of noise sources:

- Non-impulsive, "continuous" noise sources such as ventilation fans, mechanical equipment, and vehicles while moving within the property boundary of an industry. Continuous noise is measured using 1-hour average sound exposures (Leq (1-hr) values), in dBA.
- Impulsive noise, which is a "banging" type noise characterized by rapid sound level rise time and decay. Impulsive noise is measured using a logarithmic mean (average) level (LLM) of the impulses in a one-hour period, in dBAI.

The guideline requires an assessment at, and provides separate guideline limits for:

- Outdoor points of reception (e.g., back yards, communal outdoor amenity areas).
- Façade points of reception such as the plane of windows on the outdoor façade which connect onto noise sensitive spaces, such as living rooms, dens, eat-in kitchens, dining rooms and bedrooms.

#### Acoustical Area Classification

Under the MECP Publication NPC-300 guidelines, noise sensitive receptors are defined using receptor area classifications. The receptor areas are classified as either:

- Class 1 – Urban areas
- Class 2 – Suburban / semi-rural areas
- Class 3 – Rural areas
- Class 4 – Infill areas (Subject to Municipal Planning Approval for New Developments)

Depending on the receptor area classification, different guideline limits apply. Classes 1, 2, and 3 were included in the predecessor guidelines to Publication NPC-300. The Class 4 area is intended to allow for infill and redevelopment, whilst still protecting residences from undue noise.

Table 5.1 below summarizes the MECP's minimum exclusionary sound level limits based on the Acoustical Class of the project area, which are expressed in terms of 1-hour equivalent sound levels (1-hour Leq):

**Table 5.1** MECP Minimum Exclusionary Sound Level Limits for Steady Sound

Time of Day	Class 1 Sound Level Limits (dBA)		Class 2 Sound Level Limits (dBA)		Class 3 Sound Level Limits (dBA)		Class 4 Sound Level Limits (dBA)	
	Plane of Window	Outdoor POR						
07:00 – 19:00 (Day)	50	50	50	50	45	45	60	55
19:00 – 23:00 (Even)	50	50	50	45	40	40	60	55
23:00 – 07:00 (Night)	45	NA	45	NA	40	NA	55	NA

Based on the acoustic environment at the development, it is considered to be in a mixed acoustic Class 2 and 3 area as defined by NPC-300, as the acoustic environment is dominated by human activities (i.e., road traffic) during the day by Highway 34 and natural environment and infrequent human activity for Class 2 and dominated by natural sounds at all hours for a Class 3.

Class 2 and Class 3 noise limits appropriate for this project have been shaded for reference.

**Table 5.2** Applicable Minimum MECP Sound Level Limits or Site Specific Limits for Impulsive or Steady State Sound

POR ID	POR Description	Sound Level Limits (dBA)		
		Day (7am – 7pm)	Evening (7pm – 11pm)	Night (11pm – 7am)
POR1	Nearest façade of a two-storey residence on Sideroad 10 N (4.5 metres above grade [m AG])	50	50	45
POR2	Nearest façade of a two-storey residence on Highway 34 (4.5 m AG)	50	50	45
POR3	Nearest façade of a two-storey residence on Highway 34 (4.5 m AG)	50	50	45
POR4	Nearest façade of a two-storey residence on Highway 34 (4.5 m AG)	50	50	45
POR5	Nearest façade of a two-storey residence on Highway 34 (4.5 m AG)	50	50	45
POR6	Nearest façade of a two-storey residence on Highway 34 (4.5 m AG)	50	50	45
POR7	Nearest façade of a two-storey residence on Concession Road (4.5 m AG)	45	40	40
POR8	Nearest façade of a two-storey residence on Concession Road (4.5 m AG)	45	40	40

The lowest sound levels generally occur at the ground floor level (1.5 metres above grade) and increase with height due to increased line of sight exposure to the roadways. GHD has presented the lowest noise limit relative to the worst-case Facility noise impact based on line-of-sight and exposure to the applicable receptor.

# 6. Impact Assessment

## 6.1 Steady-State Sound Levels

The worst-case assessment of steady-state noise sources at the selected points of reception was based on representative noise data. CadnaA Acoustical Modelling Software (CadnaA), version 2023, was used to model the potential impacts of the significant noise sources. CadnaA calculates sound level emissions based on the ISO 9613-2 standard "Acoustics – Attenuation of Sound during Propagation Outdoors".

A sample calculation for worst-case POR1 is provided in Appendix D.

The worst-case cumulative Facility-wide attenuated sound levels estimated at the receptor(s) included attenuation affects due to geometric divergence, atmospheric attenuation, barriers/berms, ground absorption and directivity, as applicable for all significant noise sources off-site buildings were input as intervening structures.

CadnaA modelling assumptions used in this AAR included:

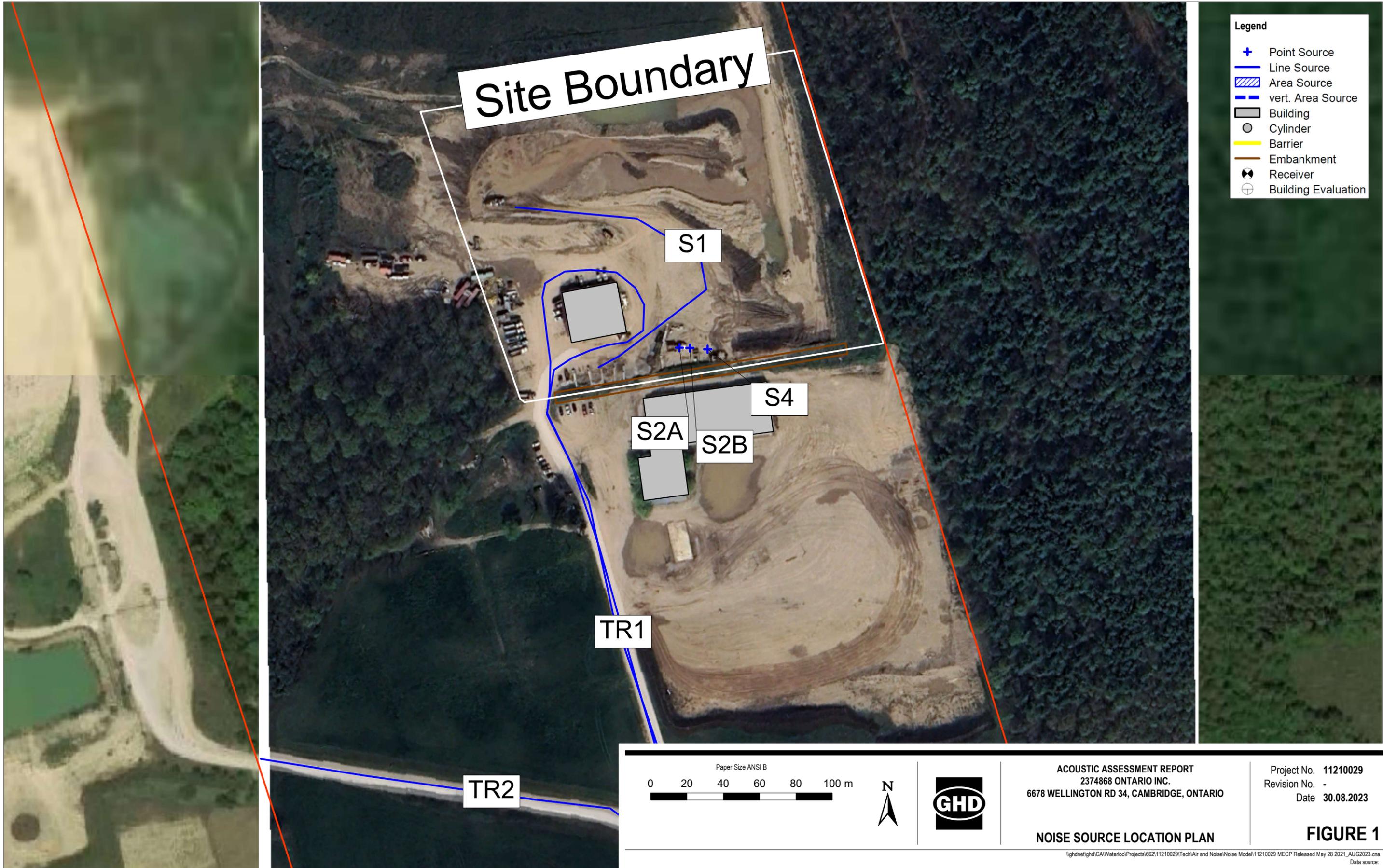
- **Noise Sources:** All sources were modelled using the 1/1 octave band data from source measurements, manufacturer's sound level data, or reference materials.
- **Noise Source Elevation:** The heights of the sources are summarized in Table C.1 of Appendix C.
- **Reflection Order:** A maximum reflection order of 2.0 was used to evaluate indirect noise impact from one reflecting surface.
- **Ground Absorption:** The model was set up with a ground absorption factor of 1 due to the area being primarily grass and crop land. A manual ground absorption area is included with a factor of 0 hard surfaces such as gravel areas, haul roads, and ponds.
- **Foliage:** The surrounding woodlots were modeled as foliage with a height of 8m.
- **Receptor Elevation:** POR receptor heights were modelled appropriately to represent the worst-case elevation.
- **Time-Weighted Adjustment:** Time-weighted adjustments for sources that do not operate continuously are summarized in Table C.1.
- **Terrain:** Flat terrain was assumed in order to be conservative.
- **Tonality:** A +5 dBA adjustment was applied for tonal sources, if applicable.
- **Building Surfaces:** The buildings are modelled as reflective surfaces with 0.21 absorption coefficient.

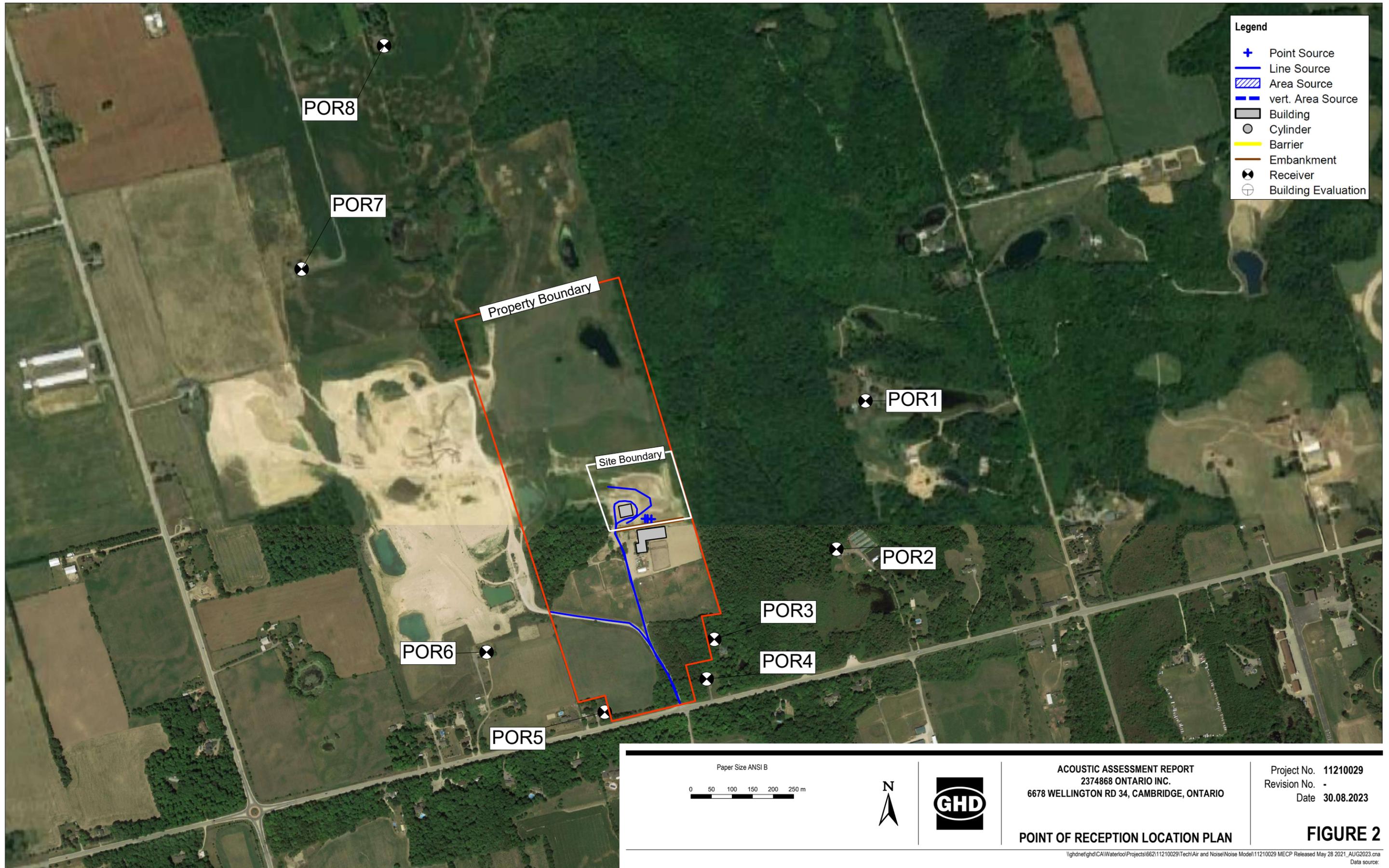
The steady stated noise impacts at each POR are summarized in Table 2. Compliance with the MECP sound level limits is demonstrated in Table 3 and Figure 3. Compliance with the MECP sound level limits is demonstrated in Table 3.

# 7. Conclusions

The unattenuated steady-state estimated at the PORs are below the MECP's minimum exclusionary sound level limits as summarized in Table 3.

GHD recommends that any future proposed equipment sound level specifications be evaluated to ensure that the sound level contribution at each applicable POR will not significantly add to the site wide cumulative noise impacts in order for the Facility to maintain compliance with NPC-300 noise limits.





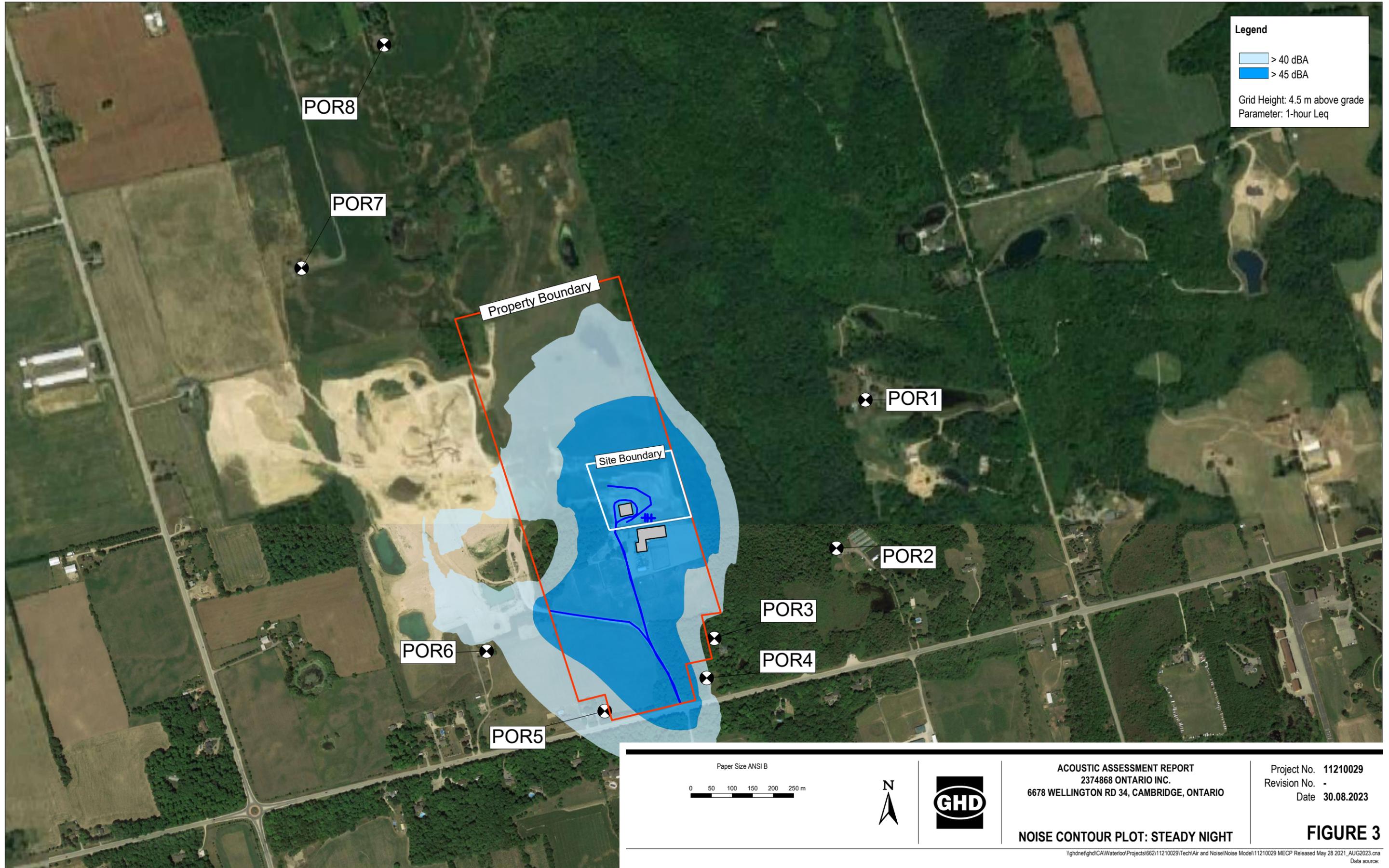


Table 1

**Noise Source Summary**  
**2374868 Ontario Inc.**  
**6678 Wellington Road 34, Cambridge, Ontario**

<b>Cadna A ID</b>	<b>Source Description</b>	<b>Sound Power Level<sup>1</sup> (dBA)</b>	<b>Source Characteristics<sup>2</sup></b>	<b>Source Location<sup>3</sup></b>	<b>Noise Control Measures<sup>4</sup></b>	<b>Source Type</b>
S1	Front End Loader	113.2	S	O	U	Point
S2A	Screening Equipment Motor	109.3	S	O	U	Point
S2B	Screening Operation	105.6	S	O	U	Point
S4	Excavator	103.2	S	O	U	Point
TR1	Truck Route	109.5	S	O	U	Line
TR2	Capitol Paving Truck Route	109.5	S	O	U	Line

## Notes:

<sup>1</sup> Sound Power Level (PWL) in dBA, excludes +5 dBA total penalty if applicable.

<sup>2</sup> Sound characteristics:

- S – Steady
- Q – Quasi-steady impulsive
- I – Impulsive
- B – Buzzing
- T – Tonal
- C – Cyclic

<sup>3</sup> Source location:

- O – Outside of building
- I – Inside of building

<sup>4</sup> Noise control measures:

- S – Silencer, acoustic louvre, muffler
- A – Acoustic lining, plenum
- B – Barrier, berm, screening
- L – Lagging
- E – Acoustic enclosure
- O – Other
- U – Uncontrolled
- AC – Administrative control

**Table 2**  
**Point of Reception Unattenuated Noise Impact**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34, Cambridge, Ontario

Cadna A ID	Source Description	Sideroad 10 N Residence Facade POR1			Highway 34 Residence Facade POR2			Highway 34 Residence Outdoor Receptor POR3			Highway 34 Residence Facade POR4			Highway 34 Residence Facade POR5			Highway 34 Residence Facade POR6			Concession Road Residence Facade POR7			Concession Road 4 Residence Facade POR8										
		Distance (m)	Partial Sound Levels <sup>1</sup> (dBA)			Distance (m)	Partial Sound Levels <sup>1</sup> (dBA)			Distance (m)	Partial Sound Levels <sup>1</sup> (dBA)			Distance (m)	Partial Sound Levels <sup>1</sup> (dBA)			Distance (m)	Partial Sound Levels <sup>1</sup> (dBA)			Distance (m)	Partial Sound Levels <sup>1</sup> (dBA)										
			Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am		Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am		Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am		Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am		Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am		Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am	Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am					
<b>Steady State Noise Impact</b>																																	
S1	Front End Loader	576	36	31	31	466	34	29	29	351	32	27	27	425	30	25	25	463	36	31	31	468	35	30	30	941	31	26	26	1217	28	23	23
S2A	Screening Equipment Motor	606	38	—	—	470	28	—	—	337	28	—	—	416	23	—	—	478	30	—	—	502	38	—	—	1030	29	—	—	1309	31	—	—
S2B	Screening Operation	601	36	—	—	464	33	—	—	334	29	—	—	414	25	—	—	479	32	—	—	507	39	—	—	1034	27	—	—	1312	28	—	—
S4	Excavator	593	34	31	31	455	31	28	28	329	27	24	24	410	23	20	20	481	30	27	27	514	35	32	32	1043	25	22	22	1317	27	24	24
TR1	Truck Route	613	32	27	27	492	31	26	26	141	37	32	32	83	42	37	37	177	43	38	38	387	37	32	32	951	28	23	23	1243	25	20	20
TR2	Capitol Paving Truck Route	783	25	25	25	507	25	25	25	142	31	31	31	81	38	38	38	178	40	40	40	206	36	36	36	1047	22	22	22	1442	19	19	19
<b>Total Facility Sound Level (1-hour Leq):</b>			<b>43</b>	<b>35</b>	<b>35</b>		<b>39</b>	<b>33</b>	<b>33</b>		<b>40</b>	<b>36</b>	<b>36</b>		<b>44</b>	<b>41</b>	<b>41</b>		<b>46</b>	<b>43</b>	<b>43</b>		<b>45</b>	<b>39</b>	<b>39</b>		<b>36</b>	<b>30</b>	<b>30</b>		<b>35</b>	<b>28</b>	<b>28</b>

Note:  
<sup>1</sup> Sound level at the receptor was calculated using Cadna A acoustical modelling software.

Table 3

**Acoustic Assessment Summary**  
**2374868 Ontario Inc.**  
**6678 Wellington Road 34, Cambridge, Ontario**

Point of Reception ID	Point of Reception Description	Time of Day	SS Sound Levels (L <sub>EQ</sub> )	Performance Limit <sup>1</sup> (L <sub>EQ</sub> )	Compliance with Performance Limit	Class Number	Verified by Acoustic Audit
			(dBA)	(dBA)	(Yes/No)		
<b>Steady State Noise Impact</b>							
POR1	Sideroad 10 N Residence Facade	07:00–19:00	43	50	Yes	Class 2	No
		19:00–23:00	35	50	Yes	Class 2	No
		23:00–07:00	35	45	Yes	Class 2	No
POR2	Highway 34 Residence Facade	07:00–19:00	39	50	Yes	Class 2	No
		19:00–23:00	33	50	Yes	Class 2	No
		23:00–07:00	33	45	Yes	Class 2	No
POR3	Highway 34 Residence Outdoor Receptor	07:00–19:00	40	50	Yes	Class 2	No
		19:00–23:00	36	45	Yes	Class 2	No
		23:00–07:00	36	45	Yes	Class 2	No
POR4	Highway 34 Residence Facade	07:00–19:00	44	50	Yes	Class 2	No
		19:00–23:00	41	50	Yes	Class 2	No
		23:00–07:00	41	45	Yes	Class 2	No
POR5	Highway 34 Residence Facade	07:00–19:00	46	50	Yes	Class 2	No
		19:00–23:00	43	50	Yes	Class 2	No
		23:00–07:00	43	45	Yes	Class 2	No
POR6	Highway 34 Residence Facade	07:00–19:00	45	50	Yes	Class 2	No
		19:00–23:00	39	50	Yes	Class 2	No
		23:00–07:00	39	45	Yes	Class 2	No
POR7	Concession Road Residence Facade	07:00–19:00	36	45	Yes	Class 3	No
		19:00–23:00	30	40	Yes	Class 3	No
		23:00–07:00	30	40	Yes	Class 3	No
POR8	Concession Road 4 Residence Facade	07:00–19:00	35	45	Yes	Class 3	No
		19:00–23:00	28	40	Yes	Class 3	No
		23:00–07:00	28	40	Yes	Class 3	No

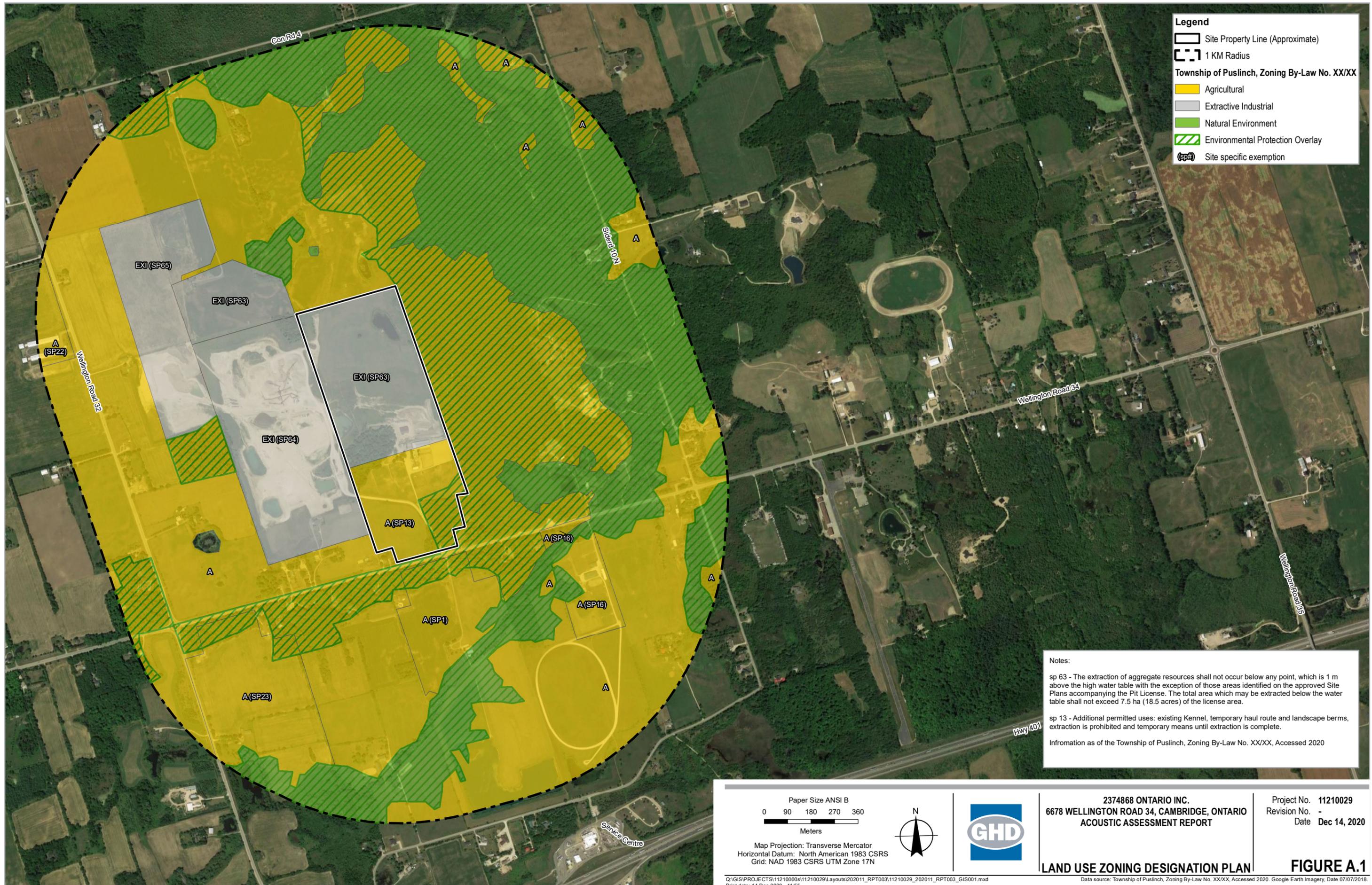
Note:

<sup>1</sup> Minimum MECP sound level limits as defined in NPC-300.

# Appendices

# **Appendix A**

## **Land Use Zoning Designation Plan**



**Legend**

- Site Property Line (Approximate)
- 1 KM Radius

**Township of Puslinch, Zoning By-Law No. XX/XX**

- Agricultural
- Extractive Industrial
- Natural Environment
- Environmental Protection Overlay
- (SP#) Site specific exemption

**Notes:**

sp 63 - The extraction of aggregate resources shall not occur below any point, which is 1 m above the high water table with the exception of those areas identified on the approved Site Plans accompanying the Pit License. The total area which may be extracted below the water table shall not exceed 7.5 ha (18.5 acres) of the license area.

sp 13 - Additional permitted uses: existing Kennel, temporary haul route and landscape berms, extraction is prohibited and temporary means until extraction is complete.

Information as of the Township of Puslinch, Zoning By-Law No. XX/XX, Accessed 2020

Paper Size ANSI B

0 90 180 270 360

Meters

Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983 CSRS  
 Grid: NAD 1983 CSRS UTM Zone 17N



2374868 ONTARIO INC.  
 6678 WELLINGTON ROAD 34, CAMBRIDGE, ONTARIO  
 ACOUSTIC ASSESSMENT REPORT

Project No. 11210029  
 Revision No. -  
 Date Dec 14, 2020

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 Print date: 14 Dec 2020 - 11:55

# **Appendix B**

## **Summary of Insignificant Noise Sources**

Table B.1

**Insignificant Noise Source Summary**  
**2374868 Ontario Inc.**  
**6678 Wellington Road 34, Cambridge, Ontario**

<b>Source ID</b>	<b>Source Description</b>	<b>Comments</b>
S3	Screening Operation Stockpiling	Air emission only. Not a source of noise.
NA	Comfort Heating for Onsite Buildings	Source Estimated to be < 20 dBA at worst-case POR

# **Appendix C**

**Noise Specification and Worst-Case  
Simultaneous Operations Summary**

**Table C.1**  
**Noise Source Sound Level Summary**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34, Cambridge, Ontario

Cadna A ID	Noise Source Description		1/1 Octave Band Data								Unadjusted Total Sound Power Level (dBA)	Tonal Penalty Assessment (dBA)	Height Absolute (m)	Operating Time / # Truck Movements Day (min)	Operating Time / #Truck Movements Evening (min)	Operating Time / #Truck Movements Night (min)	Reference/Comments	
			32	63	125	250	500	1000	2000	4000								8000
S1	Front End Loader	PWL (dB)	108.0	105.0	108.0	111.0	112.0	108.0	105.0	99.0	87.0	117.4						
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	68.6	78.8	91.9	102.4	108.8	108.0	106.2	100.0	85.9	113.2	No	0	1.0	60	30	30
S2A	Screening Equipment Motor	PWL (dB)	101.3	109.3	97.0	97.8	101.4	106.1	103.1	96.9	96.9	112.9						
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	61.9	83.1	80.9	89.2	98.2	106.1	104.3	97.9	95.8	109.3	No	0	1.0	60	0	0
S2B	Screening Operation	PWL (dB)	90.8	99.7	102.0	102.3	101.7	100.9	98.8	95.1	87.7	109.1						
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	51.4	73.5	85.9	93.7	98.5	100.9	100.0	96.1	86.6	105.6	No	0	3.0	60	0	0
S4	Excavator	PWL (dB)	98.0	95.0	98.0	101.0	102.0	98.0	95.0	89.0	77.0	107.4						
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	58.6	68.8	81.9	92.4	98.8	98.0	96.2	90.0	75.9	103.2	No	0	3.0	60	30	30
TR1	Truck Route	PWL (dB)	30.6	116.6	111.6	104.6	106.6	103.6	102.6	99.6	90.6	118.6						
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	—	90.4	95.5	96.0	103.4	103.6	103.8	100.6	89.5	109.5	No	0	2.5	6	2	2
TR2	Capitol Paving Truck Route	PWL (dB)	30.6	116.6	111.6	104.6	106.6	103.6	102.6	99.6	90.6	118.6						
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	—	90.4	95.5	96.0	103.4	103.6	103.8	100.6	89.5	109.5	No	0	2.5	5	5	5

# **Appendix D**

**CadnaA Sample Calculation for POR1**



Line Source, ISO 9613, Name: "Truck Route", ID: "TR1"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
244	560343.24	4810833.27	2.50	0	N	A	68.6	19.4	0.0	0.0	0.0	61.2	1.9	0.2	0.0	0.0	0.0	0.0	0.0	24.7
244	560343.24	4810833.27	2.50	0	E	A	68.6	19.4	0.0	0.0	0.0	61.2	1.9	0.2	0.0	0.0	0.0	0.0	0.0	24.7
315	560332.22	4810870.26	2.50	0	D	A	73.3	18.0	0.0	0.0	0.0	62.1	2.1	0.4	0.0	0.0	0.0	0.0	0.0	26.8
315	560332.22	4810870.26	2.50	0	N	A	68.6	18.0	0.0	0.0	0.0	62.1	2.1	0.4	0.0	0.0	0.0	0.0	0.0	22.0
315	560332.22	4810870.26	2.50	0	E	A	68.6	18.0	0.0	0.0	0.0	62.1	2.1	0.4	0.0	0.0	0.0	0.0	0.0	22.0
376	560336.00	4810852.75	2.50	2	D	A	73.3	14.3	0.0	0.0	0.0	66.9	3.1	-2.1	0.0	0.0	4.7	0.0	28.2	-13.2
376	560336.00	4810852.75	2.50	2	N	A	68.6	14.3	0.0	0.0	0.0	66.9	3.1	-2.1	0.0	0.0	4.7	0.0	28.2	-18.0
376	560336.00	4810852.75	2.50	2	E	A	68.6	14.3	0.0	0.0	0.0	66.9	3.1	-2.1	0.0	0.0	4.7	0.0	28.2	-18.0
385	560337.84	4810844.25	2.50	2	D	A	73.3	9.7	0.0	0.0	0.0	66.9	3.1	-2.0	0.0	0.0	4.7	0.0	28.2	-17.9
385	560337.84	4810844.25	2.50	2	N	A	68.6	9.7	0.0	0.0	0.0	66.9	3.1	-2.0	0.0	0.0	4.7	0.0	28.2	-22.7
385	560337.84	4810844.25	2.50	2	E	A	68.6	9.7	0.0	0.0	0.0	66.9	3.1	-2.0	0.0	0.0	4.7	0.0	28.2	-22.7
394	560328.65	4810886.76	2.50	2	D	A	73.3	14.6	0.0	0.0	0.0	66.4	3.0	-2.3	0.0	0.0	4.7	0.0	27.2	-11.1
394	560328.65	4810886.76	2.50	2	N	A	68.6	14.6	0.0	0.0	0.0	66.4	3.0	-2.3	0.0	0.0	4.7	0.0	27.2	-15.9
394	560328.65	4810886.76	2.50	2	E	A	68.6	14.6	0.0	0.0	0.0	66.4	3.0	-2.3	0.0	0.0	4.7	0.0	27.2	-15.9
431	560323.89	4810898.19	2.50	0	D	A	73.3	16.8	0.0	0.0	0.0	62.7	2.2	0.2	0.0	0.0	0.0	0.0	0.0	25.1
431	560323.89	4810898.19	2.50	0	N	A	68.6	16.8	0.0	0.0	0.0	62.7	2.2	0.2	0.0	0.0	0.0	0.0	0.0	20.3
431	560323.89	4810898.19	2.50	0	E	A	68.6	16.8	0.0	0.0	0.0	62.7	2.2	0.2	0.0	0.0	0.0	0.0	0.0	20.3
447	560325.98	4810891.90	2.50	2	D	A	73.3	15.4	0.0	0.0	0.0	66.4	3.0	-2.3	0.0	0.0	4.7	0.0	27.0	-10.0
447	560325.98	4810891.90	2.50	2	N	A	68.6	15.4	0.0	0.0	0.0	66.4	3.0	-2.3	0.0	0.0	4.7	0.0	27.0	-14.8
447	560325.98	4810891.90	2.50	2	E	A	68.6	15.4	0.0	0.0	0.0	66.4	3.0	-2.3	0.0	0.0	4.7	0.0	27.0	-14.8
458	560316.60	4810920.06	2.50	2	D	A	73.3	2.9	0.0	0.0	0.0	65.9	2.9	-2.2	0.0	0.0	4.7	0.0	10.0	-5.1
458	560316.60	4810920.06	2.50	2	N	A	68.6	2.9	0.0	0.0	0.0	65.9	2.9	-2.2	0.0	0.0	4.7	0.0	10.0	-9.8
458	560316.60	4810920.06	2.50	2	E	A	68.6	2.9	0.0	0.0	0.0	65.9	2.9	-2.2	0.0	0.0	4.7	0.0	10.0	-9.8
459	560309.43	4810935.19	2.50	0	D	A	73.3	15.0	0.0	0.0	0.0	63.5	2.4	0.0	0.0	0.0	0.0	0.0	0.0	22.5
459	560309.43	4810935.19	2.50	0	N	A	68.6	15.0	0.0	0.0	0.0	63.5	2.4	0.0	0.0	0.0	0.0	0.0	0.0	17.7
459	560309.43	4810935.19	2.50	0	E	A	68.6	15.0	0.0	0.0	0.0	63.5	2.4	0.0	0.0	0.0	0.0	0.0	0.0	17.7
468	560313.96	4810925.81	2.50	2	D	A	73.3	10.3	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	10.0	2.5
468	560313.96	4810925.81	2.50	2	N	A	68.6	10.3	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	10.0	-2.3
468	560313.96	4810925.81	2.50	2	E	A	68.6	10.3	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	10.0	-2.3
475	560319.72	4810913.38	2.50	0	D	A	73.3	14.4	0.0	0.0	0.0	63.0	2.3	-0.0	0.0	0.0	0.0	0.0	0.0	22.5
475	560319.72	4810913.38	2.50	0	N	A	68.6	14.4	0.0	0.0	0.0	63.0	2.3	-0.0	0.0	0.0	0.0	0.0	0.0	17.7
475	560319.72	4810913.38	2.50	0	E	A	68.6	14.4	0.0	0.0	0.0	63.0	2.3	-0.0	0.0	0.0	0.0	0.0	0.0	17.7
477	560323.16	4810906.07	2.50	2	D	A	73.3	10.6	0.0	0.0	0.0	66.2	2.9	-2.3	0.0	0.0	4.7	0.0	26.6	-14.2
477	560323.16	4810906.07	2.50	2	N	A	68.6	10.6	0.0	0.0	0.0	66.2	2.9	-2.3	0.0	0.0	4.7	0.0	26.6	-19.0
477	560323.16	4810906.07	2.50	2	E	A	68.6	10.6	0.0	0.0	0.0	66.2	2.9	-2.3	0.0	0.0	4.7	0.0	26.6	-19.0
479	560315.38	4810922.61	2.50	2	D	A	73.3	8.6	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	10.0	0.7
479	560315.38	4810922.61	2.50	2	N	A	68.6	8.6	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	10.0	-4.0
479	560315.38	4810922.61	2.50	2	E	A	68.6	8.6	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	10.0	-4.0
481	560308.21	4810937.15	2.50	0	D	A	73.3	14.0	0.0	0.0	0.0	63.5	2.4	0.1	0.0	0.0	0.0	0.0	0.0	21.4
481	560308.21	4810937.15	2.50	0	N	A	68.6	14.0	0.0	0.0	0.0	63.5	2.4	0.1	0.0	0.0	0.0	0.0	0.0	16.6
481	560308.21	4810937.15	2.50	0	E	A	68.6	14.0	0.0	0.0	0.0	63.5	2.4	0.1	0.0	0.0	0.0	0.0	0.0	16.6
484	560312.72	4810928.12	2.50	2	D	A	73.3	7.0	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	9.9	-0.7
484	560312.72	4810928.12	2.50	2	N	A	68.6	7.0	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	9.9	-5.5
484	560312.72	4810928.12	2.50	2	E	A	68.6	7.0	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	9.9	-5.5
495	560304.53	4810961.16	2.50	0	D	A	73.3	13.8	0.0	0.0	0.0	64.0	2.4	-0.3	0.0	0.0	0.0	0.0	0.0	21.0
495	560304.53	4810961.16	2.50	0	N	A	68.6	13.8	0.0	0.0	0.0	64.0	2.4	-0.3	0.0	0.0	0.0	0.0	0.0	16.2
495	560304.53	4810961.16	2.50	0	E	A	68.6	13.8	0.0	0.0	0.0	64.0	2.4	-0.3	0.0	0.0	0.0	0.0	0.0	16.2
497	560301.35	4811002.08	2.50	0	D	A	73.3	13.3	0.0	0.0	0.0	64.7	2.6	-1.1	0.0	0.0	0.0	0.0	0.0	20.4
497	560301.35	4811002.08	2.50	0	N	A	68.6	13.3	0.0	0.0	0.0	64.7	2.6	-1.1	0.0	0.0	0.0	0.0	0.0	15.6
497	560301.35	4811002.08	2.50	0	E	A	68.6	13.3	0.0	0.0	0.0	64.7	2.6	-1.1	0.0	0.0	0.0	0.0	0.0	15.6
499	560300.22	4811011.79	2.50	1	D	A	73.3	2.2	0.0	0.0	0.0	65.3	2.7	-2.1	0.0	0.0	4.7	0.0	8.7	-3.8
499	560300.22	4811011.79	2.50	1	N	A	68.6	2.2	0.0	0.0	0.0	65.3	2.7	-2.1	0.0	0.0	4.7	0.0	8.7	-8.6
499	560300.22	4811011.79	2.50	1	E	A	68.6	2.2	0.0	0.0	0.0	65.3	2.7	-2.1	0.0	0.0	4.7	0.0	8.7	-8.6
501	560304.29	4810969.25	2.50	0	D	A	73.3	12.1	0.0	0.0	0.0	64.1	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	19.3
501	560304.29	4810969.25	2.50	0	N	A	68.6	12.1	0.0	0.0	0.0	64.1	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	14.5
501	560304.29	4810969.25	2.50	0	E	A	68.6	12.1	0.0	0.0	0.0	64.1	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	14.5
502	560303.31	4810954.79	2.50	0	D	A	73.3	11.1	0.0	0.0	0.0	63.8	2.4	-0.1	0.0	0.0	0.0	0.0	0.0	18.3
502	560303.31	4810954.79	2.50	0	N	A	68.6	11.1	0.0	0.0	0.0	63.8	2.4	-0.1	0.0	0.0	0.0	0.0	0.0	13.5
502	560303.31	4810954.79	2.50	0	E	A	68.6	11.1	0.0	0.0	0.0	63.8	2.4	-0.1	0.0	0.0	0.0	0.0	0.0	13.5
503	560303.55	4810984.44	2.50	0	D	A	73.3	11.6	0.0	0.0	0.0	64.4	2.5	-0.8	0.0	0.0	0.0	0.0	0.0	18.7
503	560303.55	4810984.44	2.50	0	N	A	68.6	11.6	0.0	0.0	0.0	64.4	2.5	-0.8	0.0	0.0	0.0	0.0	0.0	14.0
503	560303.55	4810984.44	2.50	0	E	A	68.6	11.6	0.0	0.0	0.0	64.4	2.5	-0.8	0.0	0.0	0.0	0.0	0.0	14.0
504	560355.74	4811001.59	2.50	0	D	A	73.3	11.5	0.0	0.0	0.0	64.8	2.6	-1.8	0.0	0.0	4.7	0.0	0.0	14.5
504	560355.74	4811001.59	2.50	0	N	A	68.6	11.5	0.0	0.0	0.0	64.8	2.6	-1.8	0.0	0.0	4.7	0.0	0.0	9.7
504	560355.74	4811001.59	2.50	0	E	A	68.6	11.5	0.0	0.0	0.0	64.8	2.6	-1.8	0.0	0.0	4.7	0.0	0.0	9.7
505	560312.74	4810976.98	2.50	0	D	A	73.3	9.3	0.0	0.0</										

Line Source, ISO 9613, Name: "Truck Route", ID: "TR1"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
505	560312.74	4810976.98	2.50	0	E	A	68.6	9.3	0.0	0.0	0.0	64.3	2.5	-1.0	0.0	0.0	3.6	0.0	0.0	8.5
506	560308.61	4810974.30	2.50	0	D	A	73.3	1.3	0.0	0.0	0.0	64.2	2.5	-0.8	0.0	0.0	0.0	0.0	0.0	8.7
506	560308.61	4810974.30	2.50	0	N	A	68.6	1.3	0.0	0.0	0.0	64.2	2.5	-0.8	0.0	0.0	0.0	0.0	0.0	4.0
506	560308.61	4810974.30	2.50	0	E	A	68.6	1.3	0.0	0.0	0.0	64.2	2.5	-0.8	0.0	0.0	0.0	0.0	0.0	4.0
507	560307.27	4810973.42	2.50	0	D	A	73.3	2.7	0.0	0.0	0.0	64.2	2.5	-0.7	0.0	0.0	0.0	0.0	0.0	10.0
507	560307.27	4810973.42	2.50	0	N	A	68.6	2.7	0.0	0.0	0.0	64.2	2.5	-0.7	0.0	0.0	0.0	0.0	0.0	5.2
507	560307.27	4810973.42	2.50	0	E	A	68.6	2.7	0.0	0.0	0.0	64.2	2.5	-0.7	0.0	0.0	0.0	0.0	0.0	5.2
516	560315.85	4810979.00	2.50	2	D	A	73.3	0.2	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.7	0.0	9.6	-6.3
516	560315.85	4810979.00	2.50	2	N	A	68.6	0.2	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.7	0.0	9.6	-11.1
516	560315.85	4810979.00	2.50	2	E	A	68.6	0.2	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.7	0.0	9.6	-11.1
524	560319.48	4811027.31	2.50	0	D	A	73.3	11.5	0.0	0.0	0.0	65.2	2.7	-1.6	0.0	0.0	12.2	0.0	0.0	6.4
524	560319.48	4811027.31	2.50	0	N	A	68.6	11.5	0.0	0.0	0.0	65.2	2.7	-1.6	0.0	0.0	12.2	0.0	0.0	1.7
524	560319.48	4811027.31	2.50	0	E	A	68.6	11.5	0.0	0.0	0.0	65.2	2.7	-1.6	0.0	0.0	12.2	0.0	0.0	1.7
538	560333.69	4811027.07	2.50	0	D	A	73.3	11.5	0.0	0.0	0.0	65.2	2.7	-1.7	0.0	0.0	14.8	0.0	0.0	4.0
538	560333.69	4811027.07	2.50	0	N	A	68.6	11.5	0.0	0.0	0.0	65.2	2.7	-1.7	0.0	0.0	14.8	0.0	0.0	-0.8
538	560333.69	4811027.07	2.50	0	E	A	68.6	11.5	0.0	0.0	0.0	65.2	2.7	-1.7	0.0	0.0	14.8	0.0	0.0	-0.8
540	560321.44	4810981.50	2.50	0	D	A	73.3	10.5	0.0	0.0	0.0	64.4	2.5	-1.4	0.0	0.0	4.7	0.0	0.0	13.7
540	560321.44	4810981.50	2.50	0	N	A	68.6	10.5	0.0	0.0	0.0	64.4	2.5	-1.4	0.0	0.0	4.7	0.0	0.0	8.9
540	560321.44	4810981.50	2.50	0	E	A	68.6	10.5	0.0	0.0	0.0	64.4	2.5	-1.4	0.0	0.0	4.7	0.0	0.0	8.9
542	560323.13	4810982.22	2.50	1	D	A	73.3	8.8	0.0	0.0	0.0	64.6	2.6	-1.5	0.0	0.0	4.7	0.0	1.4	10.3
542	560323.13	4810982.22	2.50	1	N	A	68.6	8.8	0.0	0.0	0.0	64.6	2.6	-1.5	0.0	0.0	4.7	0.0	1.4	5.5
542	560323.13	4810982.22	2.50	1	E	A	68.6	8.8	0.0	0.0	0.0	64.6	2.6	-1.5	0.0	0.0	4.7	0.0	1.4	5.5
547	560320.43	4810981.06	2.50	1	D	A	73.3	9.5	0.0	0.0	0.0	64.6	2.6	-1.9	0.0	0.0	4.7	0.0	8.5	4.3
547	560320.43	4810981.06	2.50	1	N	A	68.6	9.5	0.0	0.0	0.0	64.6	2.6	-1.9	0.0	0.0	4.7	0.0	8.5	-0.4
547	560320.43	4810981.06	2.50	1	E	A	68.6	9.5	0.0	0.0	0.0	64.6	2.6	-1.9	0.0	0.0	4.7	0.0	8.5	-0.4
549	560318.70	4810980.32	2.50	2	D	A	73.3	7.2	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.7	0.0	9.6	0.6
549	560318.70	4810980.32	2.50	2	N	A	68.6	7.2	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.7	0.0	9.6	-4.1
549	560318.70	4810980.32	2.50	2	E	A	68.6	7.2	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.7	0.0	9.6	-4.1
551	560345.38	4811022.62	2.50	0	D	A	73.3	10.7	0.0	0.0	0.0	65.2	2.7	-1.8	0.0	0.0	11.7	0.0	0.0	6.3
551	560345.38	4811022.62	2.50	0	N	A	68.6	10.7	0.0	0.0	0.0	65.2	2.7	-1.8	0.0	0.0	11.7	0.0	0.0	1.6
551	560345.38	4811022.62	2.50	0	E	A	68.6	10.7	0.0	0.0	0.0	65.2	2.7	-1.8	0.0	0.0	11.7	0.0	0.0	1.6
562	560350.53	4811018.45	2.50	0	D	A	73.3	1.6	0.0	0.0	0.0	65.1	2.7	-1.8	0.0	0.0	4.7	0.0	0.0	4.2
562	560350.53	4811018.45	2.50	0	N	A	68.6	1.6	0.0	0.0	0.0	65.1	2.7	-1.8	0.0	0.0	4.7	0.0	0.0	-0.6
562	560350.53	4811018.45	2.50	0	E	A	68.6	1.6	0.0	0.0	0.0	65.1	2.7	-1.8	0.0	0.0	4.7	0.0	0.0	-0.6
564	560306.58	4811023.40	2.50	0	D	A	73.3	10.6	0.0	0.0	0.0	65.1	2.7	-1.5	0.0	0.0	0.0	0.0	0.0	17.7
564	560306.58	4811023.40	2.50	0	N	A	68.6	10.6	0.0	0.0	0.0	65.1	2.7	-1.5	0.0	0.0	0.0	0.0	0.0	12.9
564	560306.58	4811023.40	2.50	0	E	A	68.6	10.6	0.0	0.0	0.0	65.1	2.7	-1.5	0.0	0.0	0.0	0.0	0.0	12.9
566	560311.97	4811026.58	2.50	0	D	A	73.3	-0.3	0.0	0.0	0.0	65.2	2.7	-1.5	0.0	0.0	4.1	0.0	0.0	2.6
566	560311.97	4811026.58	2.50	0	N	A	68.6	-0.3	0.0	0.0	0.0	65.2	2.7	-1.5	0.0	0.0	4.1	0.0	0.0	-2.2
566	560311.97	4811026.58	2.50	0	E	A	68.6	-0.3	0.0	0.0	0.0	65.2	2.7	-1.5	0.0	0.0	4.1	0.0	0.0	-2.2
584	560303.69	4811021.69	2.50	1	D	A	73.3	6.9	0.0	0.0	0.0	65.1	2.7	-1.6	0.0	0.0	4.7	0.0	1.7	7.6
584	560303.69	4811021.69	2.50	1	N	A	68.6	6.9	0.0	0.0	0.0	65.1	2.7	-1.6	0.0	0.0	4.7	0.0	1.7	2.8
584	560303.69	4811021.69	2.50	1	E	A	68.6	6.9	0.0	0.0	0.0	65.1	2.7	-1.6	0.0	0.0	4.7	0.0	1.7	2.8
592	560306.32	4811023.24	2.50	1	D	A	73.3	0.8	0.0	0.0	0.0	65.1	2.7	-1.5	0.0	0.0	0.0	0.0	1.4	6.5
592	560306.32	4811023.24	2.50	1	N	A	68.6	0.8	0.0	0.0	0.0	65.1	2.7	-1.5	0.0	0.0	0.0	0.0	1.4	1.8
592	560306.32	4811023.24	2.50	1	E	A	68.6	0.8	0.0	0.0	0.0	65.1	2.7	-1.5	0.0	0.0	0.0	0.0	1.4	1.8
595	560303.46	4811021.56	2.50	1	D	A	73.3	6.4	0.0	0.0	0.0	65.4	2.7	-2.1	0.0	0.0	8.8	0.0	12.9	-8.1
595	560303.46	4811021.56	2.50	1	N	A	68.6	6.4	0.0	0.0	0.0	65.4	2.7	-2.1	0.0	0.0	8.8	0.0	12.9	-12.8
595	560303.46	4811021.56	2.50	1	E	A	68.6	6.4	0.0	0.0	0.0	65.4	2.7	-2.1	0.0	0.0	8.8	0.0	12.9	-12.8
597	560351.08	4810991.30	2.50	0	D	A	73.3	10.4	0.0	0.0	0.0	64.6	2.6	-1.7	0.0	0.0	4.7	0.0	0.0	13.5
597	560351.08	4810991.30	2.50	0	N	A	68.6	10.4	0.0	0.0	0.0	64.6	2.6	-1.7	0.0	0.0	4.7	0.0	0.0	8.7
597	560351.08	4810991.30	2.50	0	E	A	68.6	10.4	0.0	0.0	0.0	64.6	2.6	-1.7	0.0	0.0	4.7	0.0	0.0	8.7
599	560347.68	4810988.84	2.50	1	D	A	73.3	4.0	0.0	0.0	0.0	64.7	2.6	-1.7	0.0	0.0	4.7	0.0	1.2	5.8
599	560347.68	4810988.84	2.50	1	N	A	68.6	4.0	0.0	0.0	0.0	64.7	2.6	-1.7	0.0	0.0	4.7	0.0	1.2	1.0
599	560347.68	4810988.84	2.50	1	E	A	68.6	4.0	0.0	0.0	0.0	64.7	2.6	-1.7	0.0	0.0	4.7	0.0	1.2	1.0
601	560331.48	4810985.17	2.50	0	D	A	73.3	10.1	0.0	0.0	0.0	64.5	2.5	-1.5	0.0	0.0	4.7	0.0	0.0	13.3
601	560331.48	4810985.17	2.50	0	N	A	68.6	10.1	0.0	0.0	0.0	64.5	2.5	-1.5	0.0	0.0	4.7	0.0	0.0	8.5
601	560331.48	4810985.17	2.50	0	E	A	68.6	10.1	0.0	0.0	0.0	64.5	2.5	-1.5	0.0	0.0	4.7	0.0	0.0	8.5
603	560331.48	4810985.17	2.50	1	D	A	73.3	10.1	0.0	0.0	0.0	64.7	2.6	-1.6	0.0	0.0	4.7	0.0	1.2	11.9
603	560331.48	4810985.17	2.50	1	N	A	68.6	10.1	0.0	0.0	0.0	64.7	2.6	-1.6	0.0	0.0	4.7	0.0	1.2	7.1
603	560331.48	4810985.17	2.50	1	E	A	68.6	10.1	0.0	0.0	0.0	64.7	2.6	-1.6	0.0	0.0	4.7	0.0	1.2	7.1
605	560333.19	4810985.68	2.50	1	D	A	73.3	8.2	0.0	0.0	0.0	64.7	2.6	-1.9	0.0	0.0	5.0	0.0	4.2	7.0
605	560333.19	4810985.68	2.50	1	N	A	68.6	8.2	0.0	0.0	0.0	64.7	2.6	-1.9	0.0	0.0	5.0	0.0	4.2	2.3
605	560333.19	4810985.68	2.50	1	E	A	68.6	8.2	0.0	0.0	0.0	64.7	2.6	-1.9	0.0	0.0	5.0	0.0	4.2	2.3
608	560331.60	4810985.21	2.50	2	D	A	73.3	10.0	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.8	0.0	9.7	3.2
608	560331.60	4810985.21	2.50	2	N	A	68.6	10.0	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.8	0.0	9.	

Line Source, ISO 9613, Name: "Truck Route", ID: "TR1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
610	560341.53	4810987.38	2.50	0	D	A	73.3	10.2	0.0	0.0	0.0	64.5	2.6	-1.6	0.0	0.0	4.7	0.0	0.0	13.3
610	560341.53	4810987.38	2.50	0	N	A	68.6	10.2	0.0	0.0	0.0	64.5	2.6	-1.6	0.0	0.0	4.7	0.0	0.0	8.6
610	560341.53	4810987.38	2.50	0	E	A	68.6	10.2	0.0	0.0	0.0	64.5	2.6	-1.6	0.0	0.0	4.7	0.0	0.0	8.6
612	560341.53	4810987.38	2.50	1	D	A	73.3	10.2	0.0	0.0	0.0	64.7	2.6	-1.7	0.0	0.0	4.7	0.0	1.2	12.0
612	560341.53	4810987.38	2.50	1	N	A	68.6	10.2	0.0	0.0	0.0	64.7	2.6	-1.7	0.0	0.0	4.7	0.0	1.2	7.2
612	560341.53	4810987.38	2.50	1	E	A	68.6	10.2	0.0	0.0	0.0	64.7	2.6	-1.7	0.0	0.0	4.7	0.0	1.2	7.2
614	560338.82	4810986.99	2.50	1	D	A	73.3	6.9	0.0	0.0	0.0	64.6	2.6	-1.8	0.0	0.0	4.7	0.0	4.1	6.1
614	560338.82	4810986.99	2.50	1	N	A	68.6	6.9	0.0	0.0	0.0	64.6	2.6	-1.8	0.0	0.0	4.7	0.0	4.1	1.3
614	560338.82	4810986.99	2.50	1	E	A	68.6	6.9	0.0	0.0	0.0	64.6	2.6	-1.8	0.0	0.0	4.7	0.0	4.1	1.3
616	560337.50	4810986.80	2.50	2	D	A	73.3	3.5	0.0	0.0	0.0	64.8	2.6	-1.9	0.0	0.0	4.7	0.0	5.1	1.5
616	560337.50	4810986.80	2.50	2	N	A	68.6	3.5	0.0	0.0	0.0	64.8	2.6	-1.9	0.0	0.0	4.7	0.0	5.1	-3.2
616	560337.50	4810986.80	2.50	2	E	A	68.6	3.5	0.0	0.0	0.0	64.8	2.6	-1.9	0.0	0.0	4.7	0.0	5.1	-3.2
618	560353.53	4811013.35	2.50	0	D	A	73.3	10.2	0.0	0.0	0.0	65.0	2.7	-1.8	0.0	0.0	4.7	0.0	0.0	13.0
618	560353.53	4811013.35	2.50	0	N	A	68.6	10.2	0.0	0.0	0.0	65.0	2.7	-1.8	0.0	0.0	4.7	0.0	0.0	8.2
618	560353.53	4811013.35	2.50	0	E	A	68.6	10.2	0.0	0.0	0.0	65.0	2.7	-1.8	0.0	0.0	4.7	0.0	0.0	8.2
620	560300.86	4811016.53	2.50	0	D	A	73.3	9.0	0.0	0.0	0.0	65.0	2.7	-1.1	0.0	0.0	0.0	0.0	0.0	15.9
620	560300.86	4811016.53	2.50	0	N	A	68.6	9.0	0.0	0.0	0.0	65.0	2.7	-1.1	0.0	0.0	0.0	0.0	0.0	11.1
620	560300.86	4811016.53	2.50	0	E	A	68.6	9.0	0.0	0.0	0.0	65.0	2.7	-1.1	0.0	0.0	0.0	0.0	0.0	11.1
622	560301.35	4811019.15	2.50	1	D	A	73.3	4.2	0.0	0.0	0.0	65.1	2.7	-1.6	0.0	0.0	4.7	0.0	4.1	2.5
622	560301.35	4811019.15	2.50	1	N	A	68.6	4.2	0.0	0.0	0.0	65.1	2.7	-1.6	0.0	0.0	4.7	0.0	4.1	-2.2
622	560301.35	4811019.15	2.50	1	E	A	68.6	4.2	0.0	0.0	0.0	65.1	2.7	-1.6	0.0	0.0	4.7	0.0	4.1	-2.2
624	560300.63	4811015.33	2.50	1	D	A	73.3	7.4	0.0	0.0	0.0	65.3	2.7	-2.1	0.0	0.0	4.7	0.0	8.8	1.4
624	560300.63	4811015.33	2.50	1	N	A	68.6	7.4	0.0	0.0	0.0	65.3	2.7	-2.1	0.0	0.0	4.7	0.0	8.8	-3.4
624	560300.63	4811015.33	2.50	1	E	A	68.6	7.4	0.0	0.0	0.0	65.3	2.7	-2.1	0.0	0.0	4.7	0.0	8.8	-3.4
626	560301.37	4811019.25	2.50	1	D	A	73.3	3.9	0.0	0.0	0.0	65.4	2.7	-2.1	0.0	0.0	6.4	0.0	11.7	-6.8
626	560301.37	4811019.25	2.50	1	N	A	68.6	3.9	0.0	0.0	0.0	65.4	2.7	-2.1	0.0	0.0	6.4	0.0	11.7	-11.6
626	560301.37	4811019.25	2.50	1	E	A	68.6	3.9	0.0	0.0	0.0	65.4	2.7	-2.1	0.0	0.0	6.4	0.0	11.7	-11.6

Point Source, ISO 9613, Name: "Screening Operation", ID: "S2B"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
124	560381.18	4810984.87	3.00	0	D	A	105.6	0.0	0.0	0.0	0.0	64.6	2.6	-1.9	0.0	0.0	8.2	0.0	0.0	32.1
124	560381.18	4810984.87	3.00	0	N	A	105.6	0.0	-188.0	0.0	0.0	64.6	2.6	-1.9	0.0	0.0	8.2	0.0	0.0	-155.9
124	560381.18	4810984.87	3.00	0	E	A	105.6	0.0	-188.0	0.0	0.0	64.6	2.6	-1.9	0.0	0.0	8.2	0.0	0.0	-155.9

Line Source, ISO 9613, Name: "Front End Loader", ID: "S1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
138	560299.58	4811060.75	2.50	0	D	A	82.0	14.6	0.0	0.0	0.0	65.7	2.1	-1.2	0.0	0.0	0.0	0.0	0.0	29.9
138	560299.58	4811060.75	2.50	0	N	A	77.2	14.6	0.0	0.0	0.0	65.7	2.1	-1.2	0.0	0.0	0.0	0.0	0.0	25.1
138	560299.58	4811060.75	2.50	0	E	A	77.2	14.6	0.0	0.0	0.0	65.7	2.1	-1.2	0.0	0.0	0.0	0.0	0.0	25.1
140	560314.43	4811059.38	2.50	0	D	A	82.0	1.1	0.0	0.0	0.0	65.7	2.1	-1.7	0.0	0.0	2.2	0.0	0.0	14.8
140	560314.43	4811059.38	2.50	0	N	A	77.2	1.1	0.0	0.0	0.0	65.7	2.1	-1.7	0.0	0.0	2.2	0.0	0.0	10.0
140	560314.43	4811059.38	2.50	0	E	A	77.2	1.1	0.0	0.0	0.0	65.7	2.1	-1.7	0.0	0.0	2.2	0.0	0.0	10.0
148	560333.43	4811057.63	2.50	0	D	A	82.0	15.7	0.0	0.0	0.0	65.7	2.1	-1.9	0.0	0.0	6.0	0.0	0.0	25.7
148	560333.43	4811057.63	2.50	0	N	A	77.2	15.7	0.0	0.0	0.0	65.7	2.1	-1.9	0.0	0.0	6.0	0.0	0.0	20.9
148	560333.43	4811057.63	2.50	0	E	A	77.2	15.7	0.0	0.0	0.0	65.7	2.1	-1.9	0.0	0.0	6.0	0.0	0.0	20.9
150	560286.14	4811061.99	2.50	1	D	A	82.0	1.8	0.0	0.0	0.0	65.8	2.1	-1.7	0.0	0.0	4.8	0.0	11.0	1.8
150	560286.14	4811061.99	2.50	1	N	A	77.2	1.8	0.0	0.0	0.0	65.8	2.1	-1.7	0.0	0.0	4.8	0.0	11.0	-3.0
150	560286.14	4811061.99	2.50	1	E	A	77.2	1.8	0.0	0.0	0.0	65.8	2.1	-1.7	0.0	0.0	4.8	0.0	11.0	-3.0
159	560287.66	4811061.85	2.50	1	D	A	82.0	1.8	0.0	0.0	0.0	65.8	2.1	-1.7	0.0	0.0	0.0	0.0	4.7	12.8
159	560287.66	4811061.85	2.50	1	N	A	77.2	1.8	0.0	0.0	0.0	65.8	2.1	-1.7	0.0	0.0	0.0	0.0	4.7	8.0
159	560287.66	4811061.85	2.50	1	E	A	77.2	1.8	0.0	0.0	0.0	65.8	2.1	-1.7	0.0	0.0	0.0	0.0	4.7	8.0
162	560285.88	4811062.02	2.50	1	D	A	82.0	0.0	0.0	0.0	0.0	66.1	2.2	-2.2	0.0	0.0	4.9	0.0	31.2	-20.2
162	560285.88	4811062.02	2.50	1	N	A	77.2	0.0	0.0	0.0	0.0	66.1	2.2	-2.2	0.0	0.0	4.9	0.0	31.2	-25.0
162	560285.88	4811062.02	2.50	1	E	A	77.2	0.0	0.0	0.0	0.0	66.1	2.2	-2.2	0.0	0.0	4.9	0.0	31.2	-25.0
215	560366.20	4810998.53	2.50	0	D	A	82.0	10.0	0.0	0.0	0.0	64.8	1.9	-1.9	0.0	0.0	6.1	0.0	0.0	21.0
215	560366.20	4810998.53	2.50	0	N	A	77.2	10.0	0.0	0.0	0.0	64.8	1.9	-1.9	0.0	0.0	6.1	0.0	0.0	16.2
215	560366.20	4810998.53	2.50	0	E	A	77.2	10.0	0.0	0.0	0.0	64.8	1.9	-1.9	0.0	0.0	6.1	0.0	0.0	16.2
218	560352.23	4810988.00	2.50	0	D	A	82.0	14.0	0.0	0.0	0.0	64.6	1.9	-1.7	0.0	0.0	4.8	0.0	0.0	26.4
218	560352.23	4810988.00	2.50	0	N	A	77.2	14.0	0.0	0.0	0.0	64.6	1.9	-1.7	0.0	0.0	4.8	0.0	0.0	21.6
218	560352.23	4810988.00	2.50	0	E	A	77.2	14.0	0.0	0.0	0.0	64.6	1.9	-1.7	0.0	0.0	4.8	0.0	0.0	21.6
220	560346.32	4810983.54	2.50	1	D	A	82.0	10.1	0.0	0.0	0.0	64.8	2.0	-1.7	0.0	0.0	4.8	0.0	1.0	21.2
220	560346.32	4810983.54	2.50	1	N	A	77.2	10.1	0.0	0.0	0.0	64.8	2.0	-1.7	0.0	0.0	4.8	0.0	1.0	16.5
220	560346.32	4810983.54	2.50	1	E	A	77.2	10.1	0.0	0.0	0.0	64.8	2.0	-1.7	0.0	0.0	4.8	0.0	1.0	16.5
227	560367.75	4810999.70	2.50	2	D	A	82.0	7.8	0.0	0.0	0.0	66.0	2.2	-2.0	0.0	0.0	4.8	0.0	12.1	6.8
227	560367.75	4810999.70	2.50	2	N	A	77.2	7.8	0.0	0.0	0.0	66.0	2.2	-2.0	0.0	0.0	4.8	0.0	12.1	2.0
227	560367.75	4810999.70	2.50	2	E	A	77.2	7.8	0.0	0.0	0.0	66.0	2.2	-2.0	0.0	0.0	4.8	0.0	12.1	2.0

Line Source, ISO 9613, Name: "Front End Loader", ID: "S1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
237	560369.26	4811000.84	2.50	2	D	A	82.0	3.6	0.0	0.0	0.0	66.9	2.4	-2.1	0.0	0.0	5.3	0.0	35.1	-22.0
237	560369.26	4811000.84	2.50	2	N	A	77.2	3.6	0.0	0.0	0.0	66.9	2.4	-2.1	0.0	0.0	5.3	0.0	35.1	-26.7
237	560369.26	4811000.84	2.50	2	E	A	77.2	3.6	0.0	0.0	0.0	66.9	2.4	-2.1	0.0	0.0	5.3	0.0	35.1	-26.7
241	560343.08	4810981.09	2.50	1	D	A	82.0	3.2	0.0	0.0	0.0	64.5	1.9	-1.8	0.0	0.0	4.8	0.0	4.6	11.3
241	560343.08	4810981.09	2.50	1	N	A	77.2	3.2	0.0	0.0	0.0	64.5	1.9	-1.8	0.0	0.0	4.8	0.0	4.6	6.5
241	560343.08	4810981.09	2.50	1	E	A	77.2	3.2	0.0	0.0	0.0	64.5	1.9	-1.8	0.0	0.0	4.8	0.0	4.6	6.5
246	560353.42	4811054.97	2.50	0	D	A	82.0	5.8	0.0	0.0	0.0	65.7	2.1	-2.0	0.0	0.0	5.0	0.0	0.0	16.9
246	560353.42	4811054.97	2.50	0	N	A	77.2	5.8	0.0	0.0	0.0	65.7	2.1	-2.0	0.0	0.0	5.0	0.0	0.0	12.2
246	560353.42	4811054.97	2.50	0	E	A	77.2	5.8	0.0	0.0	0.0	65.7	2.1	-2.0	0.0	0.0	5.0	0.0	0.0	12.2
248	560362.99	4811049.28	2.50	0	D	A	82.0	12.7	0.0	0.0	0.0	65.6	2.1	-2.0	0.0	0.0	4.8	0.0	0.0	24.1
248	560362.99	4811049.28	2.50	0	N	A	77.2	12.7	0.0	0.0	0.0	65.6	2.1	-2.0	0.0	0.0	4.8	0.0	0.0	19.4
248	560362.99	4811049.28	2.50	0	E	A	77.2	12.7	0.0	0.0	0.0	65.6	2.1	-2.0	0.0	0.0	4.8	0.0	0.0	19.4
258	560378.88	4811039.83	2.50	0	D	A	82.0	12.7	0.0	0.0	0.0	65.5	2.1	-2.1	0.0	0.0	4.8	0.0	0.0	24.4
258	560378.88	4811039.83	2.50	0	N	A	77.2	12.7	0.0	0.0	0.0	65.5	2.1	-2.1	0.0	0.0	4.8	0.0	0.0	19.6
258	560378.88	4811039.83	2.50	0	E	A	77.2	12.7	0.0	0.0	0.0	65.5	2.1	-2.1	0.0	0.0	4.8	0.0	0.0	19.6
267	560381.36	4811038.36	2.50	2	D	A	82.0	11.0	0.0	0.0	0.0	66.6	2.3	-2.2	0.0	0.0	4.8	0.0	12.3	9.1
267	560381.36	4811038.36	2.50	2	N	A	77.2	11.0	0.0	0.0	0.0	66.6	2.3	-2.2	0.0	0.0	4.8	0.0	12.3	4.4
267	560381.36	4811038.36	2.50	2	E	A	77.2	11.0	0.0	0.0	0.0	66.6	2.3	-2.2	0.0	0.0	4.8	0.0	12.3	4.4
282	560380.58	4811038.83	2.50	2	D	A	82.0	9.4	0.0	0.0	0.0	67.4	2.5	-2.3	0.0	0.0	4.8	0.0	34.3	-15.4
282	560380.58	4811038.83	2.50	2	N	A	77.2	9.4	0.0	0.0	0.0	67.4	2.5	-2.3	0.0	0.0	4.8	0.0	34.3	-20.2
282	560380.58	4811038.83	2.50	2	E	A	77.2	9.4	0.0	0.0	0.0	67.4	2.5	-2.3	0.0	0.0	4.8	0.0	34.3	-20.2
284	560380.22	4811009.25	2.50	0	D	A	82.0	14.0	0.0	0.0	0.0	65.0	2.0	-2.1	0.0	0.0	5.6	0.0	0.0	25.5
284	560380.22	4811009.25	2.50	0	N	A	77.2	14.0	0.0	0.0	0.0	65.0	2.0	-2.1	0.0	0.0	5.6	0.0	0.0	20.7
284	560380.22	4811009.25	2.50	0	E	A	77.2	14.0	0.0	0.0	0.0	65.0	2.0	-2.1	0.0	0.0	5.6	0.0	0.0	20.7
293	560374.98	4811005.22	2.50	2	D	A	82.0	10.8	0.0	0.0	0.0	66.1	2.2	-2.1	0.0	0.0	4.8	0.0	12.1	9.7
293	560374.98	4811005.22	2.50	2	N	A	77.2	10.8	0.0	0.0	0.0	66.1	2.2	-2.1	0.0	0.0	4.8	0.0	12.1	4.9
293	560374.98	4811005.22	2.50	2	E	A	77.2	10.8	0.0	0.0	0.0	66.1	2.2	-2.1	0.0	0.0	4.8	0.0	12.1	4.9
312	560374.00	4811004.47	2.50	2	D	A	82.0	9.8	0.0	0.0	0.0	67.0	2.4	-2.2	0.0	0.0	5.2	0.0	34.8	-15.3
312	560374.00	4811004.47	2.50	2	N	A	77.2	9.8	0.0	0.0	0.0	67.0	2.4	-2.2	0.0	0.0	5.2	0.0	34.8	-20.1
312	560374.00	4811004.47	2.50	2	E	A	77.2	9.8	0.0	0.0	0.0	67.0	2.4	-2.2	0.0	0.0	5.2	0.0	34.8	-20.1
397	560388.56	4811026.04	2.50	0	D	A	82.0	12.7	0.0	0.0	0.0	65.3	2.0	-2.2	0.0	0.0	5.0	0.0	0.0	24.5
397	560388.56	4811026.04	2.50	0	N	A	77.2	12.7	0.0	0.0	0.0	65.3	2.0	-2.2	0.0	0.0	5.0	0.0	0.0	19.7
397	560388.56	4811026.04	2.50	0	E	A	77.2	12.7	0.0	0.0	0.0	65.3	2.0	-2.2	0.0	0.0	5.0	0.0	0.0	19.7
405	560336.60	4810977.39	2.50	0	D	A	82.0	11.1	0.0	0.0	0.0	64.3	1.9	-1.5	0.0	0.0	4.8	0.0	0.0	23.6
405	560336.60	4810977.39	2.50	0	N	A	77.2	11.1	0.0	0.0	0.0	64.3	1.9	-1.5	0.0	0.0	4.8	0.0	0.0	18.9
405	560336.60	4810977.39	2.50	0	E	A	77.2	11.1	0.0	0.0	0.0	64.3	1.9	-1.5	0.0	0.0	4.8	0.0	0.0	18.9
408	560336.60	4810977.39	2.50	1	D	A	82.0	11.1	0.0	0.0	0.0	64.8	2.0	-1.6	0.0	0.0	4.8	0.0	1.4	21.7
408	560336.60	4810977.39	2.50	1	N	A	77.2	11.1	0.0	0.0	0.0	64.8	2.0	-1.6	0.0	0.0	4.8	0.0	1.4	16.9
408	560336.60	4810977.39	2.50	1	E	A	77.2	11.1	0.0	0.0	0.0	64.8	2.0	-1.6	0.0	0.0	4.8	0.0	1.4	16.9
413	560338.27	4810978.30	2.50	1	D	A	82.0	9.6	0.0	0.0	0.0	64.5	1.9	-1.9	0.0	0.0	5.2	0.0	4.9	16.9
413	560338.27	4810978.30	2.50	1	N	A	77.2	9.6	0.0	0.0	0.0	64.5	1.9	-1.9	0.0	0.0	5.2	0.0	4.9	12.1
413	560338.27	4810978.30	2.50	1	E	A	77.2	9.6	0.0	0.0	0.0	64.5	1.9	-1.9	0.0	0.0	5.2	0.0	4.9	12.1
420	560334.52	4810976.26	2.50	2	D	A	82.0	9.1	0.0	0.0	0.0	65.0	2.0	-2.0	0.0	0.0	4.8	0.0	11.7	9.6
420	560334.52	4810976.26	2.50	2	N	A	77.2	9.1	0.0	0.0	0.0	65.0	2.0	-2.0	0.0	0.0	4.8	0.0	11.7	4.8
420	560334.52	4810976.26	2.50	2	E	A	77.2	9.1	0.0	0.0	0.0	65.0	2.0	-2.0	0.0	0.0	4.8	0.0	11.7	4.8

# **Appendix E**

## **Manufacturer Sound Level Specifications**

# 973D

Track Loader

GHD:Source S01

CATERPILLAR®



## Engine

Engine Model	Cat® C9 ACERT™	
Net Power – SAE J1349	196 kW	263 hp

## Weights

Operating Weight	28 058 kg	61,857 lb
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- Operating Weight: Includes coolant, lubricants, 100% fuel tank, General Purpose Bucket with long bolt-on teeth and segments and 75 kg/165 lb operator.

## Buckets

Capacity – General Purpose	3.21 m <sup>3</sup>	4.2 yd <sup>3</sup>
Capacity – Multi-Purpose	3.05 m <sup>3</sup>	3.92 yd <sup>3</sup>

- Bucket capacities are with long bolt-on teeth and segments.

## Ripper Specifications

Type	Parallelogram	
Number of pockets	3	
Overall Width/Beam	2200 mm	86.6 in
Shank cross section	74 × 175 mm 2.9 × 6.9 in	
Ground Clearance	888 mm	34.96 in
Penetration	397 mm	15.6 in
Ripping Width	1840 mm	72.4 in
Penetration Force at ground level	100 kN	22,500 lb
Cylinders – Bore	130 mm	5.1 in
Cylinders – Stroke	236 mm	9.3 in
Addition to Machine Length due to Ripper (in Transportation Position)	586 mm	23.1 in
Ramp Angle	28.5 Degrees	
Ripper weight (with 3 shanks)	1700 kg	3,747.8 lb

## Standards

ROPS/FOPS	ROPS/FOPS
Brakes	Brakes
Cab	Cab

- ROPS (Rollover Protective Structure) offered by Caterpillar for the machine meets ROPS criteria SAE J1040 MAY94, ISO 3471-1994.
- FOPS (Falling Object Protective Structure) offered by Caterpillar for the machine meets FOPS criteria SAE J/ISO3449 APR98 level II, ISO 3449-1992 Level II.
- Brakes meet the standard ISO 10265-2008.
- The operator sound exposure Leq (equivalent sound pressure level) measured according to the work cycle procedures specified in ANSI/SAE J1166 OCT 98 is 83 dB(A), for cab offered by Caterpillar, when properly installed and maintained and tested with the doors and windows closed.
- Hearing protection is recommended when operating with open operator station and cab (when not properly maintained or doors/windows open) for extended periods or in noisy environment.
- The exterior sound pressure level for the standard machine measured at a distance of 15 meters (49.2 ft) according to the test procedures specified in SAE J88 APR95, mid-gear-moving operation, is 85 dB(A).
- The labeled sound power level is 112 dB(A) measured according to the test procedure and conditions specified in 2000/14/EC.
- The operator sound exposure Leq (equivalent sound pressure level) measured according to the work cycle procedures specified in ISO 6396:2008 is 77 dB(A) and in ISO 6394:2008 is 74 dB(A), for cab offered by Caterpillar, when properly installed and maintained and tested with the doors and windows closed.

← S01

## DX225LC-5 Crawler Excavator

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### Specifications for DX225LC-5 Crawler Excavator

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#### Engine

RATED FLYWHEEL POWER (GROSS)	166.3 hp @ 1,800 rpm
RATED HORSE POWER (NET)	162.1 hp @ 1,800 rpm
MAX. TORQUE (NET)	557 lbf-ft @ 1,400 rpm
ENGINE EMISSIONS TIER (EPA)	T4

---

#### Hydraulic System

MAIN PUMP: DISPLACEMENT	7 in <sup>3</sup> /rev
CONTROL VALVE: RELIEF VALVE PRESSURE (NORMAL)	4,694 psi
CONTROL VALVE: RELIEF VALVE PRESSURE (BOOST)	4,978 psi
MAIN PUMP: MAX. FLOW RATE (EACH)	54.55 gal/min
MAIN PUMP: MAIN RELIEF PRESSURE	--

---

#### Undercarriage

UPPER ROLLERS: QUANTITY PER SIDE	2
LOWER ROLLERS: QUANTITY PER SIDE	8
TRACK LENGTH	14' 7"
TRACK LINK: TRACK GAUGE	7' 10"

---

#### Swing Mechanism

SWING PERFORMANCE: MAX SWING TORQUE	60757 lbf-ft
SWING PERFORMANCE: MAX SWING SPEED (AT EFFICIENCY)	10.9 rpm

ENGINE COOLANT	10.14 gal
ENGINE OIL	7.13 gal
HYDRAULIC TANK	51.51 gal

---

## Environment

NOISE LEVEL: GUARANTEED SOUND POWER LEVEL	103 dBA
NOISE LEVEL: OPERATOR	70 dBA

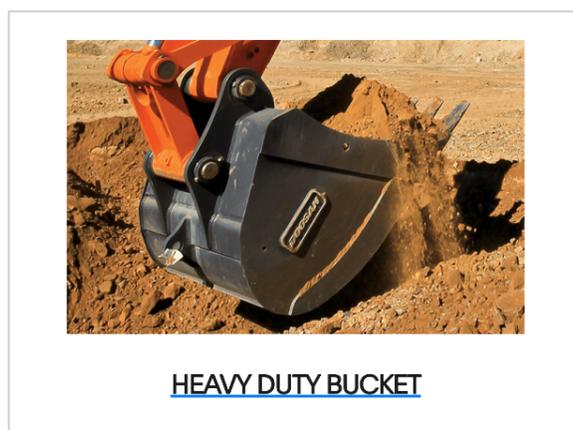
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← **S04**

## Lift Capacity

LIFTING CAPACITY OVER FRONT @ HORIZONTAL DISTANCE - 10 FT ABOVE GROUND	14,660 lb @ 20 ft
LIFTING CAPACITY OVER FRONT @ HORIZONTAL DISTANCE - GROUND LEVEL	16,130 lb @ 20 ft
LIFTING CAPACITY OVER FRONT @ HORIZONTAL DISTANCE - 10 FT BELOW GROUND	15,810 lb @ 20 ft

## Attachments



[View All](#)



# **Attachment 2**

**ENVIRONMENTAL COMPLIANCE APPROVAL**

NUMBER A-500-3223236868

Version: 1.0

Issue Date: October 11, 2024

*Pursuant to section 20.3 of the Environmental Protection Act, Revised Statutes of Ontario (R.S.O.) 1990, c. E. 19 and subject to all other applicable Acts or regulations this Environmental Compliance Approval is issued to:*

2374868 ONTARIO INC.

6678 WELLINGTON RD 34 ROAD  
CAMBRIDGE ONTARIO  
N3C 2V4

*For the following site:*

6678 Wellington Road 34

Town of Puslinch, County of Wellington

*You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:*

- One (1) Diesel-fired engine, rated at 50 kilowatts and serving the screening operations;
- Fugitive emissions resulting from the delivery, storage, transfer and stockpiling of materials associated with waste processing operations;

all in accordance with the Application for Approval (Air & Noise) submitted by 2374868 Ontario Inc., dated April 13, 2023 and signed by Eric Nafziger - Site Manager; the supporting information, including the Emission Summary and Dispersion Modelling Report, submitted by GHD Limited, dated December 10, 2021 and signed by Erik Martinez; the Acoustic Assessment Report submitted by GHD Limited, dated April 3, 2024 and signed by Patrick Chen; the additional information provided by Patrick Chen of GHD Limited in the emails dated April 3, 2024, April 12, 2024, May 27, 2024 and July 15, 2024; and, all other documentation associated with the Application.

## **DEFINITIONS**

*For the purpose of this environmental compliance approval, the following definitions apply:*

1. "Acoustic Assessment Report" means the report, prepared in accordance with Publication NPC-233 submitted in support of the application, that documents all sources of noise emissions and Noise Control Measures present at the Facility. "Acoustic Assessment Report" also means the Acoustic Assessment Report prepared by GHD Limited, dated April 3, 2024 and signed by Patrick Chen;
2. "Acoustic Audit" means an investigative procedure consisting of measurements and/or acoustic modelling of all sources of noise emissions due to the operation of the Facility, assessed to determine compliance with the performance limits for the Facility regarding noise emissions, completed in accordance with the procedures set in Publication NPC-103 and reported in accordance with Publication NPC-233;
3. "Acoustic Audit Report" means a report presenting the results of an Acoustic Audit, prepared in accordance with

Publication NPC-233;

4. "Acoustical Consultant" means a person currently active in the field of environmental acoustics and noise/vibration control, who is familiar with Ministry noise guidelines and procedures and has a combination of formal university education, training and experience necessary to assess noise emissions from a Facility;
5. "Approval" means this Environmental Compliance Approval, including the application and supporting documentation listed above;
6. "Best Management Practices Plan" means a document or a set of documents which describe measures to minimize dust emissions from the Facility and/or Equipment;
7. "Company" means 2374868 Ontario Inc. that is responsible for the construction or operation of the Facility and includes any successors and assigns in accordance with section 19 of the EPA;
8. "Director" means a person appointed for the purpose of section 20.3 of the EPA by the Minister pursuant to section 5 of the EPA;
9. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located;
10. "EPA" means the *Environmental Protection Act*, R.S.O. 1990, c.E.19;
11. "Equipment" means the equipment and processes described in the Company's application, this Approval and in the supporting documentation submitted with the application, to the extent approved by this Approval;
12. "Facility" means the entire operation located on the property where the Equipment is located;
13. "Independent Acoustical Consultant" means an Acoustical Consultant who is not representing the Company and was not involved in preparing the Acoustic Assessment Report or the design/implementation of Noise Control Measures for the Facility and/or Equipment. The Independent Acoustical Consultant shall not be retained by the Acoustical Consultant involved in the noise impact assessment or the design/implementation of Noise Control Measures for the Facility and/or Equipment;
14. "Manual" means a document or a set of documents that provide written instructions to staff of the Company;
15. "Minister" means the Minister of the Environment, Conservation and Parks or such other member of the Executive Council as may be assigned the administration of the EPA under the Executive Council Act;
16. "Ministry" means the ministry of the government of Ontario responsible for the EPA and includes all officials, employees or other persons acting on its behalf;
17. "Noise Control Measures" means measures to reduce the noise emissions from the Facility and/or Equipment including, but not limited to, silencers, acoustic louvers, enclosures, absorptive treatment, plenums and barriers;
18. "Point of Reception" means Point of Reception as defined by Publication NPC-300;
19. "Publication NPC-103" means the Ministry Publication NPC-103 of the Model Municipal Noise Control By-Law, Final Report, August 1978, published by the Ministry as amended;
20. "Publication NPC-233" means the Ministry Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October, 1995, as amended;
21. "Publication NPC-300" means the Ministry Publication NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources - Approval and Planning, Publication NPC-300", August 2013, as amended;
22. "Technical Bulletin: Management Approaches for Industrial Fugitive Dust Sources" means the Ministry publication "Technical Bulletin: management approaches for industrial fugitive dust sources", March 8, 2017, as amended;
23. "Truck(s)" means heavy truck(s).

# TERMS AND CONDITIONS

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*You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:*

## 1. OPERATION AND MAINTENANCE

1. The Company shall ensure that the Equipment is properly operated and maintained at all times. The Company shall:
  - a. prepare, not later than three (3) months after the date of this Approval, and update, as necessary, a Manual outlining the operating procedures and a maintenance program for the Equipment, including:
    - i. routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the Equipment suppliers;
    - ii. emergency procedures, including spill clean-up procedures;
    - iii. procedures for any record keeping activities relating to operation and maintenance of the Equipment; and,
    - iv. all appropriate measures to minimize noise and odorous emissions from all potential sources;
  - b. implement the recommendations of the Manual.

## 2. FUGITIVE DUST CONTROL

1. The Company shall develop in consultation with the District Manager, a Best Management Practices Plan for the control of fugitive dust emissions. This Best Management Practices Plan shall:
  - a. at minimum, be prepared in accordance with Ministry Technical Bulletin: Management Approaches for Industrial Fugitive Dust Sources; and
  - b. include a list of all Ministry comments received, if any, on the development of the Best Management Practices Plan, and a description of how each Ministry comment was addressed in the Best Management Practices Plan.
2. The Company shall submit the Best Management Practices Plan to the District Manager not later than three (3) months after the date of this Approval or as otherwise indicated by the District Manager.
3. Upon acceptance of the Best Management Practices Plan by the District Manager, the Company shall immediately implement the Best Management Practices Plan for the control of fugitive dust emissions to provide effective dust suppression measures to any potential sources of fugitive dust emissions resulting from the operation of the Facility.
4. The Company shall update the Best Management Practices Plan as necessary or at the direction of the District Manager.

## 3. RECORD RETENTION

1. The Company shall retain, for a minimum of two (2) years from the date of their creation, all records and information related to or resulting from the recording activities required by this Approval, and make these records available for review by staff of the Ministry upon request. The Company shall retain:
  - a. all records on the maintenance, repair and inspection of the Equipment; and
  - b. all records of any environmental complaints, including:
    - i. a description, time and date of each incident to which the complaint relates;
    - ii. wind direction at the time of the incident to which the complaint relates; and

- iii. a description of the measures taken to address the cause of the incident to which the complaint relates and to prevent a similar occurrence in the future.

#### **4. NOTIFICATION OF COMPLAINTS**

1. The Company shall notify the District Manager, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:
  - a. a description of the nature of the complaint; and
  - b. the time and date of the incident to which the complaint relates.

#### **5. NOISE**

1. The Company shall:
  - a. at all times, ensure that the noise emissions from the Facility comply with the limits set out in Ministry Publication NPC-300;
  - b. maintain the locations of the Equipment, buildings, 3 metre high embankment, and Truck routes as depicted in Figure 1 of the Acoustic Assessment Report at all times that the Facility is operating;
  - c. ensure that the sound emission levels of the Equipment shall not exceed the values specified in Table 1 of the Acoustic Assessment Report;
  - d. limit Truck arrivals and departures during the day-time hours of 7 a.m. to 7 p.m. in accordance with the following:
    - i. a maximum of six (6) heavy truck movements per sixty (60) minute period on truck route "TR1" as depicted in Figure 1 of the Acoustic Assessment Report;
    - ii. a maximum of five (5) heavy truck movements per sixty (60) minute period on truck route "TR2" as depicted in Figure 1 of the Acoustic Assessment Report;
  - e. limit Truck arrivals and departures during the evening-time hours of 7 p.m. to 11 p.m. in accordance with the following:
    - i. a maximum of two (2) heavy truck movements per sixty (60) minute period on truck route "TR1" as depicted in Figure 1 of the Acoustic Assessment Report;
    - ii. a maximum of five (5) heavy truck movements per sixty (60) minute period on truck route "TR2" as depicted in Figure 1 of the Acoustic Assessment Report;
  - f. limit Truck arrivals and departures during the night-time hours of 11 p.m. to 7 a.m. in accordance with the following:
    - i. a maximum of two (2) heavy truck movements per sixty (60) minute period on truck route "TR1" as depicted in Figure 1 of the Acoustic Assessment Report; and
    - ii. a maximum of five (5) heavy truck movements per sixty (60) minute period on truck route "TR2" as depicted in Figure 1 of the Acoustic Assessment Report.
2. The Company shall restrict the operation of the screening Equipment to the day-time hours of 7 a.m. to 7 p.m.

#### **6. CHANGE OF OWNERSHIP**

1. The Company shall notify the Director in writing, and forward a copy of the notification to the District Manager, within thirty (30) days of the occurrence of any of the following changes to the Facility operations:
  - a. the ownership of the Facility;
  - b. the operator of the Facility;

- c. the address of the Company;
- d. the partners, where the Company is or at any time becomes a partnership and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c. B.17, shall be included in the notification; or
- e. the name of the corporation where the Company is or at any time becomes a corporation, other than a municipal corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C.39, shall be included in the notification.

2. In the event of any change in ownership of the Facility, the Company shall notify the successor of the existence of this Approval and provide the successor with a copy of this Approval, and the Company shall provide a copy of the notification to the District Manager and the Director.

## 7. ACOUSTIC AUDIT

1. The Company shall carry out Acoustic Audit measurements on the actual noise emissions due to the operation of the Facility. The Company:

- a. shall carry out Acoustic Audit measurements in accordance with the procedures in Publication NPC-103 at a time when foliage attenuation is at a minimum between the Facility and the Points of Reception;
- b. shall submit an Acoustic Audit Report on the results of the Acoustic Audit, prepared by an Independent Acoustical Consultant, in accordance with the requirements of Publication NPC-233, to the District Manager and the Director, not later than six (6) months after the commencement of operation of the Facility. The Acoustic Audit shall include verification of the sound emission levels of the Equipment and the sound level limits of the Points of Reception; and
- c. shall submit, in conjunction with an Acoustic Audit Report, an Environmental Compliance Approval application requesting an amendment to the Approval to rescind the requirement for an Acoustic Audit Report as per Condition 7.1.b of this Approval.

2. The Director:

- a. may not accept the results of the Acoustic Audit if the requirements of Publication NPC-233 were not followed; and
- b. may require the Company to repeat the Acoustic Audit if the results of the Acoustic Audit are found unacceptable to the Director.

## REASONS

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*The reasons for the imposition of these terms and conditions are as follows:*

1. Condition Nos. 1 and 2 are included to emphasize that the Equipment must be maintained and operated according to a procedure that will result in compliance with the EPA, the Regulations and this Approval.
2. Condition No. 3 is included to require the Company to keep records and to provide information to staff of the Ministry so that compliance with the EPA, the Regulations and this Approval can be verified.
3. Condition No. 4 is included to require the Company to notify staff of the Ministry so as to assist the Ministry with the review of the site's compliance.
4. Condition No. 5.1 is included to provide the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the Facility.
5. Condition No. 5.2 is included to ensure that operation of the screening Equipment is not extended beyond the stated hours to prevent an adverse effect resulting from the operation of the Equipment.
6. Condition No. 6 is included to require the Company to notify/report to the Ministry so that compliance with the EPA, the

regulations and this Approval can be verified.

7. Condition No. 7 is included to require the Company to gather accurate information and submit an Acoustic Audit Report in accordance with procedures set in the Ministry's noise guidelines, so that the environmental impact and subsequent compliance with this Approval can be verified.

## APPEAL PROVISIONS

---

In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me and the Ontario Land Tribunal, within 15 days after the service of this notice, require a hearing by the Tribunal. You must also provide notice to, the Minister of the Environment, Conservation and Parks in accordance with Section 47 of the *Environmental Bill of Rights, 1993* who will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

- I. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- II. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

- I. The name of the appellant;
- II. The address of the appellant;
- III. The environmental compliance approval number;
- IV. The date of the environmental compliance approval;
- V. The name of the Director, and;
- VI. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar* Ontario Land Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5 <a href="mailto:OLT.Registrar@ontario.ca">OLT.Registrar@ontario.ca</a>	and	The Minister of the Environment, Conservation and Parks 777 Bay Street, 5th Floor Toronto, Ontario M7A 2J3	and	The Director appointed for the purposes of Part II.1 of the <i>Environmental Protection Act</i> Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5
--	-----	--	-----	---

**\* Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or [www.olt.gov.on.ca](http://www.olt.gov.on.ca)**

This instrument is subject to Section 38 of the *Environmental Bill of Rights, 1993*, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at [ero.ontario.ca](http://ero.ontario.ca), you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

Dated at Toronto this 11th day of October, 2024



Nancy Orpana

Director

appointed for the purposes of Part II.1 of the Environmental Protection Act

c: Eric Nafziger

Mike Masschaele, GHD Limited

Erik Martinez, GHD Limited

# **Attachment 3**



# **Acoustic Assessment Report**

**6678 Wellington Road 34  
Cambridge, Ontario**

2374868 Ontario Inc.

03 April 2024

**Company Name**

2374868 Ontario Inc.

**Company Address**

Unit Number	Street Number	Street Name	PO Box
	6678	Wellington Road 34	
City/Town		Province	Postal Code
Cambridge		Ontario	N6C 1K7

**Location of Facility**

6678 Wellington Road 34, Cambridge, Ontario

The attached Acoustic Assessment Report was prepared in accordance with the guidance in the ministry document "Information to be Submitted for Approval of Stationary Sources of Sound" (NPC-233) dated October 1995 and the minimum required information identified in the check-list on the reverse of this sheet has been submitted.

**Company Contact**

Company Contact

Last Name	First Name	Middle Initial
Nafziger	Eric	J
Title		Telephone Number
Manager		519-658-5023
Signature		Date (yyyy/mm/dd)
		2021/01/06

**Technical Contact**

Technical Contact

Patrick Chen

Last Name	First Name	Middle Initial
Chen	Patrick	
Representing		Telephone Number
GHD Limited		519 340-4259
Signature		Date (yyyy/mm/dd)
		2023/04/13

	Required Information	Submitted	Explanation/Reference
<b>1.0</b>	<b>Introduction (Project Background and Overview)</b>	<input checked="" type="checkbox"/> Yes	<a href="#">Executive Summary</a>
<b>2.0</b>	<b>Facility Description</b>		
	2.1 Operating hours of Facility and significant Noise Sources	<input checked="" type="checkbox"/> Yes	<a href="#">Section 1</a>
	2.2 Site Plan identifying all significant Noise Sources	<input checked="" type="checkbox"/> Yes	<a href="#">Figure 1</a>
<b>3.0</b>	<b>Noise Source Summary</b>		
	3.1 Noise Source Summary Table	<input checked="" type="checkbox"/> Yes	<a href="#">Table 1</a>
	3.2 Source noise emissions specifications	<input checked="" type="checkbox"/> Yes	<a href="#">Table 1</a>
	3.3 Source power/capacity ratings	<input checked="" type="checkbox"/> Yes	<a href="#">Table 1</a>
	3.4 Noise control equipment description and acoustical specifications	<input type="checkbox"/> Yes	N/A
<b>4.0</b>	<b>Point of Reception Noise Impact Calculations</b>		
	4.1 Point of Reception Noise Impact Table	<input checked="" type="checkbox"/> Yes	<a href="#">Table 2</a>
	4.2 Point(s) of Reception (POR) list and description	<input checked="" type="checkbox"/> Yes	<a href="#">Section 3</a>
	4.3 Land-use Zoning Plan	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix A</a>
	4.4 Scaled Area Location Plan	<input checked="" type="checkbox"/> Yes	<a href="#">Figure 1</a>
	4.5 Procedure used to assess noise impacts at each POR	<input checked="" type="checkbox"/> Yes	<a href="#">Section 4</a>
	4.6 List of parameters/assumptions used in calculations	<input checked="" type="checkbox"/> Yes	<a href="#">Section 4, Section 6</a>
<b>5.0</b>	<b>Acoustic Assessment Summary</b>		
	5.1 Acoustic Assessment Summary Table	<input checked="" type="checkbox"/> Yes	<a href="#">Table 3</a>
	5.2 Rationale for selecting applicable noise guideline limits	<input checked="" type="checkbox"/> Yes	<a href="#">Section 5</a>
	5.3 Predictable Worst Case Impacts Operating Scenario	<input checked="" type="checkbox"/> Yes	<a href="#">Section 6, Appendix D</a>
<b>6.0</b>	<b>Conclusions</b>		
	6.1 Statement of compliance with the selected noise performance limits	<input checked="" type="checkbox"/> Yes	<a href="#">Section 7</a>
<b>7.0</b>	<b>Appendices (Provide details such as)</b>		
	Listing of Insignificant Noise Sources	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix B</a>
	Manufacturer's Noise Specifications	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix E</a>
	Calculations	<input checked="" type="checkbox"/> Yes	<a href="#">Appendix D</a>
	Instrumentation	<input type="checkbox"/> Yes	N/A
	Meteorology during Sound Level Measurements	<input type="checkbox"/> Yes	N/A
	Raw Data from Measurements	<input type="checkbox"/> Yes	N/A
	Drawings (Facility / Equipment)	<input checked="" type="checkbox"/> Yes	<a href="#">Figure 1</a>

<b>Project name</b>		Badger 2374868 Ont Inc-Permitting S					
<b>Document title</b>		Acoustic Assessment Report   6678 Wellington Road 34					
<b>Project number</b>		11210029-RPT-10					
<b>File name</b>		11210029-RPT-10-Acoustic Assessment Report					
<b>Status Code</b>	<b>Revision</b>	<b>Author</b>	<b>Reviewer</b>		<b>Approved for issue</b>		
			<b>Name</b>	<b>Signature</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
S4	FINAL	Patrick Chen	Mike Masschaele		Mike Masschaele		Apr.3/24

**GHD**

455 Phillip Street, Unit 100A

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Appendix C	Noise Specification and Worst-Case Simultaneous Operations Summary
Appendix D	CadnaA Sample Calculation for POR1
Appendix E	Manufacturer Sound Level Specifications

# 1. Introduction

GHD Limited (GHD) has prepared an Acoustic Assessment Report Update (AAR) for the 2374868 Ontario Inc. facility (Facility) located at 6678 Wellington Road 34 in the Cambridge, Ontario. This AAR has been prepared to include all significant sources of noise emissions at the Facility and to demonstrate compliance at all offsite noise sensitive locations. The North American Industry Classification System (NAICS) Code that applies to this Facility is 562210 – Waste treatment and disposal.

This AAR has been prepared to support an application by 2374868 Ontario Inc., for an application for a Ministry of the Environment Conservation and Parks (MECP) Environmental Compliance Approval (ECA) (Air & Noise).

The Facility typically operates between 7 AM and 6 PM, Monday through Friday. However, additional work outside of these hours is occasionally performed.

The AAR presented herein provides an evaluation of the potential noise impacts at the sensitive receptors located nearest to the Facility. The AAR was prepared consistent with the following MECP guidance:

- NPC-103, "Procedures", August 1978
- NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October 1995
- "Basic Comprehensive Certificates of Approval (Air), User Guide, Appendix A - Supporting Information for an Acoustic Assessment Report or Vibration Assessment Report Required by a Basic Comprehensive CofA prepared by the Environmental Assessment and Approvals Branch, Version 2.1, March 2011"
- NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources –Approval and Planning", August 2013

The Facility is located in an area zoned as Extractive and Agricultural. The land uses immediately surrounding the Facility is also Extractive and Agricultural. A zoning map and zoning definitions are provided in Appendix A. A site plan is provided on Figure 1.

The Facility is located in a mixed Acoustical Class 2 and 3 area. Class 2 areas are defined by NPC 300 as an area where the background sound level during the day is dominated by the activities of people and by natural sounds during the night. Class 3 areas are defined by NPC 300 as an area where the background sound level is dominated by natural sounds having little or no road traffic.

## 1.1 Scope and Limitations

*This report: has been prepared by GHD for 2374868 Ontario Inc. and may only be used and relied on by 2374868 Ontario Inc. for the purpose agreed between GHD and 2374868 Ontario Inc.*

*GHD otherwise disclaims responsibility to any person other than 2374868 Ontario Inc. arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.*

*The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.*

*The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.*

*The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.*

## 2. Noise Source Summary

This AAR focuses on the sound emissions from the significant noise sources identified at the Facility with the potential to adversely impact the sensitive receptors and are inclusive of the noise emissions from the various heavy machinery onsite (cranes, loaders, and excavator-style equipment). The significant noise sources are identified in the Noise Source Summary Table 1 and the locations are identified on Figure 1.

It has been conservatively assumed that the onsite loaders and excavator equipment can operate any time of day. Screening operations are daytime only. Truck traffic is expected to have a maximum of up to 6 trucks per hour during the daytime hours and up to 2 trucks per hour in the evening and nighttime hours. Onsite vehicle activities including heavy trucks arriving and departing from site and traffic from Capitol Paving are summarized below:

Type of Vehicle	Day 7a.m.- 7 p.m. (Trips/hour)	Evening 7p.m.- 11 p.m. (Trips /hour)	Night 11 p.m.- 7 a.m. (Trips /hour)
Front End Loader Movements (S1)	15	5	5
Heavy Vehicle Truck Route (TR1)	6	2	2
Capital Paving Truck Traffic (TR2)	5	5	5

There are no sources of impulse noise or vibration at the Facility<sup>1</sup>.

Comprehensive and detailed information on the hydrovac operations, Site and adjacent Capital Paving (Capital) traffic are provided in the Design and Operations (D&O) Report and Traffic Study submitted with the Zoning By-Law Amendment application in December 2021. The adjacent aggregate extractive operation business is not part of the waste processing operation. Though the properties share an entrance, they are independent sites and owned by separate companies. GHD has conservatively added the Capital traffic entering and exiting from the shared entrance. It is also noted that the land south of the hydrovac operations is not part of the Facility's operations.

The significant equipment sources are all either trucking related activities or outdoor equipment located beside the within the Site Boundary. The Site does not have any significant interior noise sources resulting in breakout noise anywhere from the building. The existing building at the Site is made of standard industrial construction materials. The other noise sources at the Facility have not been included since they are considered insignificant contributors to the overall Facility noise level at the sensitive receptors. A summary of insignificant noise sources is provided in Table B.1 of Appendix B.

## 3. Point of Reception Summary

The identification of appropriate sensitive point(s)-of-reception is necessary to conduct the AAR for the Facility. A "point-of-reception" is any point on the premises of a person where sound, originating from other than those premises, is received. The point-of-reception may be located on permanent or seasonal residences, nursing/retirement homes, rental residences, hospitals, campgrounds, schools, or places of worship.

The objective of this AAR is to determine the predictable worst-case 1-hour equivalent sound level (1-hour Leq) at the worst-case point(s)-of-reception. The worst-case point(s)-of-reception are defined as the sensitive receptors with the greatest potential exposure to the Facility noise sources due to proximity and direct line-of-sight exposure.

---

<sup>1</sup> Assessment of vibration if applicable is assessed according to NPC-207.

The worst-case sensitive points of reception (POR) are:

- POR1 – nearest façade of a two-storey residence on Sideroad 10 N approximately 900 meters (m) east of the site (4.5 m Above Ground (AG))
- POR2 – nearest façade of a two-storey residence on Highway 34 approximately 630 meters (m) east of the site (4.5 m Above Ground (AG))
- POR3 - outdoor point of reception associated with a two-storey residence on Highway 34 approximately 70 m south of the site (1.5 m AG) evaluated to be the worst-case in comparison to the residence façade
- POR4 – nearest façade of a two-storey residence on Highway 34 approximately 60 meters (m) south of the site (4.5 m Above Ground (AG))
- POR5 – nearest façade of a two-storey residence on Highway 34 approximately 60 meters (m) southwest of the site (4.5 m Above Ground (AG))
- POR6 – nearest façade of a two-storey residence on Highway 34 approximately 150 meters (m) west of the site (4.5 m Above Ground (AG))
- POR7 – nearest façade of a two-storey residence on Concession Road approximately 740 meters (m) northwest of the site (4.5 m Above Ground (AG))
- POR8 – nearest façade of a two-storey residence on Concession Road approximately 1,300 meters (m) north of the site (4.5 m Above Ground (AG))

The location of the worst case PORs are identified on Figure 2.

Vacant lots that would permit a noise sensitive use have been considered in the selection process of worst- case Points of Reception. According to the Township of Puslinch bylaws, the permitted uses for land zoned as Extractive does not allow for residential dwellings or any other land uses that would likely be noise sensitive. Additionally, all agricultural zoned land on the southern part of the Property and properties adjacent to the Property currently already have dwellings. As Township of Puslinch agricultural zoning allows for a maximum of 1 single detached dwelling per lot, no additional dwellings will be built.

In accordance with NPC-300 all PORs locations within 500 m of the Facility were considered including the planes of windows which were assessed for daytime and nighttime noise limits. In addition, the ground level amenity areas, within 30 m of each POR, were also evaluated for daytime noise limits; however, the noise impact at the worst-case and most exposed PORs are presented herein. GHD also evaluated the zoning surrounding the Facility to identify any potential vacant lots that permit a residential build and has included all relevant POR's.

## 4. Sound Level Data

Manufacturer's sound level data for the proposed equipment is provided in Appendix E. This data was supplemented with spectral data from GHD's sound level library. All equipment must meet (or be below) the specified sound levels. The proposed significant noise sources included in this assessment are:

- Front End Loader (S1) – Sound Power Level: 113.2 dBA
- Screening Equipment Motor (S2A) – Sound Power Level: 109.3 dBA
- Screening Operation (S2B) – Sound Power Level: 105.6 dBA
- Excavator (S4) – Sound Power Level: 103.2 dBA
- Truck Route (TR1) – Sound Power Level: 109.5 dBA
- Capitol Paving Truck Route (TR2) – Sound Power Level: 109.5 dBA

All noise sources are outdoor sources.

## 5. Assessment Criteria

Assessment criteria may be determined for a POR based on the MECP's minimum exclusionary sound level limits, as presented in Table B-1 of NPC-300, in comparison to the background sound levels experienced in the area. The "background sound level" is defined as the sound level present in the environment that is produced by noise sources other than those from the Facility, and would include traffic sound levels and sound from neighboring industrial/commercial activity. The higher of the two assessment criteria is selected for purpose of assessment.

### 5.1 Sound Level Limits for Stationary Noise Sources

#### 5.1.1 MECP Standard Limits

NPC-300 defines stationary noise sources as sound from all sources that are normally operated within the property lines of a facility. The noise impact from stationary sources is evaluated based on operations during a predictable worst-case hour. Stationary noise assessment criteria are generally determined based on the MECP's minimum exclusionary sound level limits, as presented in NPC-300, in comparison to the background sound levels experienced in the area.

Limits are provided for two main types of noise sources:

- Non-impulsive, "continuous" noise sources such as ventilation fans, mechanical equipment, and vehicles while moving within the property boundary of an industry. Continuous noise is measured using 1-hour average sound exposures (Leq (1-hr) values), in dBA.
- Impulsive noise, which is a "banging" type noise characterized by rapid sound level rise time and decay. Impulsive noise is measured using a logarithmic mean (average) level (LLM) of the impulses in a one-hour period, in dBAI.

The guideline requires an assessment at, and provides separate guideline limits for:

- Outdoor points of reception (e.g., back yards, communal outdoor amenity areas).
- Façade points of reception such as the plane of windows on the outdoor façade which connect onto noise sensitive spaces, such as living rooms, dens, eat-in kitchens, dining rooms and bedrooms.

#### Acoustical Area Classification

Under the MECP Publication NPC-300 guidelines, noise sensitive receptors are defined using receptor area classifications. The receptor areas are classified as either:

- Class 1 – Urban areas
- Class 2 – Suburban / semi-rural areas
- Class 3 – Rural areas
- Class 4 – Infill areas (Subject to Municipal Planning Approval for New Developments)

Depending on the receptor area classification, different guideline limits apply. Classes 1, 2, and 3 were included in the predecessor guidelines to Publication NPC-300. The Class 4 area is intended to allow for infill and redevelopment, whilst still protecting residences from undue noise.

Table 5.1 below summarizes the MECP's minimum exclusionary sound level limits based on the Acoustical Class of the project area, which are expressed in terms of 1-hour equivalent sound levels (1-hour Leq):

**Table 5.1** MECP Minimum Exclusionary Sound Level Limits for Steady Sound

Time of Day	Class 1 Sound Level Limits (dBA)		Class 2 Sound Level Limits (dBA)		Class 3 Sound Level Limits (dBA)		Class 4 Sound Level Limits (dBA)	
	Plane of Window	Outdoor POR						
07:00 – 19:00 (Day)	50	50	50	50	45	45	60	55
19:00 – 23:00 (Even)	50	50	50	45	40	40	60	55
23:00 – 07:00 (Night)	45	NA	45	NA	40	NA	55	NA

Based on the acoustic environment at the development, it is considered to be in a mixed acoustic Class 2 and 3 area as defined by NPC-300, as the acoustic environment is dominated by human activities (i.e., road traffic) during the day by Highway 34 and natural environment and infrequent human activity for Class 2 and dominated by natural sounds at all hours for a Class 3.

Class 2 and Class 3 noise limits appropriate for this project have been shaded for reference.

**Table 5.2** Applicable Minimum MECP Sound Level Limits or Site Specific Limits for Impulsive or Steady State Sound

POR ID	POR Description	Sound Level Limits (dBA)		
		Day (7am – 7pm)	Evening (7pm – 11pm)	Night (11pm – 7am)
POR1	Nearest façade of a two-storey residence on Sideroad 10 N (4.5 metres above grade [m AG])	50	50	45
POR2	Nearest façade of a two-storey residence on Highway 34 (4.5 m AG)	50	50	45
POR3	Nearest façade of a two-storey residence on Highway 34 (4.5 m AG)	50	50	45
POR4	Nearest façade of a two-storey residence on Highway 34 (4.5 m AG)	50	50	45
POR5	Nearest façade of a two-storey residence on Highway 34 (4.5 m AG)	50	50	45
POR6	Nearest façade of a two-storey residence on Highway 34 (4.5 m AG)	50	50	45
POR7	Nearest façade of a two-storey residence on Concession Road (4.5 m AG)	45	40	40
POR8	Nearest façade of a two-storey residence on Concession Road (4.5 m AG)	45	40	40

The lowest sound levels generally occur at the ground floor level (1.5 metres above grade) and increase with height due to increased line of sight exposure to the roadways. GHD has presented the lowest noise limit relative to the worst-case Facility noise impact based on line-of-sight and exposure to the applicable receptor.

# 6. Impact Assessment

## 6.1 Steady-State Sound Levels

The worst-case assessment of steady-state noise sources at the selected points of reception was based on representative noise data. CadnaA Acoustical Modelling Software (CadnaA), version 2023, was used to model the potential impacts of the significant noise sources. CadnaA calculates sound level emissions based on the ISO 9613-2 standard "Acoustics – Attenuation of Sound during Propagation Outdoors".

A sample calculation for worst-case POR1 is provided in Appendix D.

The worst-case cumulative Facility-wide attenuated sound levels estimated at the receptor(s) included attenuation affects due to geometric divergence, atmospheric attenuation, barriers/berms, ground absorption and directivity, as applicable for all significant noise sources off-site buildings were input as intervening structures.

CadnaA modelling assumptions used in this AAR included:

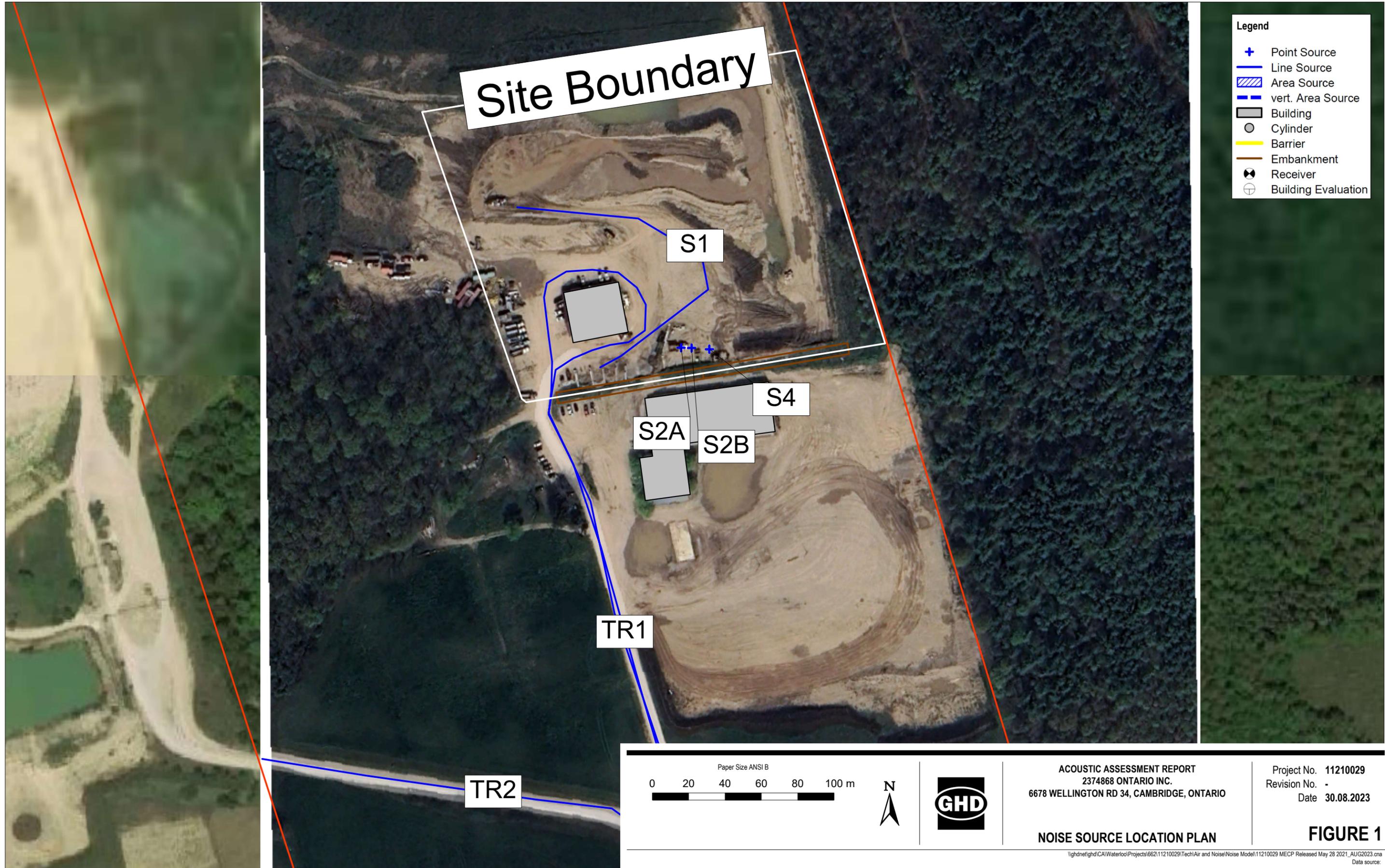
- **Noise Sources:** All sources were modelled using the 1/1 octave band data from source measurements, manufacturer's sound level data, or reference materials.
- **Noise Source Elevation:** The heights of the sources are summarized in Table C.1 of Appendix C.
- **Reflection Order:** A maximum reflection order of 2.0 was used to evaluate indirect noise impact from one reflecting surface.
- **Ground Absorption:** The model was set up with a ground absorption factor of 1 due to the area being primarily grass and crop land. A manual ground absorption area is included with a factor of 0 hard surfaces such as gravel areas, haul roads, and ponds.
- **Foliage:** The surrounding woodlots were modeled as foliage with a height of 8m.
- **Receptor Elevation:** POR receptor heights were modelled appropriately to represent the worst-case elevation.
- **Time-Weighted Adjustment:** Time-weighted adjustments for sources that do not operate continuously are summarized in Table C.1.
- **Terrain:** Flat terrain was assumed in order to be conservative.
- **Tonality:** A +5 dBA adjustment was applied for tonal sources, if applicable.
- **Building Surfaces:** The buildings are modelled as reflective surfaces with 0.21 absorption coefficient.

The steady stated noise impacts at each POR are summarized in Table 2. Compliance with the MECP sound level limits is demonstrated in Table 3 and Figure 3. Compliance with the MECP sound level limits is demonstrated in Table 3.

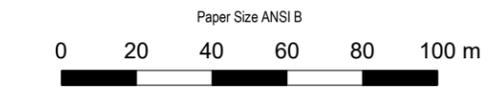
# 7. Conclusions

The unattenuated steady-state estimated at the PORs are below the MECP's minimum exclusionary sound level limits as summarized in Table 3.

GHD recommends that any future proposed equipment sound level specifications be evaluated to ensure that the sound level contribution at each applicable POR will not significantly add to the site wide cumulative noise impacts in order for the Facility to maintain compliance with NPC-300 noise limits.



- Legend**
- + Point Source
  - Line Source
  - ▨ Area Source
  - vert. Area Source
  - Building
  - Cylinder
  - Barrier
  - Embankment
  - ⊗ Receiver
  - ⊕ Building Evaluation



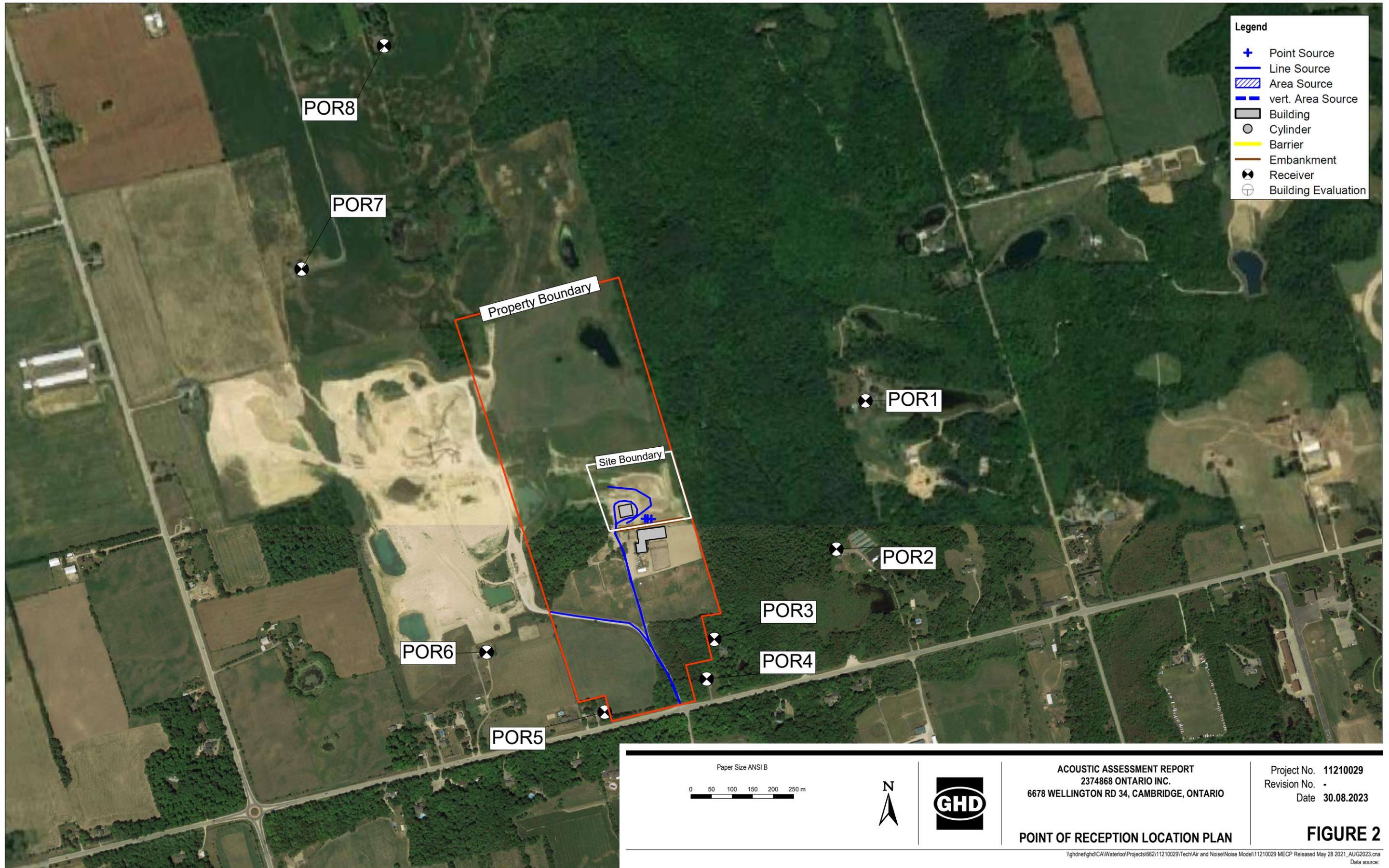
ACOUSTIC ASSESSMENT REPORT  
 2374868 ONTARIO INC.  
 6678 WELLINGTON RD 34, CAMBRIDGE, ONTARIO

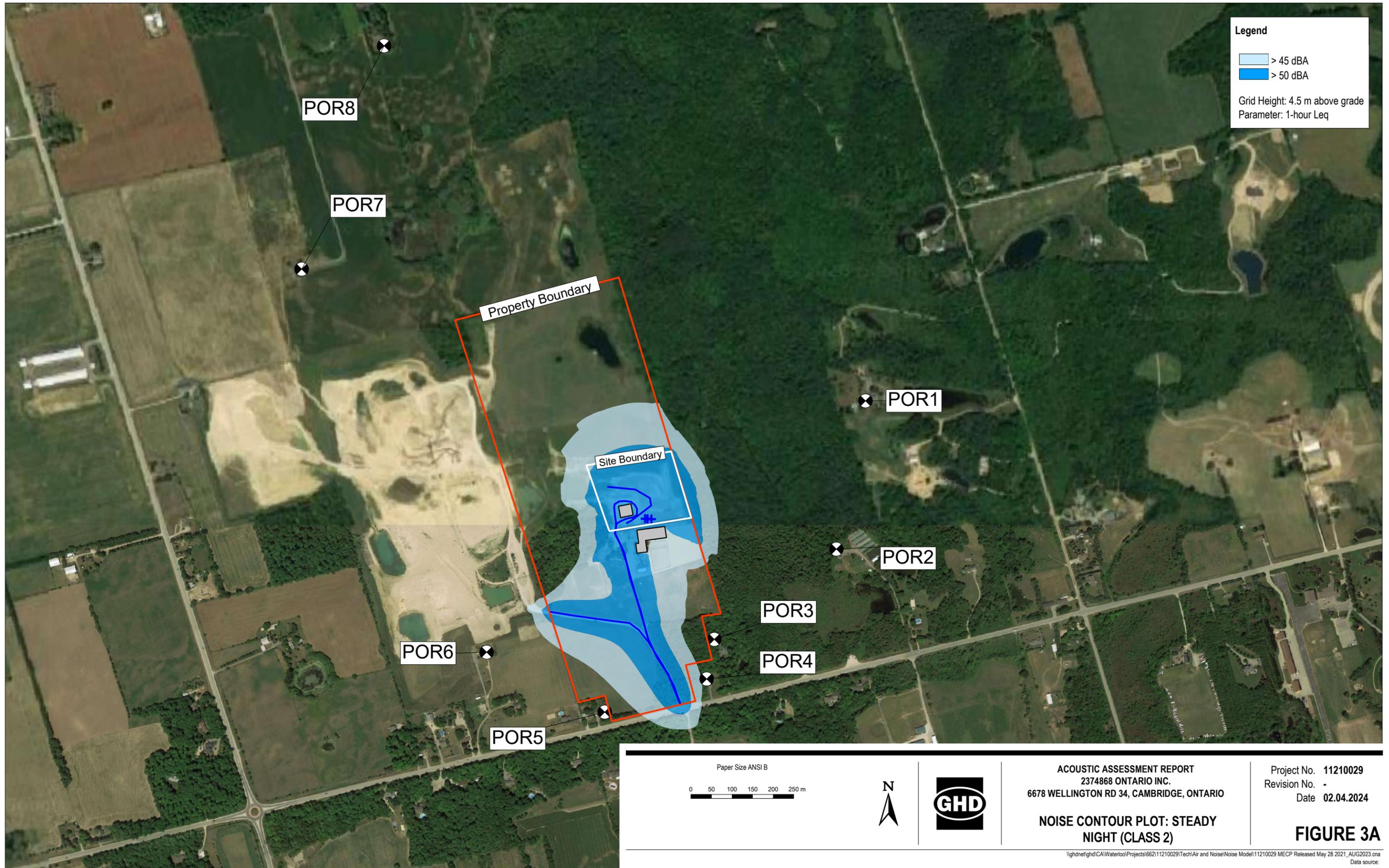
Project No. 11210029  
 Revision No. -  
 Date 30.08.2023

**NOISE SOURCE LOCATION PLAN**

**FIGURE 1**

\\ghdnet\ghd\CAI\Waterloo\Projects\66211210029\Tech\Air and Noise\Noise Model\11210029 MECP Released May 28 2021\_AUG2023.cna  
 Data source:





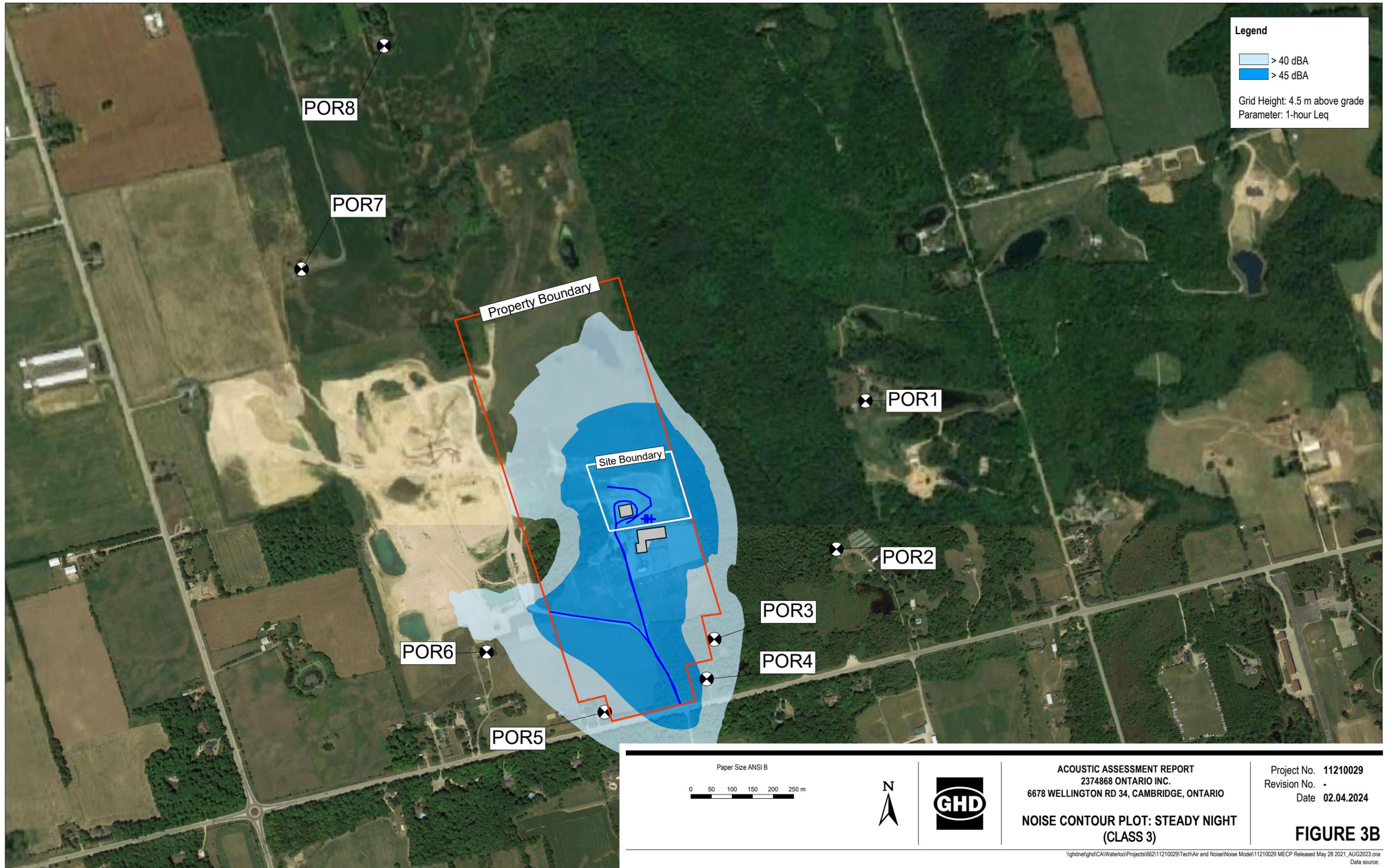


Table 1

**Noise Source Summary**  
**2374868 Ontario Inc.**  
**6678 Wellington Road 34, Cambridge, Ontario**

<b>Cadna A ID</b>	<b>Source Description</b>	<b>Sound Power Level<sup>1</sup> (dBA)</b>	<b>Source Characteristics<sup>2</sup></b>	<b>Source Location<sup>3</sup></b>	<b>Noise Control Measures<sup>4</sup></b>	<b>Source Type</b>
S1	Front End Loader	113.2	S	O	U	Point
S2A	Screening Equipment Motor	109.3	S	O	U	Point
S2B	Screening Operation	105.6	S	O	U	Point
S4	Excavator	103.2	S	O	U	Point
TR1	Truck Route	109.5	S	O	U	Line
TR2	Capitol Paving Truck Route	109.5	S	O	U	Line

## Notes:

<sup>1</sup> Sound Power Level (PWL) in dBA, excludes +5 dBA total penalty if applicable.

<sup>2</sup> Sound characteristics:

- S – Steady
- Q – Quasi-steady impulsive
- I – Impulsive
- B – Buzzing
- T – Tonal
- C – Cyclic

<sup>3</sup> Source location:

- O – Outside of building
- I – Inside of building

<sup>4</sup> Noise control measures:

- S – Silencer, acoustic louvre, muffler
- A – Acoustic lining, plenum
- B – Barrier, berm, screening
- L – Lagging
- E – Acoustic enclosure
- O – Other
- U – Uncontrolled
- AC – Administrative control

**Table 2**  
**Point of Reception Unattenuated Noise Impact**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34, Cambridge, Ontario

Cadna A ID	Source Description	Sideroad 10 N Residence Facade POR1			Highway 34 Residence Facade POR2			Highway 34 Residence Outdoor Receptor POR3			Highway 34 Residence Facade POR4			Highway 34 Residence Facade POR5			Highway 34 Residence Facade POR6			Concession Road Residence Facade POR7			Concession Road 4 Residence Facade POR8										
		Distance (m)	Partial Sound Levels <sup>1</sup> (dBA)			Distance (m)	Partial Sound Levels <sup>1</sup> (dBA)			Distance (m)	Partial Sound Levels <sup>1</sup> (dBA)			Distance (m)	Partial Sound Levels <sup>1</sup> (dBA)			Distance (m)	Partial Sound Levels <sup>1</sup> (dBA)			Distance (m)	Partial Sound Levels <sup>1</sup> (dBA)										
			Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am		Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am		Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am		Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am		Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am		Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am	Day 7am-7pm	Evening 7pm-11pm	Night 11pm-7am					
<b>Steady State Noise Impact</b>																																	
S1	Front End Loader	576	36	31	31	466	33	28	28	351	35	30	30	425	35	30	30	463	35	30	30	468	34	30	30	941	30	26	26	1217	27	23	23
S2A	Screening Equipment Motor	606	37	—	—	470	27	—	—	337	31	—	—	416	30	—	—	478	29	—	—	502	37	—	—	1030	28	—	—	1309	30	—	—
S2B	Screening Operation	601	35	—	—	464	33	—	—	334	32	—	—	414	32	—	—	479	32	—	—	507	39	—	—	1034	26	—	—	1312	28	—	—
S4	Excavator	593	34	31	31	455	31	28	28	329	30	27	27	410	31	28	28	481	30	27	27	514	35	32	32	1043	25	22	22	1317	26	23	23
TR1	Truck Route	613	31	26	26	492	31	26	26	141	43	38	38	83	46	41	41	177	43	38	38	387	37	32	32	951	27	23	23	1243	24	20	20
TR2	Capitol Paving Truck Route	783	25	25	25	507	26	26	26	142	37	37	37	81	42	42	42	178	40	40	40	206	36	36	36	1047	22	22	22	1442	18	18	18
<b>Total Facility Sound Level (1-hour Leq):</b>			<b>42</b>	<b>35</b>	<b>35</b>		<b>39</b>	<b>33</b>	<b>33</b>		<b>45</b>	<b>41</b>	<b>41</b>		<b>48</b>	<b>45</b>	<b>45</b>		<b>46</b>	<b>42</b>	<b>42</b>		<b>44</b>	<b>39</b>	<b>39</b>		<b>35</b>	<b>29</b>	<b>29</b>		<b>35</b>	<b>27</b>	<b>27</b>

Note:  
<sup>1</sup> Sound level at the receptor was calculated using Cadna A acoustical modelling software.

Table 3

**Acoustic Assessment Summary**  
**2374868 Ontario Inc.**  
**6678 Wellington Road 34, Cambridge, Ontario**

Point of Reception ID	Point of Reception Description	Time of Day	SS Sound Levels (L <sub>EQ</sub> )	Performance Limit <sup>1</sup> (L <sub>EQ</sub> )	Compliance with Performance Limit	Class Number	Verified by Acoustic Audit
			(dBA)	(dBA)	(Yes/No)		
<b>Steady State Noise Impact</b>							
POR1	Sideroad 10 N Residence Facade	07:00–19:00	42	50	Yes	Class 2	No
		19:00–23:00	35	50	Yes	Class 2	No
		23:00–07:00	35	45	Yes	Class 2	No
POR2	Highway 34 Residence Facade	07:00–19:00	39	50	Yes	Class 2	No
		19:00–23:00	33	50	Yes	Class 2	No
		23:00–07:00	33	45	Yes	Class 2	No
POR3	Highway 34 Residence Outdoor Receptor	07:00–19:00	45	50	Yes	Class 2	No
		19:00–23:00	41	45	Yes	Class 2	No
		23:00–07:00	41	45	Yes	Class 2	No
POR4	Highway 34 Residence Facade	07:00–19:00	48	50	Yes	Class 2	No
		19:00–23:00	45	50	Yes	Class 2	No
		23:00–07:00	45	45	Yes	Class 2	No
POR5	Highway 34 Residence Facade	07:00–19:00	46	50	Yes	Class 2	No
		19:00–23:00	42	50	Yes	Class 2	No
		23:00–07:00	42	45	Yes	Class 2	No
POR6	Highway 34 Residence Facade	07:00–19:00	44	50	Yes	Class 2	No
		19:00–23:00	39	50	Yes	Class 2	No
		23:00–07:00	39	45	Yes	Class 2	No
POR7	Concession Road Residence Facade	07:00–19:00	35	45	Yes	Class 3	No
		19:00–23:00	29	40	Yes	Class 3	No
		23:00–07:00	29	40	Yes	Class 3	No
POR8	Concession Road 4 Residence Facade	07:00–19:00	35	45	Yes	Class 3	No
		19:00–23:00	27	40	Yes	Class 3	No
		23:00–07:00	27	40	Yes	Class 3	No

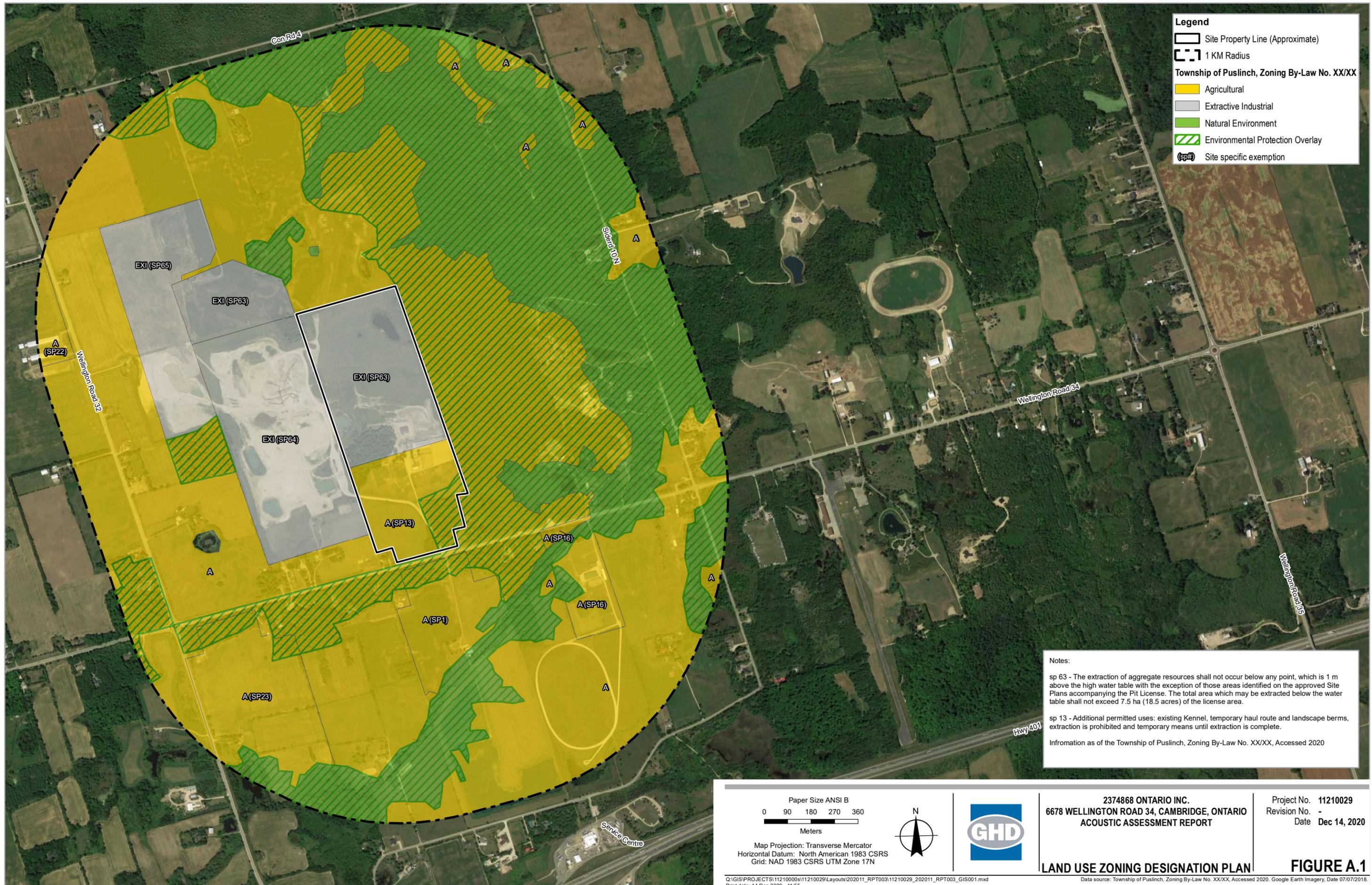
Note:

<sup>1</sup> Minimum MECP sound level limits as defined in NPC-300.

# Appendices

# **Appendix A**

## **Land Use Zoning Designation Plan**



**Legend**

- Site Property Line (Approximate)
- 1 KM Radius
- Township of Puslinch, Zoning By-Law No. XX/XX**
- Agricultural
- Extractive Industrial
- Natural Environment
- Environmental Protection Overlay
- Site specific exemption

**Notes:**

sp 63 - The extraction of aggregate resources shall not occur below any point, which is 1 m above the high water table with the exception of those areas identified on the approved Site Plans accompanying the Pit License. The total area which may be extracted below the water table shall not exceed 7.5 ha (18.5 acres) of the license area.

sp 13 - Additional permitted uses: existing Kennel, temporary haul route and landscape berms, extraction is prohibited and temporary means until extraction is complete.

Information as of the Township of Puslinch, Zoning By-Law No. XX/XX, Accessed 2020

Paper Size ANSI B  
 0 90 180 270 360  
 Meters

Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983 CSRS  
 Grid: NAD 1983 CSRS UTM Zone 17N



**2374868 ONTARIO INC.**  
**6678 WELLINGTON ROAD 34, CAMBRIDGE, ONTARIO**  
**ACOUSTIC ASSESSMENT REPORT**

**LAND USE ZONING DESIGNATION PLAN**

Project No. 11210029  
 Revision No. -  
 Date Dec 14, 2020

**FIGURE A.1**

# **Appendix B**

## **Summary of Insignificant Noise Sources**

Table B.1

**Insignificant Noise Source Summary**  
**2374868 Ontario Inc.**  
**6678 Wellington Road 34, Cambridge, Ontario**

<b>Source ID</b>	<b>Source Description</b>	<b>Comments</b>
S3	Screening Operation Stockpiling	Air emission only. Not a source of noise.
NA	Comfort Heating for Onsite Buildings	Source Estimated to be < 20 dBA at worst-case POR

# **Appendix C**

**Noise Specification and Worst-Case  
Simultaneous Operations Summary**

**Table C.1**  
**Noise Source Sound Level Summary**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34, Cambridge, Ontario

Cadna A ID	Noise Source Description		1/1 Octave Band Data								Unadjusted Total Sound Power Level (dBA)	Tonal Penalty Assessment (dBA)	Height Absolute (m)	Operating Time / # Truck Movements Day (min)	Operating Time / #Truck Movements Evening (min)	Operating Time / #Truck Movements Night (min)	Reference/Comments	
			32	63	125	250	500	1000	2000	4000								8000
S1	Front End Loader	PWL (dB)	108.0	105.0	108.0	111.0	112.0	108.0	105.0	99.0	87.0	117.4						
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	68.6	78.8	91.9	102.4	108.8	108.0	106.2	100.0	85.9	113.2	No	0	1.0	60	30	30
S2A	Screening Equipment Motor	PWL (dB)	101.3	109.3	97.0	97.8	101.4	106.1	103.1	96.9	96.9	112.9						
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	61.9	83.1	80.9	89.2	98.2	106.1	104.3	97.9	95.8	109.3	No	0	1.0	60	0	0
S2B	Screening Operation	PWL (dB)	90.8	99.7	102.0	102.3	101.7	100.9	98.8	95.1	87.7	109.1						
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	51.4	73.5	85.9	93.7	98.5	100.9	100.0	96.1	86.6	105.6	No	0	3.0	60	0	0
S4	Excavator	PWL (dB)	98.0	95.0	98.0	101.0	102.0	98.0	95.0	89.0	77.0	107.4						
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	58.6	68.8	81.9	92.4	98.8	98.0	96.2	90.0	75.9	103.2	No	0	3.0	60	30	30
TR1	Truck Route	PWL (dB)	30.6	116.6	111.6	104.6	106.6	103.6	102.6	99.6	90.6	118.6						
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	—	90.4	95.5	96.0	103.4	103.6	103.8	100.6	89.5	109.5	No	0	2.5	6	2	2
TR2	Capitol Paving Truck Route	PWL (dB)	30.6	116.6	111.6	104.6	106.6	103.6	102.6	99.6	90.6	118.6						
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	—	90.4	95.5	96.0	103.4	103.6	103.8	100.6	89.5	109.5	No	0	2.5	5	5	5

# **Appendix D**

**CadnaA Sample Calculation for POR1**



Line Source, ISO 9613, Name: "Truck Route", ID: "TR1"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
244	560343.24	4810833.27	2.50	0	N	A	68.6	19.4	0.0	0.0	0.0	61.2	1.9	0.2	0.0	0.0	0.0	0.0	0.0	24.7
244	560343.24	4810833.27	2.50	0	E	A	68.6	19.4	0.0	0.0	0.0	61.2	1.9	0.2	0.0	0.0	0.0	0.0	0.0	24.7
315	560332.22	4810870.26	2.50	0	D	A	73.3	18.0	0.0	0.0	0.0	62.1	2.1	0.4	0.0	0.0	0.0	0.0	0.0	26.8
315	560332.22	4810870.26	2.50	0	N	A	68.6	18.0	0.0	0.0	0.0	62.1	2.1	0.4	0.0	0.0	0.0	0.0	0.0	22.0
315	560332.22	4810870.26	2.50	0	E	A	68.6	18.0	0.0	0.0	0.0	62.1	2.1	0.4	0.0	0.0	0.0	0.0	0.0	22.0
376	560336.00	4810852.75	2.50	2	D	A	73.3	14.3	0.0	0.0	0.0	66.9	3.1	-2.1	0.0	0.0	4.7	0.0	28.2	-13.2
376	560336.00	4810852.75	2.50	2	N	A	68.6	14.3	0.0	0.0	0.0	66.9	3.1	-2.1	0.0	0.0	4.7	0.0	28.2	-18.0
376	560336.00	4810852.75	2.50	2	E	A	68.6	14.3	0.0	0.0	0.0	66.9	3.1	-2.1	0.0	0.0	4.7	0.0	28.2	-18.0
385	560337.84	4810844.25	2.50	2	D	A	73.3	9.7	0.0	0.0	0.0	66.9	3.1	-2.0	0.0	0.0	4.7	0.0	28.2	-17.9
385	560337.84	4810844.25	2.50	2	N	A	68.6	9.7	0.0	0.0	0.0	66.9	3.1	-2.0	0.0	0.0	4.7	0.0	28.2	-22.7
385	560337.84	4810844.25	2.50	2	E	A	68.6	9.7	0.0	0.0	0.0	66.9	3.1	-2.0	0.0	0.0	4.7	0.0	28.2	-22.7
394	560328.65	4810886.76	2.50	2	D	A	73.3	14.6	0.0	0.0	0.0	66.4	3.0	-2.3	0.0	0.0	4.7	0.0	27.2	-11.1
394	560328.65	4810886.76	2.50	2	N	A	68.6	14.6	0.0	0.0	0.0	66.4	3.0	-2.3	0.0	0.0	4.7	0.0	27.2	-15.9
394	560328.65	4810886.76	2.50	2	E	A	68.6	14.6	0.0	0.0	0.0	66.4	3.0	-2.3	0.0	0.0	4.7	0.0	27.2	-15.9
431	560323.89	4810898.19	2.50	0	D	A	73.3	16.8	0.0	0.0	0.0	62.7	2.2	0.2	0.0	0.0	0.0	0.0	0.0	25.1
431	560323.89	4810898.19	2.50	0	N	A	68.6	16.8	0.0	0.0	0.0	62.7	2.2	0.2	0.0	0.0	0.0	0.0	0.0	20.3
431	560323.89	4810898.19	2.50	0	E	A	68.6	16.8	0.0	0.0	0.0	62.7	2.2	0.2	0.0	0.0	0.0	0.0	0.0	20.3
447	560325.98	4810891.90	2.50	2	D	A	73.3	15.4	0.0	0.0	0.0	66.4	3.0	-2.3	0.0	0.0	4.7	0.0	27.0	-10.0
447	560325.98	4810891.90	2.50	2	N	A	68.6	15.4	0.0	0.0	0.0	66.4	3.0	-2.3	0.0	0.0	4.7	0.0	27.0	-14.8
447	560325.98	4810891.90	2.50	2	E	A	68.6	15.4	0.0	0.0	0.0	66.4	3.0	-2.3	0.0	0.0	4.7	0.0	27.0	-14.8
458	560316.60	4810920.06	2.50	2	D	A	73.3	2.9	0.0	0.0	0.0	65.9	2.9	-2.2	0.0	0.0	4.7	0.0	10.0	-5.1
458	560316.60	4810920.06	2.50	2	N	A	68.6	2.9	0.0	0.0	0.0	65.9	2.9	-2.2	0.0	0.0	4.7	0.0	10.0	-9.8
458	560316.60	4810920.06	2.50	2	E	A	68.6	2.9	0.0	0.0	0.0	65.9	2.9	-2.2	0.0	0.0	4.7	0.0	10.0	-9.8
459	560309.43	4810935.19	2.50	0	D	A	73.3	15.0	0.0	0.0	0.0	63.5	2.4	0.0	0.0	0.0	0.0	0.0	0.0	22.5
459	560309.43	4810935.19	2.50	0	N	A	68.6	15.0	0.0	0.0	0.0	63.5	2.4	0.0	0.0	0.0	0.0	0.0	0.0	17.7
459	560309.43	4810935.19	2.50	0	E	A	68.6	15.0	0.0	0.0	0.0	63.5	2.4	0.0	0.0	0.0	0.0	0.0	0.0	17.7
468	560313.96	4810925.81	2.50	2	D	A	73.3	10.3	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	10.0	2.5
468	560313.96	4810925.81	2.50	2	N	A	68.6	10.3	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	10.0	-2.3
468	560313.96	4810925.81	2.50	2	E	A	68.6	10.3	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	10.0	-2.3
475	560319.72	4810913.38	2.50	0	D	A	73.3	14.4	0.0	0.0	0.0	63.0	2.3	-0.0	0.0	0.0	0.0	0.0	0.0	22.5
475	560319.72	4810913.38	2.50	0	N	A	68.6	14.4	0.0	0.0	0.0	63.0	2.3	-0.0	0.0	0.0	0.0	0.0	0.0	17.7
475	560319.72	4810913.38	2.50	0	E	A	68.6	14.4	0.0	0.0	0.0	63.0	2.3	-0.0	0.0	0.0	0.0	0.0	0.0	17.7
477	560323.16	4810906.07	2.50	2	D	A	73.3	10.6	0.0	0.0	0.0	66.2	2.9	-2.3	0.0	0.0	4.7	0.0	26.6	-14.2
477	560323.16	4810906.07	2.50	2	N	A	68.6	10.6	0.0	0.0	0.0	66.2	2.9	-2.3	0.0	0.0	4.7	0.0	26.6	-19.0
477	560323.16	4810906.07	2.50	2	E	A	68.6	10.6	0.0	0.0	0.0	66.2	2.9	-2.3	0.0	0.0	4.7	0.0	26.6	-19.0
479	560315.38	4810922.61	2.50	2	D	A	73.3	8.6	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	10.0	0.7
479	560315.38	4810922.61	2.50	2	N	A	68.6	8.6	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	10.0	-4.0
479	560315.38	4810922.61	2.50	2	E	A	68.6	8.6	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	10.0	-4.0
481	560308.21	4810937.15	2.50	0	D	A	73.3	14.0	0.0	0.0	0.0	63.5	2.4	0.1	0.0	0.0	0.0	0.0	0.0	21.4
481	560308.21	4810937.15	2.50	0	N	A	68.6	14.0	0.0	0.0	0.0	63.5	2.4	0.1	0.0	0.0	0.0	0.0	0.0	16.6
481	560308.21	4810937.15	2.50	0	E	A	68.6	14.0	0.0	0.0	0.0	63.5	2.4	0.1	0.0	0.0	0.0	0.0	0.0	16.6
484	560312.72	4810928.12	2.50	2	D	A	73.3	7.0	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	9.9	-0.7
484	560312.72	4810928.12	2.50	2	N	A	68.6	7.0	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	9.9	-5.5
484	560312.72	4810928.12	2.50	2	E	A	68.6	7.0	0.0	0.0	0.0	65.8	2.8	-2.2	0.0	0.0	4.7	0.0	9.9	-5.5
495	560304.53	4810961.16	2.50	0	D	A	73.3	13.8	0.0	0.0	0.0	64.0	2.4	-0.3	0.0	0.0	0.0	0.0	0.0	21.0
495	560304.53	4810961.16	2.50	0	N	A	68.6	13.8	0.0	0.0	0.0	64.0	2.4	-0.3	0.0	0.0	0.0	0.0	0.0	16.2
495	560304.53	4810961.16	2.50	0	E	A	68.6	13.8	0.0	0.0	0.0	64.0	2.4	-0.3	0.0	0.0	0.0	0.0	0.0	16.2
497	560301.35	4811002.08	2.50	0	D	A	73.3	13.3	0.0	0.0	0.0	64.7	2.6	-1.1	0.0	0.0	0.0	0.0	0.0	20.4
497	560301.35	4811002.08	2.50	0	N	A	68.6	13.3	0.0	0.0	0.0	64.7	2.6	-1.1	0.0	0.0	0.0	0.0	0.0	15.6
497	560301.35	4811002.08	2.50	0	E	A	68.6	13.3	0.0	0.0	0.0	64.7	2.6	-1.1	0.0	0.0	0.0	0.0	0.0	15.6
499	560300.22	4811011.79	2.50	1	D	A	73.3	2.2	0.0	0.0	0.0	65.3	2.7	-2.1	0.0	0.0	4.7	0.0	8.7	-3.8
499	560300.22	4811011.79	2.50	1	N	A	68.6	2.2	0.0	0.0	0.0	65.3	2.7	-2.1	0.0	0.0	4.7	0.0	8.7	-8.6
499	560300.22	4811011.79	2.50	1	E	A	68.6	2.2	0.0	0.0	0.0	65.3	2.7	-2.1	0.0	0.0	4.7	0.0	8.7	-8.6
501	560304.29	4810969.25	2.50	0	D	A	73.3	12.1	0.0	0.0	0.0	64.1	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	19.3
501	560304.29	4810969.25	2.50	0	N	A	68.6	12.1	0.0	0.0	0.0	64.1	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	14.5
501	560304.29	4810969.25	2.50	0	E	A	68.6	12.1	0.0	0.0	0.0	64.1	2.5	-0.5	0.0	0.0	0.0	0.0	0.0	14.5
502	560303.31	4810954.79	2.50	0	D	A	73.3	11.1	0.0	0.0	0.0	63.8	2.4	-0.1	0.0	0.0	0.0	0.0	0.0	18.3
502	560303.31	4810954.79	2.50	0	N	A	68.6	11.1	0.0	0.0	0.0	63.8	2.4	-0.1	0.0	0.0	0.0	0.0	0.0	13.5
502	560303.31	4810954.79	2.50	0	E	A	68.6	11.1	0.0	0.0	0.0	63.8	2.4	-0.1	0.0	0.0	0.0	0.0	0.0	13.5
503	560303.55	4810984.44	2.50	0	D	A	73.3	11.6	0.0	0.0	0.0	64.4	2.5	-0.8	0.0	0.0	0.0	0.0	0.0	18.7
503	560303.55	4810984.44	2.50	0	N	A	68.6	11.6	0.0	0.0	0.0	64.4	2.5	-0.8	0.0	0.0	0.0	0.0	0.0	14.0
503	560303.55	4810984.44	2.50	0	E	A	68.6	11.6	0.0	0.0	0.0	64.4	2.5	-0.8	0.0	0.0	0.0	0.0	0.0	14.0
504	560355.74	4811001.59	2.50	0	D	A	73.3	11.5	0.0	0.0	0.0	64.8	2.6	-1.8	0.0	0.0	4.7	0.0	0.0	14.5
504	560355.74	4811001.59	2.50	0	N	A	68.6	11.5	0.0	0.0	0.0	64.8	2.6	-1.8	0.0	0.0	4.7	0.0	0.0	9.7
504	560355.74	4811001.59	2.50	0	E	A	68.6	11.5	0.0	0.0	0.0	64.8	2.6	-1.8	0.0	0.0	4.7	0.0	0.0	9.7
505	560312.74	4810976.98	2.50	0	D	A	73.3	9.3	0.0	0.0</										

Line Source, ISO 9613, Name: "Truck Route", ID: "TR1"

Nr.	X	Y	Z	Ref.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
505	560312.74	4810976.98	2.50	0	E	A	68.6	9.3	0.0	0.0	0.0	64.3	2.5	-1.0	0.0	0.0	3.6	0.0	0.0	8.5
506	560308.61	4810974.30	2.50	0	D	A	73.3	1.3	0.0	0.0	0.0	64.2	2.5	-0.8	0.0	0.0	0.0	0.0	0.0	8.7
506	560308.61	4810974.30	2.50	0	N	A	68.6	1.3	0.0	0.0	0.0	64.2	2.5	-0.8	0.0	0.0	0.0	0.0	0.0	4.0
506	560308.61	4810974.30	2.50	0	E	A	68.6	1.3	0.0	0.0	0.0	64.2	2.5	-0.8	0.0	0.0	0.0	0.0	0.0	4.0
507	560307.27	4810973.42	2.50	0	D	A	73.3	2.7	0.0	0.0	0.0	64.2	2.5	-0.7	0.0	0.0	0.0	0.0	0.0	10.0
507	560307.27	4810973.42	2.50	0	N	A	68.6	2.7	0.0	0.0	0.0	64.2	2.5	-0.7	0.0	0.0	0.0	0.0	0.0	5.2
507	560307.27	4810973.42	2.50	0	E	A	68.6	2.7	0.0	0.0	0.0	64.2	2.5	-0.7	0.0	0.0	0.0	0.0	0.0	5.2
516	560315.85	4810979.00	2.50	2	D	A	73.3	0.2	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.7	0.0	9.6	-6.3
516	560315.85	4810979.00	2.50	2	N	A	68.6	0.2	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.7	0.0	9.6	-11.1
516	560315.85	4810979.00	2.50	2	E	A	68.6	0.2	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.7	0.0	9.6	-11.1
524	560319.48	4811027.31	2.50	0	D	A	73.3	11.5	0.0	0.0	0.0	65.2	2.7	-1.6	0.0	0.0	12.2	0.0	0.0	6.4
524	560319.48	4811027.31	2.50	0	N	A	68.6	11.5	0.0	0.0	0.0	65.2	2.7	-1.6	0.0	0.0	12.2	0.0	0.0	1.7
524	560319.48	4811027.31	2.50	0	E	A	68.6	11.5	0.0	0.0	0.0	65.2	2.7	-1.6	0.0	0.0	12.2	0.0	0.0	1.7
538	560333.69	4811027.07	2.50	0	D	A	73.3	11.5	0.0	0.0	0.0	65.2	2.7	-1.7	0.0	0.0	14.8	0.0	0.0	4.0
538	560333.69	4811027.07	2.50	0	N	A	68.6	11.5	0.0	0.0	0.0	65.2	2.7	-1.7	0.0	0.0	14.8	0.0	0.0	-0.8
538	560333.69	4811027.07	2.50	0	E	A	68.6	11.5	0.0	0.0	0.0	65.2	2.7	-1.7	0.0	0.0	14.8	0.0	0.0	-0.8
540	560321.44	4810981.50	2.50	0	D	A	73.3	10.5	0.0	0.0	0.0	64.4	2.5	-1.4	0.0	0.0	4.7	0.0	0.0	13.7
540	560321.44	4810981.50	2.50	0	N	A	68.6	10.5	0.0	0.0	0.0	64.4	2.5	-1.4	0.0	0.0	4.7	0.0	0.0	8.9
540	560321.44	4810981.50	2.50	0	E	A	68.6	10.5	0.0	0.0	0.0	64.4	2.5	-1.4	0.0	0.0	4.7	0.0	0.0	8.9
542	560323.13	4810982.22	2.50	1	D	A	73.3	8.8	0.0	0.0	0.0	64.6	2.6	-1.5	0.0	0.0	4.7	0.0	1.4	10.3
542	560323.13	4810982.22	2.50	1	N	A	68.6	8.8	0.0	0.0	0.0	64.6	2.6	-1.5	0.0	0.0	4.7	0.0	1.4	5.5
542	560323.13	4810982.22	2.50	1	E	A	68.6	8.8	0.0	0.0	0.0	64.6	2.6	-1.5	0.0	0.0	4.7	0.0	1.4	5.5
547	560320.43	4810981.06	2.50	1	D	A	73.3	9.5	0.0	0.0	0.0	64.6	2.6	-1.9	0.0	0.0	4.7	0.0	8.5	4.3
547	560320.43	4810981.06	2.50	1	N	A	68.6	9.5	0.0	0.0	0.0	64.6	2.6	-1.9	0.0	0.0	4.7	0.0	8.5	-0.4
547	560320.43	4810981.06	2.50	1	E	A	68.6	9.5	0.0	0.0	0.0	64.6	2.6	-1.9	0.0	0.0	4.7	0.0	8.5	-0.4
549	560318.70	4810980.32	2.50	2	D	A	73.3	7.2	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.7	0.0	9.6	0.6
549	560318.70	4810980.32	2.50	2	N	A	68.6	7.2	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.7	0.0	9.6	-4.1
549	560318.70	4810980.32	2.50	2	E	A	68.6	7.2	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.7	0.0	9.6	-4.1
551	560345.38	4811022.62	2.50	0	D	A	73.3	10.7	0.0	0.0	0.0	65.2	2.7	-1.8	0.0	0.0	11.7	0.0	0.0	6.3
551	560345.38	4811022.62	2.50	0	N	A	68.6	10.7	0.0	0.0	0.0	65.2	2.7	-1.8	0.0	0.0	11.7	0.0	0.0	1.6
551	560345.38	4811022.62	2.50	0	E	A	68.6	10.7	0.0	0.0	0.0	65.2	2.7	-1.8	0.0	0.0	11.7	0.0	0.0	1.6
562	560350.53	4811018.45	2.50	0	D	A	73.3	1.6	0.0	0.0	0.0	65.1	2.7	-1.8	0.0	0.0	4.7	0.0	0.0	4.2
562	560350.53	4811018.45	2.50	0	N	A	68.6	1.6	0.0	0.0	0.0	65.1	2.7	-1.8	0.0	0.0	4.7	0.0	0.0	-0.6
562	560350.53	4811018.45	2.50	0	E	A	68.6	1.6	0.0	0.0	0.0	65.1	2.7	-1.8	0.0	0.0	4.7	0.0	0.0	-0.6
564	560306.58	4811023.40	2.50	0	D	A	73.3	10.6	0.0	0.0	0.0	65.1	2.7	-1.5	0.0	0.0	0.0	0.0	0.0	17.7
564	560306.58	4811023.40	2.50	0	N	A	68.6	10.6	0.0	0.0	0.0	65.1	2.7	-1.5	0.0	0.0	0.0	0.0	0.0	12.9
564	560306.58	4811023.40	2.50	0	E	A	68.6	10.6	0.0	0.0	0.0	65.1	2.7	-1.5	0.0	0.0	0.0	0.0	0.0	12.9
566	560311.97	4811026.58	2.50	0	D	A	73.3	-0.3	0.0	0.0	0.0	65.2	2.7	-1.5	0.0	0.0	4.1	0.0	0.0	2.6
566	560311.97	4811026.58	2.50	0	N	A	68.6	-0.3	0.0	0.0	0.0	65.2	2.7	-1.5	0.0	0.0	4.1	0.0	0.0	-2.2
566	560311.97	4811026.58	2.50	0	E	A	68.6	-0.3	0.0	0.0	0.0	65.2	2.7	-1.5	0.0	0.0	4.1	0.0	0.0	-2.2
584	560303.69	4811021.69	2.50	1	D	A	73.3	6.9	0.0	0.0	0.0	65.1	2.7	-1.6	0.0	0.0	4.7	0.0	1.7	7.6
584	560303.69	4811021.69	2.50	1	N	A	68.6	6.9	0.0	0.0	0.0	65.1	2.7	-1.6	0.0	0.0	4.7	0.0	1.7	2.8
584	560303.69	4811021.69	2.50	1	E	A	68.6	6.9	0.0	0.0	0.0	65.1	2.7	-1.6	0.0	0.0	4.7	0.0	1.7	2.8
592	560306.32	4811023.24	2.50	1	D	A	73.3	0.8	0.0	0.0	0.0	65.1	2.7	-1.5	0.0	0.0	0.0	0.0	1.4	6.5
592	560306.32	4811023.24	2.50	1	N	A	68.6	0.8	0.0	0.0	0.0	65.1	2.7	-1.5	0.0	0.0	0.0	0.0	1.4	1.8
592	560306.32	4811023.24	2.50	1	E	A	68.6	0.8	0.0	0.0	0.0	65.1	2.7	-1.5	0.0	0.0	0.0	0.0	1.4	1.8
595	560303.46	4811021.56	2.50	1	D	A	73.3	6.4	0.0	0.0	0.0	65.4	2.7	-2.1	0.0	0.0	8.8	0.0	12.9	-8.1
595	560303.46	4811021.56	2.50	1	N	A	68.6	6.4	0.0	0.0	0.0	65.4	2.7	-2.1	0.0	0.0	8.8	0.0	12.9	-12.8
595	560303.46	4811021.56	2.50	1	E	A	68.6	6.4	0.0	0.0	0.0	65.4	2.7	-2.1	0.0	0.0	8.8	0.0	12.9	-12.8
597	560351.08	4810991.30	2.50	0	D	A	73.3	10.4	0.0	0.0	0.0	64.6	2.6	-1.7	0.0	0.0	4.7	0.0	0.0	13.5
597	560351.08	4810991.30	2.50	0	N	A	68.6	10.4	0.0	0.0	0.0	64.6	2.6	-1.7	0.0	0.0	4.7	0.0	0.0	8.7
597	560351.08	4810991.30	2.50	0	E	A	68.6	10.4	0.0	0.0	0.0	64.6	2.6	-1.7	0.0	0.0	4.7	0.0	0.0	8.7
599	560347.68	4810988.84	2.50	1	D	A	73.3	4.0	0.0	0.0	0.0	64.7	2.6	-1.7	0.0	0.0	4.7	0.0	1.2	5.8
599	560347.68	4810988.84	2.50	1	N	A	68.6	4.0	0.0	0.0	0.0	64.7	2.6	-1.7	0.0	0.0	4.7	0.0	1.2	1.0
599	560347.68	4810988.84	2.50	1	E	A	68.6	4.0	0.0	0.0	0.0	64.7	2.6	-1.7	0.0	0.0	4.7	0.0	1.2	1.0
601	560331.48	4810985.17	2.50	0	D	A	73.3	10.1	0.0	0.0	0.0	64.5	2.5	-1.5	0.0	0.0	4.7	0.0	0.0	13.3
601	560331.48	4810985.17	2.50	0	N	A	68.6	10.1	0.0	0.0	0.0	64.5	2.5	-1.5	0.0	0.0	4.7	0.0	0.0	8.5
601	560331.48	4810985.17	2.50	0	E	A	68.6	10.1	0.0	0.0	0.0	64.5	2.5	-1.5	0.0	0.0	4.7	0.0	0.0	8.5
603	560331.48	4810985.17	2.50	1	D	A	73.3	10.1	0.0	0.0	0.0	64.7	2.6	-1.6	0.0	0.0	4.7	0.0	1.2	11.9
603	560331.48	4810985.17	2.50	1	N	A	68.6	10.1	0.0	0.0	0.0	64.7	2.6	-1.6	0.0	0.0	4.7	0.0	1.2	7.1
603	560331.48	4810985.17	2.50	1	E	A	68.6	10.1	0.0	0.0	0.0	64.7	2.6	-1.6	0.0	0.0	4.7	0.0	1.2	7.1
605	560333.19	4810985.68	2.50	1	D	A	73.3	8.2	0.0	0.0	0.0	64.7	2.6	-1.9	0.0	0.0	5.0	0.0	4.2	7.0
605	560333.19	4810985.68	2.50	1	N	A	68.6	8.2	0.0	0.0	0.0	64.7	2.6	-1.9	0.0	0.0	5.0	0.0	4.2	2.3
605	560333.19	4810985.68	2.50	1	E	A	68.6	8.2	0.0	0.0	0.0	64.7	2.6	-1.9	0.0	0.0	5.0	0.0	4.2	2.3
608	560331.60	4810985.21	2.50	2	D	A	73.3	10.0	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.8	0.0	9.7	3.2
608	560331.60	4810985.21	2.50	2	N	A	68.6	10.0	0.0	0.0	0.0	64.9	2.6	-2.0	0.0	0.0	4.8	0.0	9.7	

Line Source, ISO 9613, Name: "Truck Route", ID: "TR1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
610	560341.53	4810987.38	2.50	0	D	A	73.3	10.2	0.0	0.0	0.0	64.5	2.6	-1.6	0.0	0.0	4.7	0.0	0.0	13.3
610	560341.53	4810987.38	2.50	0	N	A	68.6	10.2	0.0	0.0	0.0	64.5	2.6	-1.6	0.0	0.0	4.7	0.0	0.0	8.6
610	560341.53	4810987.38	2.50	0	E	A	68.6	10.2	0.0	0.0	0.0	64.5	2.6	-1.6	0.0	0.0	4.7	0.0	0.0	8.6
612	560341.53	4810987.38	2.50	1	D	A	73.3	10.2	0.0	0.0	0.0	64.7	2.6	-1.7	0.0	0.0	4.7	0.0	1.2	12.0
612	560341.53	4810987.38	2.50	1	N	A	68.6	10.2	0.0	0.0	0.0	64.7	2.6	-1.7	0.0	0.0	4.7	0.0	1.2	7.2
612	560341.53	4810987.38	2.50	1	E	A	68.6	10.2	0.0	0.0	0.0	64.7	2.6	-1.7	0.0	0.0	4.7	0.0	1.2	7.2
614	560338.82	4810986.99	2.50	1	D	A	73.3	6.9	0.0	0.0	0.0	64.6	2.6	-1.8	0.0	0.0	4.7	0.0	4.1	6.1
614	560338.82	4810986.99	2.50	1	N	A	68.6	6.9	0.0	0.0	0.0	64.6	2.6	-1.8	0.0	0.0	4.7	0.0	4.1	1.3
614	560338.82	4810986.99	2.50	1	E	A	68.6	6.9	0.0	0.0	0.0	64.6	2.6	-1.8	0.0	0.0	4.7	0.0	4.1	1.3
616	560337.50	4810986.80	2.50	2	D	A	73.3	3.5	0.0	0.0	0.0	64.8	2.6	-1.9	0.0	0.0	4.7	0.0	5.1	1.5
616	560337.50	4810986.80	2.50	2	N	A	68.6	3.5	0.0	0.0	0.0	64.8	2.6	-1.9	0.0	0.0	4.7	0.0	5.1	-3.2
616	560337.50	4810986.80	2.50	2	E	A	68.6	3.5	0.0	0.0	0.0	64.8	2.6	-1.9	0.0	0.0	4.7	0.0	5.1	-3.2
618	560353.53	4811013.35	2.50	0	D	A	73.3	10.2	0.0	0.0	0.0	65.0	2.7	-1.8	0.0	0.0	4.7	0.0	0.0	13.0
618	560353.53	4811013.35	2.50	0	N	A	68.6	10.2	0.0	0.0	0.0	65.0	2.7	-1.8	0.0	0.0	4.7	0.0	0.0	8.2
618	560353.53	4811013.35	2.50	0	E	A	68.6	10.2	0.0	0.0	0.0	65.0	2.7	-1.8	0.0	0.0	4.7	0.0	0.0	8.2
620	560300.86	4811016.53	2.50	0	D	A	73.3	9.0	0.0	0.0	0.0	65.0	2.7	-1.1	0.0	0.0	0.0	0.0	0.0	15.9
620	560300.86	4811016.53	2.50	0	N	A	68.6	9.0	0.0	0.0	0.0	65.0	2.7	-1.1	0.0	0.0	0.0	0.0	0.0	11.1
620	560300.86	4811016.53	2.50	0	E	A	68.6	9.0	0.0	0.0	0.0	65.0	2.7	-1.1	0.0	0.0	0.0	0.0	0.0	11.1
622	560301.35	4811019.15	2.50	1	D	A	73.3	4.2	0.0	0.0	0.0	65.1	2.7	-1.6	0.0	0.0	4.7	0.0	4.1	2.5
622	560301.35	4811019.15	2.50	1	N	A	68.6	4.2	0.0	0.0	0.0	65.1	2.7	-1.6	0.0	0.0	4.7	0.0	4.1	-2.2
622	560301.35	4811019.15	2.50	1	E	A	68.6	4.2	0.0	0.0	0.0	65.1	2.7	-1.6	0.0	0.0	4.7	0.0	4.1	-2.2
624	560300.63	4811015.33	2.50	1	D	A	73.3	7.4	0.0	0.0	0.0	65.3	2.7	-2.1	0.0	0.0	4.7	0.0	8.8	1.4
624	560300.63	4811015.33	2.50	1	N	A	68.6	7.4	0.0	0.0	0.0	65.3	2.7	-2.1	0.0	0.0	4.7	0.0	8.8	-3.4
624	560300.63	4811015.33	2.50	1	E	A	68.6	7.4	0.0	0.0	0.0	65.3	2.7	-2.1	0.0	0.0	4.7	0.0	8.8	-3.4
626	560301.37	4811019.25	2.50	1	D	A	73.3	3.9	0.0	0.0	0.0	65.4	2.7	-2.1	0.0	0.0	6.4	0.0	11.7	-6.8
626	560301.37	4811019.25	2.50	1	N	A	68.6	3.9	0.0	0.0	0.0	65.4	2.7	-2.1	0.0	0.0	6.4	0.0	11.7	-11.6
626	560301.37	4811019.25	2.50	1	E	A	68.6	3.9	0.0	0.0	0.0	65.4	2.7	-2.1	0.0	0.0	6.4	0.0	11.7	-11.6

Point Source, ISO 9613, Name: "Screening Operation", ID: "S2B"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
124	560381.18	4810984.87	3.00	0	D	A	105.6	0.0	0.0	0.0	0.0	64.6	2.6	-1.9	0.0	0.0	8.2	0.0	0.0	32.1
124	560381.18	4810984.87	3.00	0	N	A	105.6	0.0	-188.0	0.0	0.0	64.6	2.6	-1.9	0.0	0.0	8.2	0.0	0.0	-155.9
124	560381.18	4810984.87	3.00	0	E	A	105.6	0.0	-188.0	0.0	0.0	64.6	2.6	-1.9	0.0	0.0	8.2	0.0	0.0	-155.9

Line Source, ISO 9613, Name: "Front End Loader", ID: "S1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
138	560299.58	4811060.75	2.50	0	D	A	82.0	14.6	0.0	0.0	0.0	65.7	2.1	-1.2	0.0	0.0	0.0	0.0	0.0	29.9
138	560299.58	4811060.75	2.50	0	N	A	77.2	14.6	0.0	0.0	0.0	65.7	2.1	-1.2	0.0	0.0	0.0	0.0	0.0	25.1
138	560299.58	4811060.75	2.50	0	E	A	77.2	14.6	0.0	0.0	0.0	65.7	2.1	-1.2	0.0	0.0	0.0	0.0	0.0	25.1
140	560314.43	4811059.38	2.50	0	D	A	82.0	1.1	0.0	0.0	0.0	65.7	2.1	-1.7	0.0	0.0	2.2	0.0	0.0	14.8
140	560314.43	4811059.38	2.50	0	N	A	77.2	1.1	0.0	0.0	0.0	65.7	2.1	-1.7	0.0	0.0	2.2	0.0	0.0	10.0
140	560314.43	4811059.38	2.50	0	E	A	77.2	1.1	0.0	0.0	0.0	65.7	2.1	-1.7	0.0	0.0	2.2	0.0	0.0	10.0
148	560333.43	4811057.63	2.50	0	D	A	82.0	15.7	0.0	0.0	0.0	65.7	2.1	-1.9	0.0	0.0	6.0	0.0	0.0	25.7
148	560333.43	4811057.63	2.50	0	N	A	77.2	15.7	0.0	0.0	0.0	65.7	2.1	-1.9	0.0	0.0	6.0	0.0	0.0	20.9
148	560333.43	4811057.63	2.50	0	E	A	77.2	15.7	0.0	0.0	0.0	65.7	2.1	-1.9	0.0	0.0	6.0	0.0	0.0	20.9
150	560286.14	4811061.99	2.50	1	D	A	82.0	1.8	0.0	0.0	0.0	65.8	2.1	-1.7	0.0	0.0	4.8	0.0	11.0	1.8
150	560286.14	4811061.99	2.50	1	N	A	77.2	1.8	0.0	0.0	0.0	65.8	2.1	-1.7	0.0	0.0	4.8	0.0	11.0	-3.0
150	560286.14	4811061.99	2.50	1	E	A	77.2	1.8	0.0	0.0	0.0	65.8	2.1	-1.7	0.0	0.0	4.8	0.0	11.0	-3.0
159	560287.66	4811061.85	2.50	1	D	A	82.0	1.8	0.0	0.0	0.0	65.8	2.1	-1.7	0.0	0.0	0.0	0.0	4.7	12.8
159	560287.66	4811061.85	2.50	1	N	A	77.2	1.8	0.0	0.0	0.0	65.8	2.1	-1.7	0.0	0.0	0.0	0.0	4.7	8.0
159	560287.66	4811061.85	2.50	1	E	A	77.2	1.8	0.0	0.0	0.0	65.8	2.1	-1.7	0.0	0.0	0.0	0.0	4.7	8.0
162	560285.88	4811062.02	2.50	1	D	A	82.0	0.0	0.0	0.0	0.0	66.1	2.2	-2.2	0.0	0.0	4.9	0.0	31.2	-20.2
162	560285.88	4811062.02	2.50	1	N	A	77.2	0.0	0.0	0.0	0.0	66.1	2.2	-2.2	0.0	0.0	4.9	0.0	31.2	-25.0
162	560285.88	4811062.02	2.50	1	E	A	77.2	0.0	0.0	0.0	0.0	66.1	2.2	-2.2	0.0	0.0	4.9	0.0	31.2	-25.0
215	560366.20	4810998.53	2.50	0	D	A	82.0	10.0	0.0	0.0	0.0	64.8	1.9	-1.9	0.0	0.0	6.1	0.0	0.0	21.0
215	560366.20	4810998.53	2.50	0	N	A	77.2	10.0	0.0	0.0	0.0	64.8	1.9	-1.9	0.0	0.0	6.1	0.0	0.0	16.2
215	560366.20	4810998.53	2.50	0	E	A	77.2	10.0	0.0	0.0	0.0	64.8	1.9	-1.9	0.0	0.0	6.1	0.0	0.0	16.2
218	560352.23	4810988.00	2.50	0	D	A	82.0	14.0	0.0	0.0	0.0	64.6	1.9	-1.7	0.0	0.0	4.8	0.0	0.0	26.4
218	560352.23	4810988.00	2.50	0	N	A	77.2	14.0	0.0	0.0	0.0	64.6	1.9	-1.7	0.0	0.0	4.8	0.0	0.0	21.6
218	560352.23	4810988.00	2.50	0	E	A	77.2	14.0	0.0	0.0	0.0	64.6	1.9	-1.7	0.0	0.0	4.8	0.0	0.0	21.6
220	560346.32	4810983.54	2.50	1	D	A	82.0	10.1	0.0	0.0	0.0	64.8	2.0	-1.7	0.0	0.0	4.8	0.0	1.0	21.2
220	560346.32	4810983.54	2.50	1	N	A	77.2	10.1	0.0	0.0	0.0	64.8	2.0	-1.7	0.0	0.0	4.8	0.0	1.0	16.5
220	560346.32	4810983.54	2.50	1	E	A	77.2	10.1	0.0	0.0	0.0	64.8	2.0	-1.7	0.0	0.0	4.8	0.0	1.0	16.5
227	560367.75	4810999.70	2.50	2	D	A	82.0	7.8	0.0	0.0	0.0	66.0	2.2	-2.0	0.0	0.0	4.8	0.0	12.1	6.8
227	560367.75	4810999.70	2.50	2	N	A	77.2	7.8	0.0	0.0	0.0	66.0	2.2	-2.0	0.0	0.0	4.8	0.0	12.1	2.0
227	560367.75	4810999.70	2.50	2	E	A	77.2	7.8	0.0	0.0	0.0	66.0	2.2	-2.0	0.0	0.0	4.8	0.0	12.1	2.0

Line Source, ISO 9613, Name: "Front End Loader", ID: "S1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
237	560369.26	4811000.84	2.50	2	D	A	82.0	3.6	0.0	0.0	0.0	66.9	2.4	-2.1	0.0	0.0	5.3	0.0	35.1	-22.0
237	560369.26	4811000.84	2.50	2	N	A	77.2	3.6	0.0	0.0	0.0	66.9	2.4	-2.1	0.0	0.0	5.3	0.0	35.1	-26.7
237	560369.26	4811000.84	2.50	2	E	A	77.2	3.6	0.0	0.0	0.0	66.9	2.4	-2.1	0.0	0.0	5.3	0.0	35.1	-26.7
241	560343.08	4810981.09	2.50	1	D	A	82.0	3.2	0.0	0.0	0.0	64.5	1.9	-1.8	0.0	0.0	4.8	0.0	4.6	11.3
241	560343.08	4810981.09	2.50	1	N	A	77.2	3.2	0.0	0.0	0.0	64.5	1.9	-1.8	0.0	0.0	4.8	0.0	4.6	6.5
241	560343.08	4810981.09	2.50	1	E	A	77.2	3.2	0.0	0.0	0.0	64.5	1.9	-1.8	0.0	0.0	4.8	0.0	4.6	6.5
246	560353.42	4811054.97	2.50	0	D	A	82.0	5.8	0.0	0.0	0.0	65.7	2.1	-2.0	0.0	0.0	5.0	0.0	0.0	16.9
246	560353.42	4811054.97	2.50	0	N	A	77.2	5.8	0.0	0.0	0.0	65.7	2.1	-2.0	0.0	0.0	5.0	0.0	0.0	12.2
246	560353.42	4811054.97	2.50	0	E	A	77.2	5.8	0.0	0.0	0.0	65.7	2.1	-2.0	0.0	0.0	5.0	0.0	0.0	12.2
248	560362.99	4811049.28	2.50	0	D	A	82.0	12.7	0.0	0.0	0.0	65.6	2.1	-2.0	0.0	0.0	4.8	0.0	0.0	24.1
248	560362.99	4811049.28	2.50	0	N	A	77.2	12.7	0.0	0.0	0.0	65.6	2.1	-2.0	0.0	0.0	4.8	0.0	0.0	19.4
248	560362.99	4811049.28	2.50	0	E	A	77.2	12.7	0.0	0.0	0.0	65.6	2.1	-2.0	0.0	0.0	4.8	0.0	0.0	19.4
258	560378.88	4811039.83	2.50	0	D	A	82.0	12.7	0.0	0.0	0.0	65.5	2.1	-2.1	0.0	0.0	4.8	0.0	0.0	24.4
258	560378.88	4811039.83	2.50	0	N	A	77.2	12.7	0.0	0.0	0.0	65.5	2.1	-2.1	0.0	0.0	4.8	0.0	0.0	19.6
258	560378.88	4811039.83	2.50	0	E	A	77.2	12.7	0.0	0.0	0.0	65.5	2.1	-2.1	0.0	0.0	4.8	0.0	0.0	19.6
267	560381.36	4811038.36	2.50	2	D	A	82.0	11.0	0.0	0.0	0.0	66.6	2.3	-2.2	0.0	0.0	4.8	0.0	12.3	9.1
267	560381.36	4811038.36	2.50	2	N	A	77.2	11.0	0.0	0.0	0.0	66.6	2.3	-2.2	0.0	0.0	4.8	0.0	12.3	4.4
267	560381.36	4811038.36	2.50	2	E	A	77.2	11.0	0.0	0.0	0.0	66.6	2.3	-2.2	0.0	0.0	4.8	0.0	12.3	4.4
282	560380.58	4811038.83	2.50	2	D	A	82.0	9.4	0.0	0.0	0.0	67.4	2.5	-2.3	0.0	0.0	4.8	0.0	34.3	-15.4
282	560380.58	4811038.83	2.50	2	N	A	77.2	9.4	0.0	0.0	0.0	67.4	2.5	-2.3	0.0	0.0	4.8	0.0	34.3	-20.2
282	560380.58	4811038.83	2.50	2	E	A	77.2	9.4	0.0	0.0	0.0	67.4	2.5	-2.3	0.0	0.0	4.8	0.0	34.3	-20.2
284	560380.22	4811009.25	2.50	0	D	A	82.0	14.0	0.0	0.0	0.0	65.0	2.0	-2.1	0.0	0.0	5.6	0.0	0.0	25.5
284	560380.22	4811009.25	2.50	0	N	A	77.2	14.0	0.0	0.0	0.0	65.0	2.0	-2.1	0.0	0.0	5.6	0.0	0.0	20.7
284	560380.22	4811009.25	2.50	0	E	A	77.2	14.0	0.0	0.0	0.0	65.0	2.0	-2.1	0.0	0.0	5.6	0.0	0.0	20.7
293	560374.98	4811005.22	2.50	2	D	A	82.0	10.8	0.0	0.0	0.0	66.1	2.2	-2.1	0.0	0.0	4.8	0.0	12.1	9.7
293	560374.98	4811005.22	2.50	2	N	A	77.2	10.8	0.0	0.0	0.0	66.1	2.2	-2.1	0.0	0.0	4.8	0.0	12.1	4.9
293	560374.98	4811005.22	2.50	2	E	A	77.2	10.8	0.0	0.0	0.0	66.1	2.2	-2.1	0.0	0.0	4.8	0.0	12.1	4.9
312	560374.00	4811004.47	2.50	2	D	A	82.0	9.8	0.0	0.0	0.0	67.0	2.4	-2.2	0.0	0.0	5.2	0.0	34.8	-15.3
312	560374.00	4811004.47	2.50	2	N	A	77.2	9.8	0.0	0.0	0.0	67.0	2.4	-2.2	0.0	0.0	5.2	0.0	34.8	-20.1
312	560374.00	4811004.47	2.50	2	E	A	77.2	9.8	0.0	0.0	0.0	67.0	2.4	-2.2	0.0	0.0	5.2	0.0	34.8	-20.1
397	560388.56	4811026.04	2.50	0	D	A	82.0	12.7	0.0	0.0	0.0	65.3	2.0	-2.2	0.0	0.0	5.0	0.0	0.0	24.5
397	560388.56	4811026.04	2.50	0	N	A	77.2	12.7	0.0	0.0	0.0	65.3	2.0	-2.2	0.0	0.0	5.0	0.0	0.0	19.7
397	560388.56	4811026.04	2.50	0	E	A	77.2	12.7	0.0	0.0	0.0	65.3	2.0	-2.2	0.0	0.0	5.0	0.0	0.0	19.7
405	560336.60	4810977.39	2.50	0	D	A	82.0	11.1	0.0	0.0	0.0	64.3	1.9	-1.5	0.0	0.0	4.8	0.0	0.0	23.6
405	560336.60	4810977.39	2.50	0	N	A	77.2	11.1	0.0	0.0	0.0	64.3	1.9	-1.5	0.0	0.0	4.8	0.0	0.0	18.9
405	560336.60	4810977.39	2.50	0	E	A	77.2	11.1	0.0	0.0	0.0	64.3	1.9	-1.5	0.0	0.0	4.8	0.0	0.0	18.9
408	560336.60	4810977.39	2.50	1	D	A	82.0	11.1	0.0	0.0	0.0	64.8	2.0	-1.6	0.0	0.0	4.8	0.0	1.4	21.7
408	560336.60	4810977.39	2.50	1	N	A	77.2	11.1	0.0	0.0	0.0	64.8	2.0	-1.6	0.0	0.0	4.8	0.0	1.4	16.9
408	560336.60	4810977.39	2.50	1	E	A	77.2	11.1	0.0	0.0	0.0	64.8	2.0	-1.6	0.0	0.0	4.8	0.0	1.4	16.9
413	560338.27	4810978.30	2.50	1	D	A	82.0	9.6	0.0	0.0	0.0	64.5	1.9	-1.9	0.0	0.0	5.2	0.0	4.9	16.9
413	560338.27	4810978.30	2.50	1	N	A	77.2	9.6	0.0	0.0	0.0	64.5	1.9	-1.9	0.0	0.0	5.2	0.0	4.9	12.1
413	560338.27	4810978.30	2.50	1	E	A	77.2	9.6	0.0	0.0	0.0	64.5	1.9	-1.9	0.0	0.0	5.2	0.0	4.9	12.1
420	560334.52	4810976.26	2.50	2	D	A	82.0	9.1	0.0	0.0	0.0	65.0	2.0	-2.0	0.0	0.0	4.8	0.0	11.7	9.6
420	560334.52	4810976.26	2.50	2	N	A	77.2	9.1	0.0	0.0	0.0	65.0	2.0	-2.0	0.0	0.0	4.8	0.0	11.7	4.8
420	560334.52	4810976.26	2.50	2	E	A	77.2	9.1	0.0	0.0	0.0	65.0	2.0	-2.0	0.0	0.0	4.8	0.0	11.7	4.8

# **Appendix E**

## **Manufacturer Sound Level Specifications**

# 973D

Track Loader

GHD:Source S01

**CATERPILLAR**<sup>®</sup>



## Engine

Engine Model	Cat <sup>®</sup> C9 ACERT <sup>™</sup>	
Net Power – SAE J1349	196 kW	263 hp

## Weights

Operating Weight	28 058 kg	61,857 lb
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- Operating Weight: Includes coolant, lubricants, 100% fuel tank, General Purpose Bucket with long bolt-on teeth and segments and 75 kg/165 lb operator.

## Buckets

Capacity – General Purpose	3.21 m <sup>3</sup>	4.2 yd <sup>3</sup>
Capacity – Multi-Purpose	3.05 m <sup>3</sup>	3.92 yd <sup>3</sup>

- Bucket capacities are with long bolt-on teeth and segments.

## Ripper Specifications

Type	Parallelogram	
Number of pockets	3	
Overall Width/Beam	2200 mm	86.6 in
Shank cross section	74 × 175 mm 2.9 × 6.9 in	
Ground Clearance	888 mm	34.96 in
Penetration	397 mm	15.6 in
Ripping Width	1840 mm	72.4 in
Penetration Force at ground level	100 kN	22,500 lb
Cylinders – Bore	130 mm	5.1 in
Cylinders – Stroke	236 mm	9.3 in
Addition to Machine Length due to Ripper (in Transportation Position)	586 mm	23.1 in
Ramp Angle	28.5 Degrees	
Ripper weight (with 3 shanks)	1700 kg	3,747.8 lb

## Standards

ROPS/FOPS	ROPS/FOPS
Brakes	Brakes
Cab	Cab

- ROPS (Rollover Protective Structure) offered by Caterpillar for the machine meets ROPS criteria SAE J1040 MAY94, ISO 3471-1994.
- FOPS (Falling Object Protective Structure) offered by Caterpillar for the machine meets FOPS criteria SAE J/ISO3449 APR98 level II, ISO 3449-1992 Level II.
- Brakes meet the standard ISO 10265-2008.
- The operator sound exposure Leq (equivalent sound pressure level) measured according to the work cycle procedures specified in ANSI/SAE J1166 OCT 98 is 83 dB(A), for cab offered by Caterpillar, when properly installed and maintained and tested with the doors and windows closed.
- Hearing protection is recommended when operating with open operator station and cab (when not properly maintained or doors/windows open) for extended periods or in noisy environment.
- The exterior sound pressure level for the standard machine measured at a distance of 15 meters (49.2 ft) according to the test procedures specified in SAE J88 APR95, mid-gear-moving operation, is 85 dB(A).
- The labeled sound power level is 112 dB(A) measured according to the test procedure and conditions specified in 2000/14/EC.
- The operator sound exposure Leq (equivalent sound pressure level) measured according to the work cycle procedures specified in ISO 6396:2008 is 77 dB(A) and in ISO 6394:2008 is 74 dB(A), for cab offered by Caterpillar, when properly installed and maintained and tested with the doors and windows closed.

← S01

## DX225LC-5 Crawler Excavator

[Request a Quote](#)

### Specifications for DX225LC-5 Crawler Excavator

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#### Engine

RATED FLYWHEEL POWER (GROSS)	166.3 hp @ 1,800 rpm
RATED HORSE POWER (NET)	162.1 hp @ 1,800 rpm
MAX. TORQUE (NET)	557 lbf-ft @ 1,400 rpm
ENGINE EMISSIONS TIER (EPA)	T4

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#### Hydraulic System

MAIN PUMP: DISPLACEMENT	7 in <sup>3</sup> /rev
CONTROL VALVE: RELIEF VALVE PRESSURE (NORMAL)	4,694 psi
CONTROL VALVE: RELIEF VALVE PRESSURE (BOOST)	4,978 psi
MAIN PUMP: MAX. FLOW RATE (EACH)	54.55 gal/min
MAIN PUMP: MAIN RELIEF PRESSURE	--

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#### Undercarriage

UPPER ROLLERS: QUANTITY PER SIDE	2
LOWER ROLLERS: QUANTITY PER SIDE	8
TRACK LENGTH	14' 7"
TRACK LINK: TRACK GAUGE	7' 10"

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#### Swing Mechanism

SWING PERFORMANCE: MAX SWING TORQUE	60757 lbf-ft
SWING PERFORMANCE: MAX SWING SPEED (AT EFFICIENCY)	10.9 rpm

ENGINE COOLANT	10.14 gal
ENGINE OIL	7.13 gal
HYDRAULIC TANK	51.51 gal

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## Environment

NOISE LEVEL: GUARANTEED SOUND POWER LEVEL	103 dBA
NOISE LEVEL: OPERATOR	70 dBA

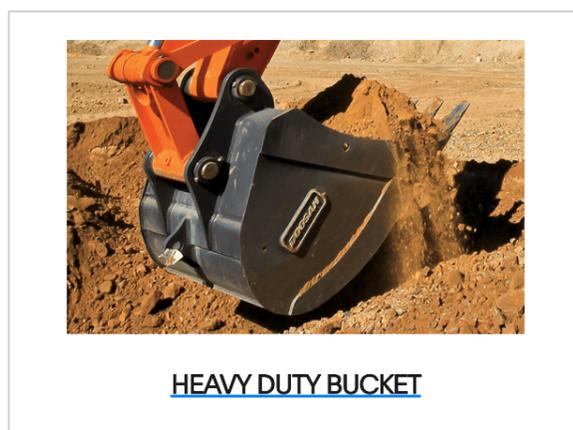
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← **S04**

## Lift Capacity

LIFTING CAPACITY OVER FRONT @ HORIZONTAL DISTANCE - 10 FT ABOVE GROUND	14,660 lb @ 20 ft
LIFTING CAPACITY OVER FRONT @ HORIZONTAL DISTANCE - GROUND LEVEL	16,130 lb @ 20 ft
LIFTING CAPACITY OVER FRONT @ HORIZONTAL DISTANCE - 10 FT BELOW GROUND	15,810 lb @ 20 ft

## Attachments



[View All](#)



455 Phillip Street, Unit 100A  
Waterloo, Ontario N2L 3X2  
Canada  
www.ghd.com



Our ref: 11210029-LTR-2

December 17, 2021

Ms. Lynn Banks  
Development and Legislative Coordinator  
Township of Puslinch  
7404 Wellington Road 34  
Puslinch, Ontario  
N0B 2J0

Drinking Water Threat Disclosure Report  
6678 Wellington Road 34, Township of Puslinch, Ontario

Dear Ms. Banks

## 1. Introduction

### 1.1 Purpose of the Report

As requested by the Township of Puslinch, GHD has prepared a Drinking Water Threat Disclosure Report on behalf of 2374868 Ontario Inc. (Site Owner/Operator), for the hydrovac processing facility operations located at the above-referenced Site, in support of a Zoning By-Law Amendment Application. This letter provides the Drinking Water Threat Disclosure Report.

According to the County of Wellington Official Plan, a Drinking Water Threat Disclosure Report is defined as a report required pursuant to the County of Wellington Official Plan which discloses whether or not any of prescribed drinking water threats identified in Section 1.1 of Ontario Regulation 287/07 pursuant to the Clean Water Act are expected to occur on a property that is the subject of a development application or as a condition of Site Plan control for the development, redevelopment or Site alteration of non-residential uses within a Wellhead Protection Area, Intake Protection Zone or Issue Contributing Area as may be required pursuant of the official plans of the County and other Municipalities.

It is noted that the hydrovac operations are conducted in accordance with accepted practices, current Ontario Ministry of the Environment, Conservation and Parks (MECP) Environmental Compliance Approval requirements, and Excess Soil Regulation requirements that have been reviewed and approved by the MECP. These practices are documented in the Design and Operations Report and the application for an ECA submitted to the MECP in December 2020. The practices include active avoidance of conducting hydrovac operations at sites that may have impacted soil and years of extensive surface water, soil and groundwater testing that demonstrate that all fill received and used for rehabilitation at the Site meets Table 1 (Background) Standards, all surface water meets Drinking Water Standards, and all groundwater meets Table 2 (Potable)

Standards. Additionally, no waste as defined by the Township of Puslinch by-law definition is received at the Site and only fill/soil that meets Table 1 (Background) Standards is used for aggregate pit rehabilitation.

The Drinking Water Threat Disclosure Report is to disclose proposed management programs associated with the use of chemicals at the Site, including risk management/reduction measures, emergency response plans, spill response/prevention plans, employee awareness training, best management practices and monitoring programs.

## **1.2 Property and Site Location**

The Property is legally described as Lot 8, Concession 3 in Wellington County and consists of a 100-acre property. The northern two thirds of the Property is zoned as Extractive (EXI) and the southern one third is zoned as Agricultural (A). The Site within the Property is located on an approximate 31,000 square meter (m<sup>2</sup>) portion of the EXI zoned parcel and includes the operations necessary to support the hydrovac operations. The current zoning allows some of the Site operations. A Zoning By-Law Amendment Application is being submitted to the Township of Puslinch.

There are two water supply wells within the Property, the EXI and the A supply wells.

A Property and Site location map is presented on Figure 1, and in more detail on Figure 2.

An aerial photo showing the Property and features around the property is shown on Figure 3.

## **1.3 Adjacent Land Use and Nearby Drinking Water Sources**

The adjacent property land use to the west is an operating aggregate extraction pit, to the north is agricultural land, to the east is forested conservation land, and to the south are residential and agricultural lands.

Water use within the area is limited to private wells for domestic, agricultural, and industrial use. Most of the private wells are screened either in the deep overburden and more commonly in the bedrock.

The Property is located approximately 4.7 km and 3.8 km northeast of the City of Cambridge Pinebush and Hespeler well fields, respectively. As shown on Figure 4, the Property is located within the combined Zone D wellhead protection area (WHPA) from these two well fields. These two well fields obtain water supplies from the Guelph Formation. Also, as shown on Figure 4, the property is located within a medium/moderate intrinsic vulnerability area.

## **1.4 Site Environmental Investigations**

There have been many years of soil, surface water and groundwater monitoring that have been completed at the Site and provided to the Township of Puslinch and MECP which supports the conclusion of no potential or actual impact from Site operations to nearby water supplies.

A Hydrogeological Impact Assessment (HIA) was prepared by GHD in December 2020, on behalf of the Site Operators and was submitted to the MECP in support of an Environmental Compliance Approval (ECA) (Waste Processing).

The HIA consisted of the following activities, completed between September and December 2020 specific to the impact assessment to groundwater supplies:

- Installation of three monitoring wells (MW1-20 - downgradient of Site operations, MW2-20 - downgradient of Site operations, and MW3-20 - upgradient of Site operations) for the sole purpose of the HIA. The wells were installed to depths between 12.2 metres (m) and 14.3 m bgs (elevations of 307.3 m above mean sea level [AMSL] and 308.2 m AMSL) to screen the water table (shallowest groundwater regime). The three monitoring wells defined the stratigraphy, and depth to the groundwater table.
- Horizontal and vertical survey of the three monitoring wells. The wells were surveyed for vertical control with respect to elevation AMSL.

- Hydraulic monitoring to establish the depth to the groundwater table and consequently groundwater elevations and groundwater flow patterns.
- Collection of 2 rounds of groundwater samples (November and December 2020) following purging/development of the three monitoring wells. The groundwater samples were analyzed for general chemistry, total and dissolved metals, VOCs, SVOCs/PAHs/, TPH (F1 to F4) and oil and grease.
- Hydraulic conductivity calculation. Hydraulic conductivity was determined by completing single well response tests (slug tests) in the three monitoring wells.
- Private well survey. A desktop review and limited physical confirmation of a private well survey was completed in September 2020. Due to the Covid-19 pandemic restrictions, a more intrusive physical well confirmation was not prudent at this time.
- Preparation of a HIA Report to define the geologic and hydrogeologic framework and investigate the groundwater quality with the ultimate purpose of evaluating potential impacts and risk to nearby groundwater users.

The HIA concluded that the Site operations are not impacting either shallow or deep groundwater resources.

As indicated in Section 1.3, there are two water supply wells within the Property, the EX1 and the A supply wells, both of which are deeper wells. The EX1 supply well obtains groundwater from a deep overburden (gravel) water-bearing zone or aquifer at a depth of 33.8 m bgs. The A supply well obtains water from the bedrock aquifer from a depth of 24.1 m to a depth greater than 29.6 m bgs.

The Site Operator has been collecting groundwater samples from the two active Site wells (EX1 and A supply wells) since 2014, and specifically on three occasions in 2020 (two in July and one in August 2020).

The Site Operator has been conducting stockpiled soil sampling on a weekly basis since 2014.

The Site Operator has been conducting pond surface water sampling on a weekly basis since 2014.

Many years of soil, surface water and groundwater sampling demonstrate that the Site operations do not provide potential impacts to groundwater resources, as described in Section 3.

In October 2021 some comments were received from the Township of Puslinch's consultant regarding the HIA and responses to the comments were provided in November, 2021.

## 2. Site Operations

A Design and Operations (D&O) Report was prepared by GHD on behalf of the Site Operator describes the hydrovac processing facility operations. The D&O Report was submitted to MECP in December 2020 in support of the ECA (Waste Processing).

The description of the Site operations provided below were documented in the D&O Report.

The Site receives soil mixed with water (liquid soil) from hydrovac operations conducted by Site operators and trucks at multiple sites. The hydrovac trucks work throughout southern Ontario where liquid soil is collected from utility, municipal and commercial sites to ensure that utility strikes and damage do not occur during intrusive work (e.g., utility and roadwork). No hydrovac operations are conducted at environmental or other Sites with known soil or groundwater impacts. Liquid soil loads that may be impacted (e.g., determined by Site information, visual inspection and odours) are sent directly to a MECP permitted treatment or disposal facility and returned to the Site after all liquid soil has been removed. The soil water materials that return to Site are placed on the ground surface, water drains off via gravity, and the dry soil is sampled for chemical analysis to confirm that it is acceptable for use at receiving sites.

The majority of the stormwater runoff from the Site and the drainage from the soil stockpiles is collected in a vegetated drainage swale that discharges to a stormwater management pond located in the southwest corner

of the extractive zoned parcel. There is no outlet from the pond, some water is lost through evapotranspiration and the remainder infiltrates to Site groundwater. Stormwater management is included in the hydrovac operations.

As described in Sections 1.3 and 1.4, two potable wells are present on the Property. One potable well is located in the EXI zoned portion of the property and the other is located in the Agricultural zoned portion of the property. The locations of these two water supply wells are shown on Figure 2.

The supply well located within the EXI zoned portion of the Property is designated as the "EXI" water supply well is used primarily to fill hydrovac trucks for use at work sites. This water is largely returned to the Site so there are no significant impacts to the hydrogeological capacity.

The supply well located within the Agricultural zoned portion of the Property is designated as the agricultural (livestock) "A" water supply well.

## 2.1 Receiving Operations

The Site receives a maximum of 250 tonnes of liquid soil per day which is typically comprised of 150 tonnes of water and 100 tonnes of soil. All liquid soil is unloaded for drying in the designated stockpile area. A maximum of 10 weeks of accumulated dry soil is stored at the Site at any one time (total 5,000 tonnes).

## 2.2 Soil Processing Operations

Soil is processed in the following steps:

- Trucks arrive on-Site and offload in the designated soil management area (approximately 50 m in length by 10 m in width) and based on 5 m in height, a maximum 2,500 CM storage capacity (5,000 tonnes based on 2 tonnes/CM).
- Material is allowed to dewater for a few days to a week until the material has dried sufficiently to excavate and place in stable stockpiles. Water gravity drains from stockpiled soil and is directed to the drainage swale.
- The Site uses a system of 10 stockpile locations to allow for tracking and processing.
- Based on sampling results, dried soil is transported to appropriate receiving Sites.

No more than 10 weeks of accumulated soil are stockpiled at the Site at any one time.

The dried soil is suitable for use as pit rehabilitation material under the MNR approved Pit Rehabilitation Plan for the on-Site/adjacent pit. Some small quantities of aggregate or topsoil product also are generated from some hydrovac loads and are separated using a trommel screen for recycling or beneficial reuse.

Soil stockpiles are limited to heights which are not a visual nuisance to surrounding property owners or structurally unstable. Stockpiled soils remain in the same stockpile until soil sampling has been completed and analytical laboratory results are received. There are three types of soil stockpiles present at any one time:

1. Un-sampled stockpiles
2. Sampled stockpiles, analytical data not yet received
3. Sampled stockpiles, analytical data received

Site soil management generally conservatively and voluntarily follow the O. Reg. 409/19 (Excess Soil) requirements. Accurate records of the quantity of material received from "receiving sites" and the material quality based on sampling results are documented using Tracking Record forms/database Records include information regarding material source, hauling quantity, soil tracking, analyses, and final disposition.

All applications and related reports, bills of lading, logs of material accepted at the Site, records of material approved for acceptance at the site, etc. will be retained at the Site.

## 2.3 Soil Characterization

Stockpile soil sampling has been conducted on a weekly basis since 2014 to characterize soil quality. In May 2020, weekly sampling was continued with an expanded parameter list. Soil sampling presently (2021) continues on a weekly basis. Soil samples are submitted to a MECP accredited analytical laboratory for the following parameter analyses:

- O. Reg. 153/04 Metals and Inorganics
- Volatile organic compounds (VOCs)
- Petroleum Hydrocarbons (PHCs) F1 to F4
- Semi-VOCs (SVOCs)
- Polychlorinated Biphenyls (PCBs)

The analytical data is first compared to MECP Table 1<sup>1</sup> Standards. The large majority of soil meets Table 1 Standards and as such is used for rehabilitation of the on-Site/adjacent pit in accordance with the approved Pit Rehabilitation Plan and 2008 Aggregate Resources Act (ARA) policy 6.00.03 (Appendix E).

The typical soil stockpile is about 100 CM or 200 tonnes. In the future and on a voluntary and conservative basis, soil stockpiles will be sampled at a frequency as provided in O. Reg. 153/04 Table 2 Minimum Stockpile Sampling Frequency. It is noted that the Excess Soil regulation sampling and tracking requirements do not come into effect until January 2022 and the regulations do not entirely apply to small soil quantity operations such as the Site operations. The Rules for Soil Management and Excess Soil Standards (MECP, November 2019) also provide guidance on the number of samples to be collected per the size of the stockpile and appropriate laboratory analysis for soil characterization.

The soil stockpile sampling frequency is as follows:

*Table 2.1 Stockpile Soil Sampling (from Table 2 – Schedule E of O. Reg. 153/04)*

Item	Column 1 Stockpile Volume (m <sup>3</sup> )	Column 2 Minimum Number of Samples
1.	≤ 130	3
2.	> 130 to 220	4
3.	> 220 to 320	5

## 2.4 Risk Screening

Risk screening may be considered for soil that has one or more parameter concentrations above MECP Table 1 Standards. The objective of risk screening is to assess the potential human health and ecological risks associated with exposure to elevated parameter concentrations for the specific conditions at the Site or another property. The results of the risk screening will be used to manage the on-Site placement of stockpiled soil material to ensure that exposure to the material does not result in any unacceptable risk for the human and ecological receptors that are or may be present at the Site or other property. The risk screening would include the identification of contaminant of concerns (COCs), an exposure pathway analysis, and the selection/development of risk-based component values (RBCVs) protective of human health and the environment consistent with the general methodology under O. Reg. 153/04. The risk screening is not a formal, comprehensive Risk Assessment that would undergo MECP technical review under O. Reg. 153/04 as a Record of Site Condition (RSC) is not required. However, the risk screening will follow the same methodology and provide similar outcomes as a formal Risk Assessment.

<sup>1</sup> Full Depth Background Site Condition Standards for Residential/ Parkland/ Institutional/ Industrial/ Commercial/ Community Property Use for Coarse Textured Soils, as provided in the Table 1 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011 and updates as issued.

For example, the historic soil sampling conducted indicated some low-level detections of lead, toluene, and a few PAHs at concentrations above the Table 1 Standards. These detections are low and, therefore, unlikely to pose an unacceptable risk to human health or the environment if used for on Property pit rehabilitation or other receiving Sites.

## 2.5 Soil Tracking

Site soil management generally will conservatively and voluntarily follow the O. Reg. 409/19 (Excess Soil) requirements. Accurate records of the quantity of material received from "receiving Sites" and the material quality based on sampling results are documented using Tracking Record forms/database . Records include information regarding material source, hauling quantity, soil tracking, analyses, and final disposition.

All applications and related reports, bills of lading, logs of material accepted at the site, records of material approved for acceptance at the site, etc. will be retained at the Site.

Soil samples will continue to be analyzed for the following parameters:

- SAR and EC
- O. Reg. 153/04 Metals
- VOCs
- PHCs (F1 through F4)
- Any other contaminant of potential concern (COPC)

As per O. Reg. 409/19 since the volume of soil stockpiles are less than 350 CM, no leachate analysis is required. Based on the years of data collected to date which indicated the occasional low-level detection of a few parameters leachate analysis also would not provide any useful additional information regarding soil characterization for disposition or potential environmental impact.

## 2.6 Record Keeping

The majority of the soil meets Table 1 Standards and is placed in the on-Site/adjacent pit rehabilitation area in accordance with the MNRF approved Pit Rehabilitation Plan.

For soil material that is managed by shipment to an off-Site MECP permitted treatment or disposal facility, applicable O. Reg. 406/19 or O. Reg. 347 documentation will be completed. The information to be regularly tracked includes stockpile location, quantity/quality of material, transportation information, and its final location related to beneficial reuse or waste disposal. Off-Site soil disposition documentation will include submission of the analytical data to the site, waste characterization forms that may be required and the Operator will require a written consent of acceptance of the soil prior to shipment.

All tracking records, transport company documentation, documentation sign-off from the reuse Site, daily records and soil analytical data will be retained for a minimum of 7 years.

# 3. Current Environmental Conditions

## 3.1 Physical and Site Setting

The Site is underlain by ice-contact stratified deposits which extend from ground surface to the top of the bedrock. The ice contact-stratified deposits are highly heterogeneous but are generally finer-grained in the north than the south.

The shallowest groundwater flow regime, referred in this report as the water table unit is found at depths between 6 and 11 m.

Groundwater flows horizontally to the south-southwest with an average horizontal hydraulic gradient of 0.02 and a groundwater flow velocity of about 0.03 m/day.

Groundwater flows vertically downwards from the water table unit to the deeper water-bearing overburden unit and bedrock with an average vertical hydraulic gradient of 0.2 and a vertical groundwater flow velocity of 0.03 m/day.

Although there is no persistent aquitard above the aquifers, there is limited potential for impacted soil to be stored at the Site, and the results for soil, surface water, and groundwater data collected historically at the Site for many years all show results below the applicable Ontario Drinking Water Quality Standards (ODWQS), Table 1 Background and Table 2 potable water standards, as described in detail in Section 3.3.

## 3.2 Current Environmental Conditions

The hydrovac process is used to prevent underground utility strikes and protect utilities from damage during utility installation, maintenance, and activities such as infrastructure and road work. The hydrovac operations are conducted for municipalities and utility companies in utility corridors beside and beneath roads and rights of way. Any materials generated from hydrovac operations that are determined to be potentially environmentally impacted are not returned to the Site and are disposed of directly at an off-Site MECP-permitted treatment and disposal facility. Hydrovac operations are not conducted at Sites where there are known environmental impacts (e.g., environmental remediation, industrial and municipal stormwater catch basins).

The water used in the hydrovac trucks comes from a groundwater well on the Property and from municipal potable water sources. Most of this water is returned to the Site and is not waste. The water drains from the soil and discharges to a vegetated ditch then into a storm water management pond where it infiltrates to groundwater and thus is recycled for groundwater recharge and reuse. Weekly testing demonstrates that the water meets MECP Table 2 Standards and, therefore, it meets the standards for potable use.

Liquid soil (water plus dry soil) is by definition waste in accordance with O. Reg. 347 (General Waste Management); this is so that it is appropriately managed to its ultimate end use. However, the liquid soil returned to and managed at the Site is not contaminated. The soil (once clean water drains off) is demonstrated by regular testing to meet MECP Table 1 Standards which are Background Soil (i.e., no levels of contaminants) and as such is not considered as waste but is the same as all non-impacted background soil throughout the province. There are no ashes, garbage, refuse, domestic waste, industrial waste, or municipal waste contained in the hydrovac water and soil mixture that is returned to and managed at the Site.

The Site Operator is committed to operating and maintaining the Site in compliance with all applicable regulations and policies. The has demonstrated this commitment by being an environmental steward of the Site by minimizing impacts to the environment from all operations, sound rehabilitation practices for the placement of clean fill and restoration of the aggregate pit in accordance with the MNR approved Rehabilitation Plan, and good neighbour and community benefit policies.

The hydrovac operations are conducted in accordance with accepted practices, current MECP Environmental Compliance Approval requirements, and Excess Soil Regulation requirements that have been reviewed and approved by the MECP. These practices are documented in Section 2 of this report and in the D&O Report prepared in support of an ECA submitted to the MECP in December 2020. The practices include active avoidance of conducting hydrovac operations at sites that may have impacted soil and years of extensive surface water, soil and groundwater testing (as detailed in the specific responses below) that demonstrate that all fill received and used for rehabilitation at the Site meets Table 1 (Background) Standards, all surface water meets Drinking Water Standards, and all groundwater meets Table 2 (Potable) Standards.

No waste as defined by the Township of Puslinch definition is received at the Site and only fill/soil that meets Table 1 (Background) Standards is used for aggregate pit rehabilitation.

### 3.3 Environmental Sampling and Results

There has been many years of soil, surface water and groundwater sampling at the Site to ensure there no impacts from the operations to the environment.

Below is a discussion of the degree of sampling of soil, surface water and groundwater and the results.

The stockpiled dry soil has been sampled on a regular basis since 2014. The soil sampling results are summarized in Table 1.

As with surface water in the ponds, the sampling results from January 2017 to October 2021 are considered representative of the entire data set (2014-2021). From January 2017 to October 2021, 116 soil samples were collected. The soil results were compared to the Table 1 Standards and there have been infrequent, occasional exceedances of the Standards in a few of the samples. However, soils with Table 1 exceedances are managed according to MNRF Policy. This comprehensive and ongoing data set demonstrates that the large majority of soils meet Table 1 Standards and allow soil to be placed in the former aggregate pit in accordance with the MNRF pit license/approved rehabilitation plan. Occasional soils that exceeded the Table 1 Standards were segregated and transported and disposed of at off-Site MECP permitted treatment and disposal facilities or other appropriate properties or recycling (e.g., aggregate).

Pond surface water sampling has been completed on a regular basis since 2014. From January 2017 to October 2021, 138 surface water samples were collected. The sampling results from 2017 to 2021 are considered representative of the entire data set (2014-2021). The pond surface water results are provided in Table 2.

None of the surface water samples had VOCs, TPH (F1 to F4), or SVOCs/PAHs/BNAs detections above the laboratory RLs (which were set at concentrations lower than the Provincial Water Quality Objectives (PWQOs)/Table 2 Standards). As with the groundwater samples collected from the two groundwater supply wells, the surface water quality data demonstrates that Site operations are not impacting surface water.

Groundwater samples were collected within the shallow overburden water table unit (MW1-20, MW2-20, and MW3-20) in two separate sampling events in 2020. The groundwater quality results are summarized in Table 3.

SVOCs/PAHs were generally not detected above the reporting limits in the water table unit. A few SVOCs/PAHs were sporadically detected above the reporting limits at levels less than 1 microgram per litre ( $\mu\text{g/L}$ ). It is important to note that some of these detections were not repeated in the subsequent groundwater sampling event. The concentrations of all of these detected compounds were below the Ontario Drinking Water Quality Standards (ODWQS) and Table 2 Standards for potable water.

Although sporadic detections of SVOCs/PAHs were detected in the shallow overburden water table unit (MW1-20, MW2-20, and MW3-20), the groundwater samples from the two active Site wells (A and EX1 supply wells completed in the deep overburden and bedrock aquifers) had no VOCs, TPH, PCBs, SVOCs/PAHs/BNAs detected above the laboratory reporting limits (which were all set at levels lower than the ODWQS/Table 2 Standards), as shown in Table 4 and 5, respectively. Groundwater samples have been collected from these wells since 2014, and on three occasions in 2020. All of the historic and recent groundwater quality data also were provided in the HIA and demonstrate that operations at the Site have not impacted groundwater in the vicinity of the Site.

### 3.4 Aboveground Storage Tanks

Three above ground storage tanks are found within the operating envelope. Two diesel tanks are located within a bollard protected area, to the east of the office building. The propane tank is located west of the office building near the pump house and protected by bollards.

### 3.4.1 Clear Diesel Tank

The clear diesel tank is an above ground steel tank for flammable and combustible liquids with integral spill containment. The tank is located to the east of the office building, was manufactured in 2019. It's a double-wall vacuum monitored tank with a normal capacity of 8820L. The clear diesel is used for all road vehicles including the hydrovac trucks. The tank is filled on an as needed basis by a local fuel company. There have been no recordable spills in relation to this tank.

### 3.4.2 Red Dye Diesel Tank

The red dye diesel tank is an aboveground steel tank for flammable and combustible liquids with integral spill containment. The tank is located to the east of the office building, was manufactured in 2019. It's a double-wall vacuum monitored tank with a primary tank normal capacity of 2200L. The red-dye diesel is used for heavy equipment operated on site. The tank is filled on an as-needed basis by a local fuel company. There have been no recordable spills in relation to this tank.

### 3.4.3 Propane Tank

The propane tank is located west of the office building, adjacent to the pump house. The steel above ground tank holds approximately 1000 gallons of propane and is used predominately for heating. The tank does have bollards for protection. The tank is filled on an as-needed basis by a local fuel company. There have been no recordable releases in relation to this tank.

Based on the above and the comprehensive spill management procedures in place as described in Section 4.2, there are no significant concerns regarding potential impacts to groundwater from these tanks.

## 4. Environmental Management Programs

This Section provides a description of the environmental management programs and monitoring program currently in place at the Site for the prevention of any potential impact to the environment.

As noted in 3.2, the Site Operator is committed to operating and maintaining the Site in compliance with all applicable regulations and policies.

The hydrovac operations are conducted in accordance with accepted practices, current MECP Environmental Compliance Approval requirements, and Excess Soil Regulation requirements that have been reviewed and approved by the MECP. These practices are documented in the Design and Operations Report and the application for an ECA submitted to the MECP in December 2020. The practices include active avoidance of conducting hydrovac operations at sites that may have impacted soil and years of extensive surface water, soil and groundwater testing as described herein.

### 4.1 Environmental Emergency and Contingency Plan

The Environmental Emergency and Contingency Plan (E2C) provided in the D&O Report outlines the prevention of, preparedness for, response to, and recovery from an environmental emergency. The E2C Plan will be described in this section of the report.

The E2C Plan contains a notification protocol with names and telephone numbers of person to be contacted, including persons responsible for the Site, the MECP's District Office and Spills Action Centre, the local

municipal Fire Department, the local Municipality, the local Medical Officer of Health, and the Ministry of Labour. Their associated phone numbers are as follows:

Fire, Police, Ambulance	911 or 0
Owner of Facility, Frank Ertl	519-658-5023
MECP Spills Action Centre (SAC)	1 800 268 6060
Municipality of Waterloo	519 575 4400.
Medical Officer of Health- Public Health Waterloo	519 575 4608
Ministry of Labour	416 326 7600

The E2C Plan provides an organized set of procedures for responding to unexpected Site Conditions. Communication.

Operators working at the Site have a cellular phone to use in the event of an emergency.

There is an air horn located on Site, which would be used to signal an emergency to staff.

## 4.2 Spills

As per the above, the Site accepts only hydrovac liquid soil. If liquid soil is inadvertently released at the Site outside of the Soil Management Area, then the material is vacuumed up and/or excavated and placed in the Soil Management Area. It is important to note that the hydrovac trucks are not fueled at the Site and routine and unscheduled truck maintenance also is conducted at qualified off-site facilities.

Vehicle and earth moving equipment may occasionally have fuel and oil spills. These types of spills are expected to be infrequent, involve only small quantities and be readily contained and cleaned up using hydrovac trucks and excavation equipment on site. Fuel and oil material spills, upsets, and fires will be reported to the MECP's Spill Action Centre or local Fire Department.

A spill kit is available on Site at all times. It is located in an area accessible to all staff members. The spill kits in the building is inspected as part of the monthly health and safety inspection. Missing, lost, or used kits are replaced.

All hydrovac trucks also are equipped with spill kits. A spill kit is available and is located in an area accessible to all staff. The spill kit is regularly inspected and missing, lost or used kits are replaced.

## 4.3 Fire

The building is primarily constructed of concrete and steel materials.

Fire extinguishers are located at each corner of the building and on every piece of mobile equipment. Fire extinguishers are inspected monthly and recharged annually in accordance with the Ontario Building Code. If a fire in the building cannot be easily extinguished with the available fire extinguishers, the building would be evacuated, and the fire department notified.

The burning of any material at the Site is prohibited. Facility employees recognize fires by detecting elevated temperatures, smoke, smell and/or open flame. In case of fire the following steps will be taken:

- Move to an isolated area or muster point
- Call 911 or 0
- Sound the fire alarm and attempt to shut down any equipment, if possible, to do safety
- Provide First Aid as needed
- Attempt to extinguish the fire, if possible, to do safety

## **4.4 Severe Storms**

Severe storms may include intense rainfall, extreme winds, electrical storms, or large snowfalls. Before and during such events, Site operations are planned to be reduced or cease and personnel would take shelter if the storm is severe enough to cause unsafe conditions.

During storm events employees stop work if they cannot work safely. Management advises of additional actions and when it is safe to work again.

## **4.5 Medical Emergencies**

Personnel injury could occur at the Facility. If there is an emergency, first aid will be given onsite by trained staff and the employee transported to a clinic or hospital. An Ambulance can be called at 911.

## **4.6 Closure of Waste Disposal Sites**

Waste that does not meet the criteria of the Site are sent directly to a licensed MECF disposal or treatment facility. If the designated waste disposal facility is closed, the Site makes alternate arrangements with another licensed MECF disposal or treatment facility. If an alternate disposal option cannot be found, the material is offloaded at the job site.

## **4.7 Inspections and Maintenance**

The Site features and operations are routinely inspected by operators on a daily basis as detailed in the D&O Report. Deficiencies detected during these regular inspections are promptly corrected and for significant deficiencies a written record of the inspections is maintained at the Site, including (as a minimum) the following:

- a) The name, title, and signature of trained personnel conducting the inspection
- b) The date and time of the inspection
- c) A list of all equipment and Site features inspected and deficiencies observed
- d) Recommendations for remedial action to be undertaken

Daily visual observations are conducted of the following areas to ensure the Site is secure and that there are not off-site impacts such as dust, litter, noise, vermin, vectors, odour, and traffic:

- a) Access road
- b) Loading/unloading area(s)
- c) Storage area(s)
- d) Security features

Regular inspections of the surface water management areas also are required to ensure proper operation and identify any maintenance issues as provided for in the Stormwater Management Plan, including the following:

- Grading to allow proper drainage
- Removal of accumulated sediment in the swale and pond
- Maintain stable swale and pond slopes, banks, and vegetation

## **4.8 Staff Training**

Drivers are trained in evaluating sites prior to hydrovacating and checking loads for unacceptable wastes during hydrovacating operations.

Operators and staff are trained with respect to the following as appropriate for their job function:

- a) The D&O Report and ECA requirements.
- b) Site operation and management.
- c) Shipping, BOL and manifesting procedures.
- d) The Site plan and location of relevant equipment, including that for emergencies and spills.
- e) An outline of the responsibilities of Site personnel including roles and responsibilities during emergencies and spills.
- f) Spill Prevention, Control, and Environmental Emergency and Contingency (E2C) Plan.
- g) Any environmental and occupational health and safety concerns pertaining to the waste to be processed.
- h) Procedures for the control of nuisance conditions.
- i) Emergency first-aid information.
- j) Relevant waste management legislation and regulations, including the Environmental Protection Act (EPA) and Ontario Regulation 347.
- k) Information recording procedures.
- l) Site Inspection procedures.
- m) Procedures for recording and responding to public complaints.

A written record will be maintained at the Site, which will include (as a minimum) the following (Appendix H):

- a) The date of training
- b) The name and signature of the person who has been trained
- c) A description of the training provided

Senior staff members supervising operations will have all of the above noted training as well as any other training required by the Applicant or the Province of Ontario.

## **4.9 Complaint Procedure**

The Site Operator maintains a record at the Site containing detailed complaint and follow up information.

The records are retained for five years at the Site.

## **4.10 Annual Report**

By the end of February of each year, an annual report is prepared and submitted to the District Manager covering the previous calendar year. The report includes, as a minimum, the following information:

- i) A detailed monthly summary of the type and quantity of all materials received and transported from the Site.
- ii) Environmental and operational problems that could negatively impact the environment, encountered during the operation of the Site and during the Facility inspections, and any mitigated actions taken.
- iii) A statement as to compliance with ECA Conditions.
- iv) Recommendations to minimize environmental impacts from the operation of the Site and to improve Site operations and monitoring programs in this regard.

## **4.11 Disruption of Shipment or Facility Operation**

If the Site cannot operate, collection vehicles are diverted to other nearby transfer stations. Similarly, if the processing facilities used as disposal sites cannot receive transfer trailers, the trailers are diverted to other approved disposal sites.

If end markets materials recovered at the Facility (e.g., topsoil, gravel, sand), reach capacity, these materials are temporarily stored onsite. Once the storage capacity is met, alternative receivers are obtained, or alternative transfer locations are sought, and the Site will cease to receive materials.

At no time are the approved storage limits exceeded, and every effort is made to clear the offloading/stockpile area in a timely fashion.

## 4.12 Closure Plan

Should the Site no longer be used as a waste processing facility, the Site will be decommissioned prior to a change in use. The decommissioning procedure is as follows:

- All soil will be spread/backfilled on the Property or shipped to other properties for beneficial reuse as determined by the management provisions provided in this report.
- Any waste will be removed by a MECP permitted waste hauler to a permitted disposal facility.
- All equipment will be removed from the Site.
- Exterior areas of the Site will be cleaned of any litter.

All documentation pertaining to material types and quantities will be completed and organized, as necessary.

## 5. Monitoring Program

Currently soil and surface water sampling are conducted on a weekly basis.

Groundwater levels be monitored in MW1-20, MW2-20, and MW3-20 quarterly.

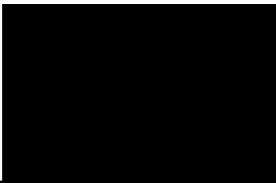
The monitoring program will include groundwater sampling conducted quarterly at the same monitoring wells (MW1-20, MW2-20, and MW3-20) and yearly at the two supply on Site wells. The groundwater sampling locations are shown on Figure 5. Groundwater quality will be monitored for SVOCs, PAHs, VOCs, TPH and metals.

The monitoring program will include at a minimum monthly surface water sampling (Note: already done at a weekly frequency).

After two years of monitoring, a monitoring report will be prepared by a Qualified Professional which will provide a review of the data, the soil stockpiling data, an assessment of the potential for environmental impact and an opinion on whether continued monitoring is necessary.

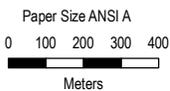
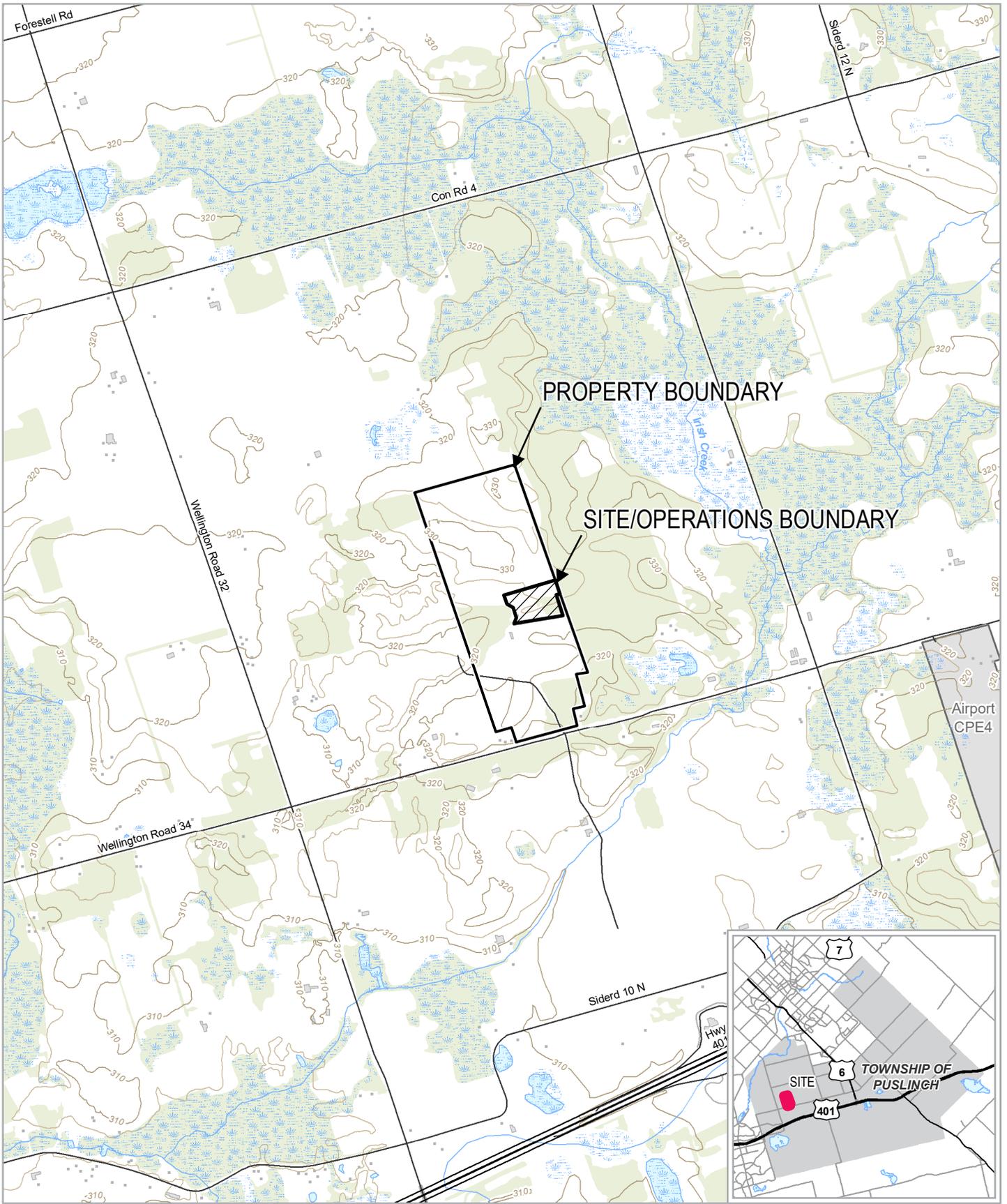
As noted above, soil and surface water sampling is currently ongoing, and the groundwater monitoring program will start upon issuance of final ECA.

Regards



**Gary Lagos**  
Lead Scientist

+1 519 340-4225  
Gary.Lagos@ghd.com



Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983 CSRS  
 Grid: NAD 1983 CSRS UTM Zone 17N

2374868 ONTARIO INC.  
 6678 WELLINGTON ROAD 34,  
 WELLINGTON COUNTY, ONTARIO

Project No. 11210029  
 Revision No. -  
 Date Dec 6, 2021

**SITE LOCATION MAP**

**FIGURE 1**

Data source: WWIS, 2020. Ontario Ministry of the Environment (Accessed August, 2020); Imagery Google 2020. Capture date: 7/Jul/2018



2374868 ONTARIO INC.  
 6678 WELLINGTON ROAD 34  
 WELLINGTON COUNTY, ONTARIO

Project No. 11210029  
 Date December 2021

SITE FEATURES

FIGURE 2



- LEGEND**
- Regulation Limit (GRCA)
  - Regulation Watercourse (GRCA)
  - Regulation Waterbody (GRCA)
  - Wetland (GRCA)
  - Floodplain (GRCA)
    - Engineered
    - Estimated
    - Approximate
    - Special Policy Area
  - Slope Valley (GRCA)
    - Steep
    - Oversteep
    - Steep
  - Slope Erosion (GRCA)
    - Oversteep
    - Toe
  - Lake Erie Flood (GRCA)
  - Lake Erie Shoreline Reach (GRCA)
  - Lake Erie Dynamic Beach (GRCA)
  - Lake Erie Erosion (GRCA)
  - Parcel - Assessment (MPAC/MNRP)

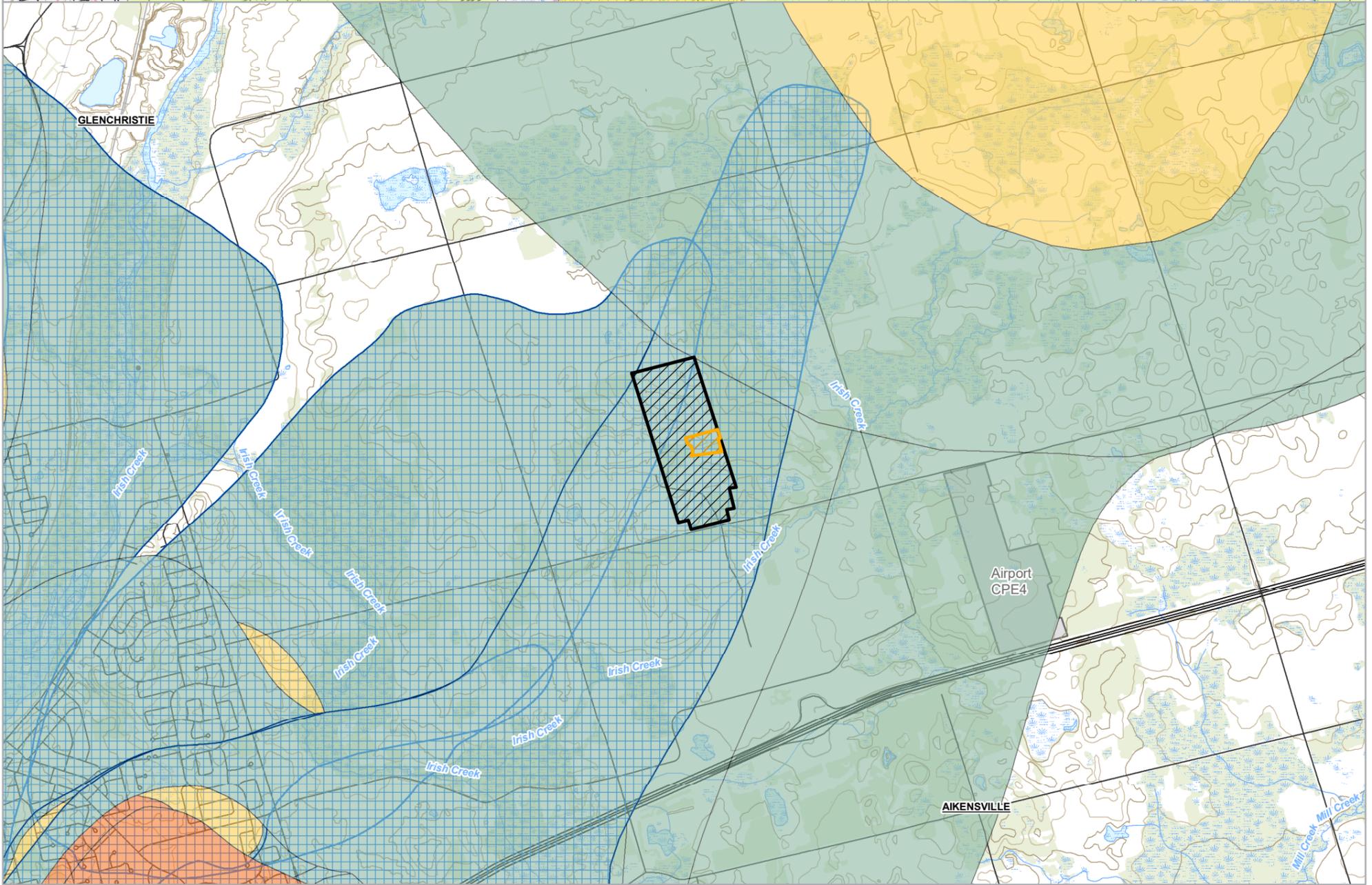
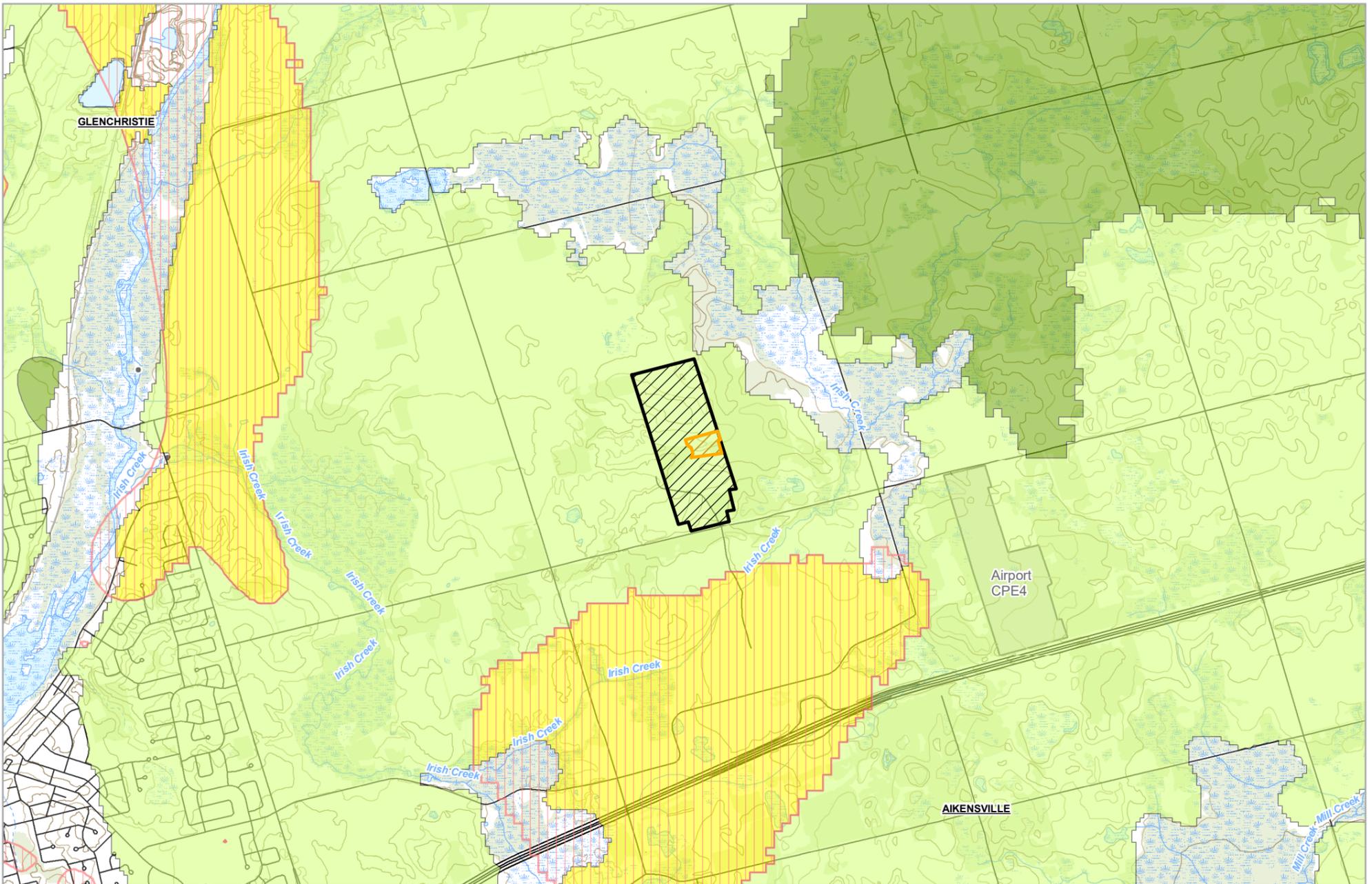


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WELLINGTON COUNTY, ONTARIO

Project No. 11210029  
Date December 2021

SITE LAYOUT

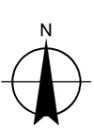
FIGURE 3



- Legend**
- Badger Operations
  - Site Property Line (Approximate)
  - Issue Contributing Areas
  - Highly Vulnerable Aquifers
  - Significantly Groundwater Recharge Areas**
  - 2 - Low Vulnerability
  - 4 - Moderate Vulnerability
  - 6 - High Vulnerability
- Wellhead Protection Areas (WHPA)**
- A - Area of 100 m around the wellhead
  - B - Travel time of 2 years
  - C - Travel time of 2 - 5 years
  - C1 - Travel time is > 2 years and ≤ 10 years
  - D - Travel time of 5 - 25 years
  - F - Surface water is interacting with groundwater

Paper Size ISO A3  
 0 250 500 750 1,000  
 Meters

Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 UTM Zone 17N



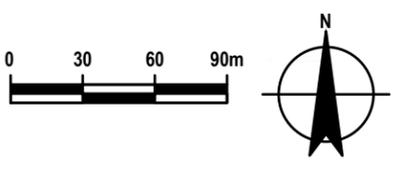
2374868 ONTARIO INC.  
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 CAMBRIDGE, ON

Project No. 11210029  
 Revision No. -  
 Date Dec 6, 2021

**SOURCE WATER PROTECTION**

**FIGURE 4**

Data source: WWIS, 2020. Ontario Ministry of the Environment (Accessed August, 2020). Imagery Google 2020. Capture date: 7/Jul/2018; Ministry of the Environment, Conservation and Parks. Source Protection Information Atlas. Online Web Application, 2021.



2374868 ONTARIO INC.  
 6678 WELLINGTON ROAD 34  
 WELLINGTON COUNTY, ONTARIO

Project No. 11210029  
 Date December 2021

**Table 1**  
**Summary of Soil Sampling**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

	Sample ID: Report No. Sample Date:	Soil 49951 Jan-17	Soil 49954 Feb-17	Soil 49954 Mar-17	Soil 49960 Apr-17	Soil 49962 May-17	Soil 49965 Jun-17	Soil 49970 Jul-17	Soil 49972 Aug-17	Soil 49974 Sep-17	Soil 49977 Oct-17	Soil 50014 Nov-17	Soil 50015 Dec-17	Soil 50018 Jan-18	Soil 50020 Feb-18	Soil 50024 Mar-18	Soil 50026 Apr-18	Soil 50069 May-18	Soil 50072 Jun-18	Soil 50075 Jul-18	Soil 50077 Aug-18	Soil 50080 Sep-18	Soil 50082 Oct-18	Soil 50084 Nov-18
<b>GHD Table 1 Standards<sup>2</sup> 2011</b>	<b>Units</b>																							
<b>Physical Tests</b>																								
Conductivity	0.57	mS/cm																						
% Moisture	--	%																						
pH	--	pH units																						
<b>Cyanides</b>																								
Cyanides, Weak Acid Diss	0.051	ug/g																						
<b>Saturated Paste Extratables</b>																								
SAR	2.4	SAR																						
Calcium	--	mg/L																						
Magnesium	--	mg/L																						
Sodium	--	mg/L																						
<b>Metals</b>																								
Antimony	1.3	µg/g																						
Arsenic	18	µg/g																						
Barium	220	µg/g																						
Beryllium	2.5	µg/g																						
Boron (Hot Water Soluble)	--	µg/g																						
Boron (total)	36	µg/g																						
Cadmium	1.2	µg/g																						
Chromium	70	µg/g																						
Chromium, Hexavalent	0.66	µg/g																						
Cobalt	21	µg/g																						
Copper	92	µg/g																						
Lead	120	µg/g																						
Mercury	0.27	µg/g																						
Molybdenum	2.0	µg/g																						
Nickel	82	µg/g																						
Selenium	1.5	µg/g																						
Silver	0.5	µg/g																						
Thallium	1.0	µg/g																						
Uranium	2.5	µg/g																						
Vanadium	86	µg/g																						
Zinc	290	µg/g																						
Aluminum	--	µg/g																						
Calcium	--	µg/g																						
Iron	--	µg/g																						
Lithium	--	µg/g																						
Magnesium	--	µg/g																						
Manganese	--	µg/g																						
Phosphorus	--	µg/g																						
Potassium	--	µg/g																						
Sodium	--	µg/g																						
Strontium	--	µg/g																						
<b>Volatile Organic Compounds</b>																								
Acetone	0.5	µg/g																						
Benzene	0.02	µg/g																						
Bromodichloromethane	0.05	µg/g																						
Bromoform	0.05	µg/g																						
Bromomethane	0.05	µg/g																						
Carbon Tetrachloride	0.05	µg/g																						
Chlorobenzene	0.05	µg/g																						
Dibromochloromethane	0.05	µg/g																						
Chloroform	0.05	µg/g																						
1,2-Dibromoethane	0.05	µg/g																						
1,2-Dichlorobenzene	0.05	µg/g																						
1,3-Dichlorobenzene	0.05	µg/g																						
1,4-Dichlorobenzene	0.05	µg/g																						
Dichlorodifluoromethane	0.05	µg/g																						
1,1-Dichloroethane	0.05	µg/g																						
1,2-Dichloroethane	0.05	µg/g																						
1,1-Dichloroethylene	0.05	µg/g																						
cis-1,2-Dichloroethylene	0.05	µg/g																						
trans-1,2-Dichloroethylene	0.05	µg/g																						
Methylene Chloride	0.05	µg/g																						
1,2-Dichloropropane	0.05	µg/g																						
cis-1,3-Dichloropropene	--	µg/g																						
Trans-1,3-Dichloropropene	--	µg/g																						
Ethylbenzene	0.05	µg/g																						
n-Hexane	0.05	µg/g																						
Methyl Ethyl Ketone	0.5	µg/g																						
Methyl Isobutyl Ketone	0.5	µg/g																						
MTBE	0.05	µg/g																						
Styrene	0.05	µg/g																						
1,1,1,2-Tetrachloroethane	0.05	µg/g																						
1,1,2,2-Tetrachloroethane	0.05	µg/g																						
Tetrachloroethene	0.05	µg/g																						
Toluene	0.2	µg/g																						
1,1,1-Trichloroethane	0.05	µg/g																						
1,1,2-Trichloroethane	0.05	µg/g																						
Trichloroethylene	0.05	µg/g																						
Trichlorofluoromethane	0.25	µg/g																						
Vinyl Chloride	0.02	µg/g																						
Xylenes	0.05	µg/g																						
Chloroethane	--	µg/g																						
Chloromethane	--	µg/g																						
PHC - F1 (C <sub>9</sub> -C <sub>10</sub> Hydrocarbons)	25	µg/g																						
PHC - F2 (>C <sub>10</sub> -C <sub>16</sub> Hydrocarbons)	10	µg/g																						
PHC - F3 (>C <sub>16</sub> -C <sub>34</sub> Hydrocarbons)	240	µg/g																						
PHC - F4 (>C <sub>34</sub> -C <sub>50</sub> Hydrocarbons)	120	µg/g																						
Gravimetric heavy hydrocarbons F4G-SG (GHH-Silica)	120	µg/g																						

**Table 1**  
**Summary of Soil Sampling**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

GHD Table 1 Standards <sup>2</sup> 2011	Units	Sample ID:	Soil																									
		Report No.	49951	49954	49954	49960	49962	49965	49970	49972	49974	49977	50014	50015	50018	50020	50024	50026	50069	50072	50075	50077	50080	50082	50084			
		Sample Date:	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18			
<b>Semi-Volatile Organics (Soil)</b>																												
Acenaphthene	0.072	µg/g																										
Acenaphthylene	0.093	µg/g																										
Anthracene	0.16	µg/g																										
Benzo(a)anthracene	0.36	µg/g																										
Benzo(a)pyrene	0.30	µg/g																										
Benzo(b)fluoranthene	0.47	µg/g																										
Benzo(ghi)perylene	0.68	µg/g																										
Benzo(k)fluoranthene	0.48	µg/g																										
Biphenyl	0.05	µg/g																										
4-Chloroaniline	0.5	µg/g																										
Bis(2-chloroethyl)ether	0.5	µg/g																										
Bis(2-chloroisopropyl)ether	0.5	µg/g																										
2-Chlorophenol	0.1	µg/g																										
Chrysene	2.8	µg/g																										
Dibenzo(a,h)anthracene	0.1	µg/g																										
3,3'-Dichlorobenzidine	1	µg/g																										
2,4-Dichlorophenol	0.1	µg/g																										
Diethylphthalate	0.5	µg/g																										
Dimethylphthalate	0.5	µg/g																										
2,4-Dimethylphenol	0.2	µg/g																										
2,4-Dinitrophenol	2	µg/g																										
2,4-Dinitrotoluene	--	µg/g																										
2,6-Dinitrotoluene	--	µg/g																										
2,4+2,6-Dinitrotoluene	0.5	µg/g																										
Bis(2-ethylhexyl)phthalate	5	µg/g																										
Fluoranthene	0.56	µg/g																										
Fluorene	0.12	µg/g																										
Indeno(1,2,3-cd)pyrene	0.23	µg/g																										
1-Methylnaphthalene	0.59	µg/g																										
2-Methylnaphthalene	0.59	µg/g																										
Naphthalene	0.09	µg/g																										
Pentachlorophenol	0.1	µg/g																										
Phenanthrene	0.69	µg/g																										
Phenol	0.5	µg/g																										
Pyrene	1	µg/g																										
1,2,4-Trichlorobenzene	0.05	µg/g																										
2,4,5-Trichlorophenol	0.1	µg/g																										
2,4,6-Trichlorophenol	0.1	µg/g																										
1+2-Methylnaphthalenes	0.59	µg/g																										
<b>Polychlorinated Biphenyls (Soil)</b>																												
Aroclor 1242	--	ug/g																										
Aroclor 1248	--	ug/g																										
Aroclor 1254	--	ug/g																										
Aroclor 1260	--	ug/g																										
Total PCBs	0.3	ug/g																										

Notes:  
<sup>1</sup> Data from Guelph Chemical Laboratories Ltd. (GCL) reports for soil samples collected by Badger on monthly basis from January 2017 to December 2019.  
<sup>2</sup> Full Depth Background Site Condition Standards for Residential/ Parkland/ Institutional/ Industrial/ Commercial/ Community Property Use for Coarse Textured Soils, as provided in the Table 1 of the MECOP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.  
 -- No data or Standard available.  
 ND Not detected at the associated detection limit (DL).  
 µg/g microgram/gram  
 Concentration greater than referenced 2011 Table 1 Criteria.



**Table 1**  
**Summary of Soil Sampling**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

GHD Table 1 Standards <sup>2</sup> 2011	Units	Sample ID:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	S-11210029-280520-CD001	S-11210029-040620-AS003		
		Report No.	50123	50123-1	50123-2	50123-3	50123-4	50123-5	50123-6	50123-7	50123-8	50123-9	50123-10	50123-11	50123-12	50139	50139	50139-1	50139-1	50139-2	50139-2	50139-3	L2453152	L2456332-1	
		Sample Date:	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan 3 2020	Jan 21 2020	Feb 7 2020	Feb 19 2020	Mar 6 2020	Mar 20 2020	Apr 3 2020	May 28 2020	June 4 2020	
<b>Semi-Volatile Organics (Soil)</b>																									
Acenaphthene	0.072	µg/g																					<0.050	<0.050	
Acenaphthylene	0.093	µg/g																						<0.050	<0.050
Anthracene	0.16	µg/g																						<0.050	<0.050
Benzo(a)anthracene	0.36	µg/g																						0.092	0.061
Benzo(a)pyrene	0.30	µg/g																						0.087	0.062
Benzo(b)fluoranthene	0.47	µg/g																						0.095	0.065
Benzo(ghi)perylene	0.68	µg/g																						0.065	0.054
Benzo(k)fluoranthene	0.48	µg/g																						0.073	<0.050
Biphenyl	0.05	µg/g																						<0.050	<0.050
4-Chloroaniline	0.5	µg/g																						<0.10	<0.10
Bis(2-chloroethyl)ether	0.5	µg/g																						<0.10	<0.10
Bis(2-chloroisopropyl)ether	0.5	µg/g																						<0.10	<0.10
2-Chlorophenol	0.1	µg/g																						<0.10	<0.10
Chrysene	2.8	µg/g																						<0.10	<0.10
Dibenzo(a,h)anthracene	0.1	µg/g																						0.096	0.063
3,3'-Dichlorobenzidine	1	µg/g																						<0.050	<0.050
2,4-Dichlorophenol	0.1	µg/g																						<0.10	<0.10
Diethylphthalate	0.5	µg/g																						<0.10	<0.10
Dimethylphthalate	0.5	µg/g																						<0.10	<0.10
2,4-Dimethylphenol	0.2	µg/g																						<0.10	<0.10
2,4-Dinitrophenol	2	µg/g																						<0.10	<0.10
2,4-Dinitrotoluene	--	µg/g																						<1.0	<1.0
2,6-Dinitrotoluene	--	µg/g																						<0.10	<0.10
2,4+2,6-Dinitrotoluene	0.5	µg/g																						<0.10	<0.10
Bis(2-ethylhexyl)phthalate	5	µg/g																						<0.14	<0.14
Fluoranthene	0.56	µg/g																						0.159	0.099
Fluorene	0.12	µg/g																						<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.23	µg/g																						0.07	<0.050
1-Methylnaphthalene	0.59	µg/g																						<0.030	<0.030
2-Methylnaphthalene	0.59	µg/g																						<0.030	<0.030
Naphthalene	0.09	µg/g																						<0.050	<0.050
Pentachlorophenol	0.1	µg/g																						<0.10	<0.10
Phenanthrene	0.69	µg/g																						<0.10	<0.050
Phenol	0.5	µg/g																						<0.10	<0.10
Pyrene	1	µg/g																						0.123	0.085
1,2,4-Trichlorobenzene	0.05	µg/g																						<0.050	<0.050
2,4,5-Trichlorophenol	0.1	µg/g																						<0.10	<0.10
2,4,6-Trichlorophenol	0.1	µg/g																						<0.10	<0.10
1+2-Methylnaphthalenes	0.59	µg/g																						<0.042	<0.042
<b>Polychlorinated Biphenyls (Soil)</b>																									
Aroclor 1242	--	ug/g																						<0.010	<0.010
Aroclor 1248	--	ug/g																						<0.010	<0.010
Aroclor 1254	--	ug/g																						<0.010	<0.010
Aroclor 1260	--	ug/g																						<0.010	<0.010
Total PCBs	0.3	ug/g																						<0.020	<0.020

Notes:  
<sup>1</sup> Data from Guelph Chemical Laboratories Ltd. (GCL) reports for soil samples collected by Badger on monthly basis from January 2017 to December 2019.  
<sup>2</sup> Full Depth Background Site Condition Standards for Residential/ Parkland/ Institutional/ Industrial/ Commercial/ Community Property Use for Coarse Textured Soils, as provided in the Table 1 of the MECOP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.  
 -- No data or Standard available.  
 ND Not detected at the associated detection limit (DL).  
 µg/g microgram/gram  
 Concentration greater than referenced 2011 Table 1 Criteria.

Table 1  
 Summary of Soil Sampling  
 (January 2017 to October 2021)  
 6678 Wellington Road 34  
 Cambridge, Ontario

GHD Table 1 Standards <sup>2</sup> 2011	Sample ID: Report No. Sample Date:	Average of CD001, AS003 and CD005																		
		S-11210029-20200611-CD005 L2459295-1 June 11 2020	S-11210029-20200618-7 L2465335-1 June 18 2020	S-11210029-20200625-9 L2465054-1 June 25 2020	S-11210029-20200702-11 L2466684-1 July 2 2020	S-11210029-20200709-13 L2472283-1 July 9 2020	S-11210029-20200716-15 L2475554-1 July 16 2020	S-11210029-20200723-17 L2478880-1 July 23 2020	S-11210029-20200730-19 L2482456-1 July 30 2020	S-11210029-20200806-21 L2484847-1 August 6 2020	S-11210029-20200813-23 L2488949-1 August 13 2020	S-11210029-20200820-25 L2491986 August 20 2020	S-11210029-20200827-27 L2495290 August 27 2020	S-11210029-20200903-29 L2498541-1 September 3 2020	S-11210029-20200910-31 L2501494-1 September 10 2020	S-11210029-20200917-33 L2504857-1 September 17 2020				
<b>Physical Tests</b>																				
Conductivity	0.57	mS/cm	0.222	0.3	0.199	0.163	0.17	0.21	0.212	0.122	0.232	0.183	0.212	0.216	0.431	0.207	0.191			
% Moisture	--	%	12.1	8.8	5.7	7.7	9.6	7.7	8.3	9.6	10.3	8.3	1.5	3.4	2.5	2.6	2.2			
pH	--	pH units	7.7	7.7	7.5	7.2	7.4	7.1	7.3	7.3	7.7	7.6	7.6	7.6	7.8	7.6	7.5			
<b>Cyanides</b>																				
Cyanides, Weak Acid Diss	0.051	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
<b>Saturated Paste Extractions</b>																				
SAR	2.4	SAR	2.18	3.2	<0.10	<0.10	<0.10	<0.10	0.1	<0.10	<0.10	0.37	0.25	<0.10	3.04	<0.10	<0.10			
Calcium	--	mg/L	11.6	10.8	30.1	23.8	26.9	29.4	15.6	17.1	32.4	31.6	28.7	28.9	20.9	28.3	23.9			
Magnesium	--	mg/L	1.56	1.5	4.77	9.88	3.12	10.7	8.3	4.23	4.61	4.88	5.08	4.88	4.48	4.06	3.99			
Sodium	--	mg/L	29.8	41.8	1.11	1.96	0.87	1.98	2.06	1.48	1.54	8.42	5.59	1.52	55.1	1.73	1.57			
<b>Metals</b>																				
Antimony	1.3	ug/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
Arsenic	18	ug/g	3.8	3.3	4.6	5.5	3	5.3	5.4	3.6	4.0	3.8	4.1	4.1	3.3	3.8	4.1			
Barium	220	ug/g	46.6	41.2	54.2	59.7	41.2	61.9	58.8	39.1	45.9	45.1	46.5	41.0	46.8	49.7	52.4			
Beryllium	2.5	ug/g	<0.50	<0.50	<0.50	0.54	<0.50	<0.50	0.53	0.99	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50			
Boron (Hot Water Soluble)	--	ug/g	0.19	0.17	0.31	0.36	0.47	0.84	0.32	0.29	0.29	0.38	0.19	0.4	0.44	0.4	0.34			
Boron (total)	36	ug/g	6.1	5.8	6.5	5.7	<5.0	6.1	<5.0	6.2	5.1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0			
Cadmium	1.2	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50			
Chromium	70	ug/g	15.1	13.1	16.5	18.9	11.3	17.5	18.9	11.1	12.3	12.8	13.2	12.6	13.8	12.9	14.4			
Chromium, Hexavalent	0.66	ug/g	<0.2	<0.19	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20			
Cobalt	21	ug/g	5.1	4.5	5.4	6	4.1	5.7	6	23.9	4.3	4.5	4.5	4.6	4.6	4.7	5.0			
Copper	92	ug/g	16.3	14.2	11	10.4	7.1	10.4	10.3	47.4	9.2	9.7	10.4	13.5	9.9	11.3	11.8			
Lead	120	ug/g	26.3	20.5	31.8	43.7	20.3	46.4	41.4	6.9	25.1	27.9	28.6	29.4	30.1	31.2	31.2			
Mercury	0.27	ug/g	0.0347	0.0322	0.0334	0.0365	0.0315	0.0624	0.0596	0.0065	0.0303	0.0345	0.0375	0.0298	0.0322	0.0373	0.039			
Molybdenum	2.0	ug/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
Nickel	82	ug/g	10.8	9.5	10.9	11.3	8	10.9	11.0	60.2	8.6	8.8	9	9.1	8.9	9.1	10.2			
Selenium	1.5	ug/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
Silver	0.5	ug/g	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20			
Thallium	1.0	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50			
Uranium	2.5	ug/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
Vanadium	86	ug/g	26.3	23.2	33.5	37.1	22.5	34.8	37.3	113	25.0	25.4	24.6	24.7	26.4	26.0	28.6			
Zinc	290	ug/g	101	83.0	173	209	114	210	209	125	136	136	140	144	79.9	148	139			
Aluminum	--	ug/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
Calcium	--	ug/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
Iron	--	ug/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
Lithium	--	ug/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
Magnesium	--	ug/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
Manganese	--	ug/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
Phosphorus	--	ug/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
Potassium	--	ug/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
Sodium	--	ug/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
Strontium	--	ug/g	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
<b>Volatile Organic Compounds</b>																				
Acetone	0.5	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50			
Benzene	0.02	ug/g	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068			
Bromodichloromethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
Bromoforn	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
Bromomethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
Carbon Tetrachloride	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
Chlorobenzene	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
Dibromochloromethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
Chloroform	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
1,2-Dibromoethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
1,2-Dichlorobenzene	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
1,3-Dichlorobenzene	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
1,4-Dichlorobenzene	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
Dichlorodifluoromethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
1,1-Dichloroethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050			
1,2-Dichloroethane																				

**Table 1**  
**Summary of Soil Sampling**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

Sample ID: Report No. Sample Date:	Average of CD001, AS003 and CD005																
	S-11210029-20200611-CD005 L2459295-1 June 11 2020	S-11210029-20200618-7 L2465335-1 June 18 2020	S-11210029-20200625-9 L2466054-1 June 25 2020	S-11210029-20200702-11 L2468684-1 July 2 2020	S-11210029-20200709-13 L2472283-1 July 9 2020	S-11210029-20200716-15 L2475554-1 July 16 2020	S-11210029-20200723-17 L2478880-1 July 23 2020	S-11210029-20200730-19 L2482456-1 July 30 2020	S-11210029-20200806-21 L2484847-1 August 6 2020	S-11210029-20200813-23 L2488949-1 August 13 2020	S-11210029-20200820-25 L2491986 August 20 2020	S-11210029-20200827-27 L2495290 August 27 2020	S-11210029-20200903-29 L2498541-1 September 3 2020	S-11210029-20200910-31 L2501494-1 September 10 2020	S-11210029-20200917-33 L2504857-1 September 17 2020		
<b>GHD Table 1 Standards<sup>2</sup> 2011</b>	<b>Units</b>																
<b>Semi-Volatile Organics (Soil)</b>																	
Acenaphthene	0.072	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Acenaphthylene	0.093	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Anthracene	0.16	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Benzo(a)anthracene	0.36	0.073	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Benzo(a)pyrene	0.30	0.078	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Benzo(b)fluoranthene	0.47	0.082	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Benzo(ghi)perylene	0.68	0.064	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Benzo(k)fluoranthene	0.48	0.059	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Biphenyl	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
4-Chloroaniline	0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Bis(2-chloroethyl)ether	0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Bis(2-chloroisopropyl)ether	0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
2-Chlorophenol	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Chrysene	2.8	0.078	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Dibenzo(a,h)anthracene	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
3,3'-Dichlorobenzidine	1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
2,4-Dichlorophenol	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Diethylphthalate	0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Dimethylphthalate	0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
2,4-Dimethylphenol	0.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
2,4-Dinitrophenol	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
2,4-Dinitrotoluene	--	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
2,6-Dinitrotoluene	--	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
2,4+2,6-Dinitrotoluene	0.5	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	
Bis(2-ethylhexyl)phthalate	5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Fluoranthene	0.56	0.123	0.127	0.071	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Fluorene	0.12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Indeno(1,2,3-cd)pyrene	0.23	0.058	0.051	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
1-Methylnaphthalene	0.59	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	
2-Methylnaphthalene	0.59	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	
Naphthalene	0.09	<0.10	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Pentachlorophenol	0.1	0.052	0.051	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Phenanthrene	0.69	<0.10	0.052	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Phenol	0.5	0.106	0.069	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Pyrene	1	<0.050	0.078	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
1,2,4-Trichlorobenzene	0.05	<0.10	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
2,4,5-Trichlorophenol	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
2,4,6-Trichlorophenol	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
1+2-Methylnaphthalenes	0.59	<0.050	<0.050	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	
<b>Polychlorinated Biphenyls (Soil)</b>																	
Aroclor 1242	--	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1248	--	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1254	--	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1260	--	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Total PCBs	0.3	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	

Notes:  
<sup>1</sup> Data from Guelph Chemical Laboratories Ltd. (GCL) reports for soil samples collected by Badger on monthly basis from January 2017 to December 2019.  
<sup>2</sup> Full Depth Background Site Condition Standards for Residential/ Parkland/ Institutional/ Industrial/ Commercial/ Community Property Use for Coarse Textured Soils, as provided in the Table 1 of the MECGP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.  
-- No data or Standard available.  
ND Not detected at the associated detection limit (DL).  
µg/g microgram/gram  
Concentration greater than referenced 2011 Table 1 Criteria.

Table 1  
 Summary of Soil Sampling  
 (January 2017 to October 2021)  
 6678 Wellington Road 34  
 Cambridge, Ontario

GHD Table 1 Standards <sup>2</sup> 2011	Sample ID: Report No. Sample Date:	S-11210029-20200924-35	S-11210029-20201001-37	S-11210029-20201008-39	S-11210029-20201015-41	S-11210029-20201022-43	S-11210029-20201029-45	S-11210029-20201105-47	S-11210029-20201112-49	S-11210029-20201119-51	S-11210029-20201126-53	S-11210029-20201203-55	
		L2507925-1 September 24 2020	L2511035-1 October 1 2020	L2514443-1 October 8 2020	L2517018-1 October 15 2020	L2520419-1 October 22 2020	L2523339-1 October 29 2020	L2526460-1 November 5 2020	L2528907-1 November 12 2020	L2531512-1 November 19 2020	L2534005-1 November 26 2020	L2536642-1 December 3 2020	
Units													
<b>Physical Tests</b>													
Conductivity	0.57	mS/cm	0.18	0.16	0.211	0.291	0.301	0.263	0.225	0.556	0.118	0.245	0.0941
% Moisture	--	%	3.1	9.6	6.9	11.5	10.4	11.1	9.0	5.4	7.4	9.7	8.4
pH	--	pH units	7.9	7.7	7.7	7.7	7.7	7.3	7.7	7.7	7.8	7.7	7.9
<b>Cyanides</b>													
Cyanides, Weak Acid Diss	0.051	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<b>Saturated Paste Extratables</b>													
SAR	2.4	SAR	0.89	0.95	2.93	2.81	3.06	2.87	2.45	0.19	0.42	2.51	0.17
Calcium	--	mg/L	13.5	9.78	7.78	12.4	11.9	10.9	9.93	96.1	10.8	11.8	8.75
Magnesium	--	mg/L	1.94	1.82	0.96	1.59	1.64	1.27	1.05	10.5	1.61	1.37	1.08
Sodium	--	mg/L	13.2	12.3	32.6	39.6	42.5	37.6	30.4	7.52	5.56	34.6	2.02
<b>Metals</b>													
Arsimony	1.3	ug/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	18	ug/g	3.3	4.8	3.4	3	3.3	4.1	3	3	5.6	3.6	5.0
Barium	220	ug/g	30.3	53.1	38.3	36.7	41.1	50.4	37.5	94.5	60.8	44.6	54.5
Beryllium	2.5	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Boron (Hot Water Soluble)	--	ug/g	0.16	0.23	0.21	0.22	0.19	0.19	0.33	0.17	0.16	0.16	0.15
Boron (total)	36	ug/g	5.4	6.3	6.2	6.2	8.2	8.2	5.6	6.1	6.1	7.4	6.6
Cadmium	1.2	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chromium	70	ug/g	9.4	14.1	13	12.5	12.5	15.4	12.2	12	14.7	14.2	15.1
Chromium, Hexavalent	0.66	ug/g	0.33	0.24	<0.20	0.2	<0.20	0.32	<0.20	<0.20	<0.20	<0.20	0.38
Cobalt	21	ug/g	3.8	5.4	4.4	4.3	4.2	5.3	4.2	4	5.3	4.6	5.8
Copper	92	ug/g	18.4	27.3	13.7	14.0	14.7	17	13.5	13.4	28.1	14.9	30.5
Lead	120	ug/g	25.3	39.9	19.1	20.5	20.4	24.6	20	195	50.7	28.5	39.4
Mercury	0.27	ug/g	0.0228	0.0404	0.0373	0.0302	0.0311	0.0331	0.0376	0.0276	0.0515	0.0417	0.0424
Molybdenum	2.0	ug/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nickel	82	ug/g	7.4	11	9.3	9.0	9.3	11.3	8.6	8.4	11.2	9.7	11.8
Selenium	1.5	ug/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	0.5	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	1.0	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium	2.5	ug/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium	86	ug/g	21.7	27.5	23.7	21.6	21.4	28.0	21.1	22.6	28	24.7	28.8
Zinc	290	ug/g	120	215	78.3	76.6	77.3	98.8	72.9	90.6	211	91.9	219
Aluminum	--	ug/g	--	--	--	--	--	--	--	--	--	--	--
Calcium	--	ug/g	--	--	--	--	--	--	--	--	--	--	--
Iron	--	ug/g	--	--	--	--	--	--	--	--	--	--	--
Lithium	--	ug/g	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	ug/g	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	ug/g	--	--	--	--	--	--	--	--	--	--	--
Phosphorus	--	ug/g	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	ug/g	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	ug/g	--	--	--	--	--	--	--	--	--	--	--
Strontium	--	ug/g	--	--	--	--	--	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>													
Acetone	0.5	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	0.02	ug/g	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Bromodichloromethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon Tetrachloride	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dibromoethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethylene	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethylene	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,2-Dichloroethylene	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methylene Chloride	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,3-Dichloropropene	--	ug/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Trans-1,3-Dichloropropene	--	ug/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Ethylbenzene	0.05	ug/g	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
n-Hexane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methyl Ethyl Ketone	0.5	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	0.5	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MTBE	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Styrene	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethene	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	0.2	ug/g	<0.080	<0.080	<0.080	<0.080	<0.080	0.267	<0.080	<0.080	<0.080	<0.080	<0.080
1,1,1-Trichloroethane	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	0.05	ug/g	<0.050	<0.050	<0.050								

**Table 1**  
**Summary of Soil Sampling**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

GHD Table 1 Standards <sup>2</sup> 2011	Units	Sample ID:	S-11210029-20200924-35	S-11210029-20201001-37	S-11210029-20201008-39	S-11210029-20201015-41	S-11210029-20201022-43	S-11210029-20201029-45	S-11210029-20201105-47	S-11210029-20201112-49	S-11210029-20201119-51	S-11210029-20201126-53	S-11210029-20201203-55
		Report No.	L2507925-1	L2511035-1	L2514443-1	L2517018-1	L2520419-1	L2523339-1	L2526460-1	L2528907-1	L2531512-1	L2534005-1	L2536642-1
		Sample Date:	September 24 2020	October 1 2020	October 8 2020	October 15 2020	October 22 2020	October 29 2020	November 5 2020	November 12 2020	November 19 2020	November 26 2020	December 3 2020
<b>Semi-Volatile Organics (Soil)</b>													
Acenaphthene	0.072	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	0.093	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.16	µg/g	<0.050	<0.050	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.088
Benzo(a)anthracene	0.36	µg/g	0.095	0.083	0.28	0.134	0.071	0.063	<0.050	<0.050	<0.050	<0.050	0.078
Benzo(a)pyrene	0.30	µg/g	0.11	0.113	0.257	0.143	0.078	0.073	0.073	<0.050	<0.050	<0.050	0.079
Benzo(b)fluoranthene	0.47	µg/g	0.134	0.11	0.296	0.12	0.083	0.079	0.056	0.054	<0.050	<0.050	0.066
Benzo(ghi)perylene	0.68	µg/g	0.068	0.075	0.16	0.095	0.055	0.055	0.057	0.068	<0.050	<0.050	0.059
Benzo(k)fluoranthene	0.48	µg/g	0.096	0.142	0.215	0.092	0.052	0.057	0.061	<0.050	<0.050	<0.050	0.071
Biphenyl	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4-Chloroaniline	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-chloroethyl)ether	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-chloroisopropyl)ether	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2-Chlorophenol	0.1	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chrysene	2.8	µg/g	0.144	0.145	0.279	0.135	0.081	0.078	0.071	0.075	<0.050	<0.050	0.088
Dibenzo(a,h)anthracene	0.1	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.075
3,3'-Dichlorobenzidine	1	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dichlorophenol	0.1	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Diethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dimethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dimethylphenol	0.2	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dinitrophenol	2	µg/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	--	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,6-Dinitrotoluene	--	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4+2,6-Dinitrotoluene	0.5	µg/g	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Bis(2-ethylhexyl)phthalate	5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	0.56	µg/g	0.277	0.276	0.635	0.233	0.14	0.128	0.107	0.061	0.051	0.17	2.30
Fluorene	0.12	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.23	µg/g	0.072	0.072	0.16	0.098	0.052	0.052	0.052	0.052	<0.050	<0.050	0.055
1-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Naphthalene	0.09	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Pentachlorophenol	0.1	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Phenanthrene	0.69	µg/g	0.157	0.074	0.35	0.162	0.072	0.053	0.055	<0.050	<0.050	<0.050	0.098
Phenol	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Pyrene	1	µg/g	0.204	0.233	0.476	0.19	0.111	0.086	0.11	0.082	<0.050	<0.050	0.141
1,2,4-Trichlorobenzene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2,4,5-Trichlorophenol	0.1	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4,6-Trichlorophenol	0.1	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1+2-Methylnaphthalenes	0.59	µg/g	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
<b>Polychlorinated Biphenyls (Soil)</b>													
Aroclor 1242	--	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.01	<0.010	<0.010	<0.010
Aroclor 1248	--	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1254	--	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.028	<0.010	<0.010	<0.010
Aroclor 1260	--	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0150	<0.010	<0.010	<0.010
Total PCBs	0.3	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.028	<0.020	<0.020	<0.020

Notes:  
<sup>1</sup> Data from Guelph Chemical Laboratories Ltd. (GCL) reports for soil samples collected by Badger on monthly basis from January 2017 to December 2019.  
<sup>2</sup> Full Depth Background Site Condition Standards for Residential/ Parkland/ Institutional/ Industrial/ Commercial/ Community Property Use for Coarse Textured Soils, as provided in the Table 1 of the MECOP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.  
 -- No data or Standard available.  
 ND Not detected at the associated detection limit (DL).  
 µg/g microgram/gram  
 Concentration greater than referenced 2011 Table 1 Criteria.



**Table 1**  
**Summary of Soil Sampling**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

	Sample ID: Report No. Sample Date:	S-11210029-20201210-57 L2539166-1 December 10 2020	S-11210029-20201217-59 L2541693-1 December 17 2020	S-11210029-20201223-61 L2543494-1 December 23 2020	S-11210029-20201230-63 L2544482-1 December 30 2020	S-11210029-20210107-65 L2546298-1 January 7 2021	S-11210029-20210114-67 L2548350-1 January 14 2021	S-11210029-20210121-69 L2550619-1 January 21 2021	S-11210029-01282021-EN-71 L2552643-1 January 28 2021	S-11210029-02042021-EN-73 L2564841-1 February 4 2021	S-11210029-2021-EN-75 L2566914-1 February 11 2021	S-11210029-2021-EN-77 L2568964-1 February 18 2021
<b>GHD Table 1 Standards<sup>2</sup> 2011</b>	<b>Units</b>											
<b>Semi-Volatile Organics (Soil)</b>												
Acenaphthene	0.072 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	0.093 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.16 µg/g	<0.050	<0.050	<0.050	<0.050	0.065	<0.050	<0.050	<0.050	<0.050	<0.050	0.129
Benzo(a)anthracene	0.36 µg/g	0.081	0.079	<0.050	<0.050	0.173	<0.050	<0.050	<0.050	<0.050	<0.050	0.182
Benzo(a)pyrene	0.30 µg/g	0.112	0.087	<0.050	<0.050	0.178	<0.050	<0.050	<0.050	<0.050	<0.050	0.127
Benzo(b)fluoranthene	0.47 µg/g	0.121	0.071	<0.050	<0.050	0.152	<0.050	<0.050	<0.050	0.053	<0.050	0.096
Benzo(ghi)perylene	0.68 µg/g	0.086	0.055	<0.050	<0.050	0.153	<0.050	<0.050	<0.050	<0.050	<0.050	0.051
Benzo(k)fluoranthene	0.48 µg/g	0.132	0.078	<0.050	<0.050	0.14	<0.050	<0.050	<0.050	0.06	<0.050	0.115
Biphenyl	0.05 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4-Chloroaniline	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-chloroethyl)ether	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-chloroisopropyl)ether	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2-Chlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chrysene	2.8 µg/g	0.135	0.09	<0.050	<0.050	0.203	<0.050	<0.050	<0.050	0.061	<0.050	0.175
Dibenzo(a,h)anthracene	0.1 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
3,3'-Dichlorobenzidine	1 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dichlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Diethylphthalate	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dimethylphthalate	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dimethylphenol	0.2 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dinitrophenol	2 µg/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	-- µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,6-Dinitrotoluene	-- µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4+2,6-Dinitrotoluene	0.5 µg/g	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Bis(2-ethylhexyl)phthalate	5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Fluorene	0.56 µg/g	0.149	0.245	<0.050	<0.050	0.324	<0.050	<0.050	<0.050	0.105	0.057	0.325
Fluorene	0.12 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.07
Indeno(1,2,3-cd)pyrene	0.23 µg/g	0.078	0.069	<0.050	<0.050	0.129	<0.050	<0.050	<0.050	<0.050	<0.050	0.067
1-Methylnaphthalene	0.59 µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	0.59 µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.033
Naphthalene	0.09 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Pentachlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Phenanthrene	0.69 µg/g	0.113	0.093	<0.050	<0.050	0.253	<0.050	<0.050	<0.050	0.052	<0.050	0.424
Phenol	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Pyrene	1 µg/g	0.137	0.188	<0.050	<0.050	0.254	<0.050	<0.050	<0.050	0.084	<0.050	0.263
1,2,4-Trichlorobenzene	0.05 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2,4,5-Trichlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4,6-Trichlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1+2-Methylnaphthalenes	0.59 µg/g	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
<b>Polychlorinated Biphenyls (Soil)</b>												
Aroclor 1242	-- ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1248	-- ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1254	-- ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1260	-- ug/g	<0.010	<0.010	<0.010	<0.010	0.037	<0.010	0.052	<0.010	0.077	<0.010	<0.010
Total PCBs	0.3 ug/g	<0.020	<0.020	0.05	0.037	<0.020	<0.020	0.052	0.077	<0.020	0.039	<0.020

Notes:

<sup>1</sup> Data from Guelph Chemical Laboratories Ltd. (GCL) reports for soil samples collected by Badger on monthly basis from January 2017 to December 2019.

<sup>2</sup> Full Depth Background Site Condition Standards for Residential/ Parkland/ Institutional/ Industrial/ Commercial/ Community Property Use for Coarse Textured Soils, as provided in the Table 1 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

-- No data or Standard available.

ND Not detected at the associated detection limit (DL).

µg/g microgram/gram

Concentration greater than referenced 2011 Table 1 Criteria.



**Table 1**  
**Summary of Soil Sampling**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

GHD Table 1 Standards <sup>2</sup> 2011	Units	Sample ID:	S-11210029-2021-EN-79	S-11210029-2021-EN-81	S-11210029-2021-EN-83	S-11210029-2021-EN-85	S-11210029-2021-EN-87	S-11210029-2021-EN-89	S-11210029-2021-EN-91	S-11210029-2021-EN-93	S-11210029-2021-EN-95	S-11210029-2021-EN-97	S-11210029-2021-EN-99
		Report No. Sample Date:	L2561252-1 February 25 2021	L2563770-1 March 4 2021	L2566004-1 March 11 2021	L2568406-1 March 18 2021	L2570496-1 March 25 2021	L2572802-1 April 1 2021	L2574585-1 April 8 2021	L2576974-1 April 15 2021	L2579468-1 April 22 2021	L2581988-1 April 29 2021	L2584822-1 May 6 2021
<b>Semi-Volatile Organics (Soil)</b>													
Acenaphthene	0.072	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	0.093	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.16	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.36	µg/g	0.092	<0.050	<0.050	0.093	<0.050	0.098	<0.050	0.101	0.064	0.078	0.084
Benzo(a)pyrene	0.30	µg/g	0.111	<0.050	<0.050	0.087	<0.050	0.094	<0.050	0.115	0.063	<0.050	0.076
Benzo(b)fluoranthene	0.47	µg/g	0.146	<0.050	<0.050	0.112	<0.050	0.084	<0.050	0.100	0.063	<0.050	0.073
Benzo(ghi)perylene	0.68	µg/g	0.069	<0.050	<0.050	0.087	<0.050	0.059	<0.050	0.080	<0.050	0.052	0.057
Benzo(k)fluoranthene	0.48	µg/g	0.079	<0.050	<0.050	0.10	<0.050	0.080	<0.050	0.112	0.052	<0.050	0.059
Biphenyl	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4-Chloroaniline	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-chloroethyl)ether	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-chloroisopropyl)ether	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2-Chlorophenol	0.1	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chrysene	2.8	µg/g	0.102	<0.050	<0.050	0.103	<0.050	0.086	<0.050	0.103	0.068	0.079	0.102
Dibenzo(a,h)anthracene	0.1	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
3,3'-Dichlorobenzidine	1	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dichlorophenol	0.1	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Diethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dimethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dimethylphenol	0.2	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dinitrophenol	2	µg/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	--	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,6-Dinitrotoluene	--	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4+2,6-Dinitrotoluene	0.5	µg/g	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Bis(2-ethylhexyl)phthalate	5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Fluorene	0.56	µg/g	0.23	0.086	0.1	0.176	0.133	0.058	<0.10	0.140	0.113	0.062	0.180
Fluorene	0.12	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.23	µg/g	0.072	<0.050	<0.050	0.096	<0.050	0.052	<0.050	0.084	<0.050	0.064	0.058
1-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Naphthalene	0.09	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Pentachlorophenol	0.1	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Phenanthrene	0.69	µg/g	0.08	0.075	0.114	0.079	0.120	0.099	<0.10	0.051	<0.10	0.107	0.085
Phenol	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Pyrene	1	µg/g	0.205	0.058	0.08	0.145	0.119	0.055	<0.10	0.150	0.098	0.135	0.150
1,2,4-Trichlorobenzene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2,4,5-Trichlorophenol	0.1	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4,6-Trichlorophenol	0.1	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1+2-Methylnaphthalenes	0.59	µg/g	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
<b>Polychlorinated Biphenyls (Soil)</b>													
Aroclor 1242	--	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1248	--	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1254	--	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1260	--	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Total PCBs	0.3	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Notes:

<sup>1</sup> Data from Guelph Chemical Laboratories Ltd. (GCL) reports for soil samples collected by Badger on monthly basis from January 2017 to December 2019.

<sup>2</sup> Full Depth Background Site Condition Standards for Residential/ Parkland/ Institutional/ Industrial/ Commercial/ Community Property Use for Coarse Textured Soils, as provided in the Table 1 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

-- No data or Standard available.

ND Not detected at the associated detection limit (DL).

µg/g microgram/gram

Concentration greater than referenced 2011 Table 1 Criteria.



**Table 1**  
**Summary of Soil Sampling**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

	Sample ID: Report No. Sample Date:	S-11210029-2021-EN-101 L2587524-1 May 13 2021	S-11210029-2021-EN-103 L2590577-1 May 20 2021	S-11210029-2021-EN-105 L2593239-1 May 27 2021	S-11210029-030621-EN-107 L2596387-1 Jun 3 2021	S-11210029-061021-EN-109 L2599785-1 Jun 10 2021	S-11210029-2021-EN-111 L2602822-1 Jun 17 2021	S-11210029-240621-EN-113 L2609933-1 Jun 24 2021	S-11210029-070221-EN-115 L2609239-1 Jul 2 2021	S-11210029-21-EN-117 L2611563-1 Jul 8 2021	S-11210029-150721-EN-119 L2614433-1 Jul 15 2021	S-11210029-220721-EN-121 L2617400-1 Jul 22 2021
<b>GHD Table 1 Standards<sup>2</sup> 2011</b>	<b>Units</b>											
<b>Semi-Volatile Organics (Soil)</b>												
Acenaphthene	0.072 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	0.093 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.16 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.36 µg/g	<0.050	0.29	0.084	0.137	0.067	0.065	0.067	0.068	0.067	0.062	0.062
Benzo(a)pyrene	0.30 µg/g	<0.050	0.33	0.078	0.113	0.069	0.060	0.068	0.068	0.067	0.071	0.071
Benzo(b)fluoranthene	0.47 µg/g	0.061	0.34	0.085	0.114	0.050	0.052	0.067	0.067	0.067	0.062	0.062
Benzo(ghi)perylene	0.68 µg/g	<0.050	0.30	0.050	0.090	0.051	0.055	0.050	0.050	0.050	0.065	0.065
Benzo(k)fluoranthene	0.48 µg/g	<0.050	0.26	0.052	0.111	0.069	0.065	0.069	0.069	0.069	0.072	0.072
Biphenyl	0.05 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4-Chloroaniline	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-chloroethyl)ether	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-chloroisopropyl)ether	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2-Chlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chrysene	2.8 µg/g	0.059	0.29	0.079	0.119	0.072	0.069	0.065	0.065	0.065	0.075	0.075
Dibenzo(a,h)anthracene	0.1 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
3,3'-Dichlorobenzidine	1 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dichlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Diethylphthalate	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dimethylphthalate	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dimethylphenol	0.2 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dinitrophenol	2 µg/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	— µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,6-Dinitrotoluene	— µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4+2,6-Dinitrotoluene	0.5 µg/g	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Bis(2-ethylhexyl)phthalate	5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.22	<0.10	<0.10	<0.10	<0.10
Fluorene	0.56 µg/g	0.094	0.59	0.141	0.216	0.080	0.114	0.130	0.058	0.069	0.124	0.124
Fluorene	0.12 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.23 µg/g	<0.050	0.28	0.053	0.089	0.053	0.053	<0.050	<0.050	<0.050	<0.050	<0.050
1-Methylnaphthalene	0.59 µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	0.59 µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Naphthalene	0.09 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Pentachlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Phenanthrene	0.69 µg/g	0.052	0.13	0.071	0.103	0.050	0.071	0.070	0.070	0.070	0.053	0.053
Phenol	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Pyrene	1 µg/g	0.077	0.48	0.112	0.185	0.050	0.100	0.096	0.063	0.063	0.112	0.112
1,2,4-Trichlorobenzene	0.05 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2,4,5-Trichlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4,6-Trichlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1+2-Methylnaphthalenes	0.59 µg/g	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
<b>Polychlorinated Biphenyls (Soil)</b>												
Aroclor 1242	— ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1248	— ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1254	— ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1260	— ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Total PCBs	0.3 ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Notes:

<sup>1</sup> Data from Guelph Chemical Laboratories Ltd. (GCL) reports for soil samples collected by Badger on monthly basis from January 2017 to December 2019.

<sup>2</sup> Full Depth Background Site Condition Standards for Residential/ Parkland/ Institutional/ Industrial/ Commercial/ Community Property Use for Coarse Textured Soils, as provided in the Table 1 of the MECOP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

— No data or Standard available.

ND Not detected at the associated detection limit (DL).

µg/g microgram/gram

Concentration greater than referenced 2011 Table 1 Criteria.

**Table 1**  
**Summary of Soil Sampling**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

GHD Table 1 Standards <sup>2</sup> 2011	Sample ID: Report No. Sample Date:	S-11210029-290721-EN-123	S-11210029-120821-EN-125	S-11210029-21-EN-127	S-11210029-21-EN-129	S-11210029-020921-EN-131	S-11210029-090921-EN-133	S-11210029-21-EN-135	S-11210029-092321-EN-	S-11210029-093021-EN-139	S-11210029-100721-EN-141	S-11210029-101421-EN-143
		L2620402-1 Jul 29 2021	L2626038-1 Aug 12 2021	L2629018-1 Aug 19 2021	L2632033-1 Aug 26 2021	L2635105-1 Sept 2 2021	L2637421-1 Sept 9 2021	L2640327-1 Sept 16 2021	L2643110-1 Sept 23 2021	L2645933-1 Sept 30 2021	L2648923-1 Oct 7 2021	L2651148-1 Oct 14 2021
Units												
<b>Physical Tests</b>												
Conductivity	0.57	mS/cm	0.344	0.458	0.408	0.380	0.295	0.281	0.507	0.140	0.138	0.152
% Moisture	--	%	13.10	11.20	13.30	7.76	13.30	7.76	11.90	10.40	6.71	6.71
pH	--	pH units	8.87	7.65	7.59	7.91	7.61	7.46	7.43	7.86	7.66	7.85
<b>Cyanides</b>												
Cyanides, Weak Acid Diss	0.051	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
<b>Saturated Paste Extratables</b>												
SAR	2.4	SAR	2.84	3.53	3.68	2.80	2.89	3.07	0.98	0.19	<0.10	0.24
Calcium	--	mg/L	17.6	28.7	20.2	26.0	16.3	11.9	58.0	17.2	16.6	17.6
Magnesium	--	mg/L	1.75	3.01	2.03	2.78	2.09	1.26	9.63	2.35	2.45	2.92
Sodium	--	mg/L	46.6	74.3	64.8	56.3	46.7	30.6	30.6	3.1	1.5	4.2
<b>Metals</b>												
Antimony	1.3	µg/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	18	µg/g	3.5	3.7	5.3	3.4	4.1	3.9	4.7	4.1	4.3	4.4
Barium	220	µg/g	41.9	44.2	63.5	43.1	45.3	46.6	62.3	40	41.2	44.5
Beryllium	2.5	µg/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Boron (Hot Water Soluble)	--	µg/g	0.14	0.15	0.19	0.20	0.18	0.18	0.38	0.14	0.15	0.20
Boron (total)	36	µg/g	7.9	7.0	9.8	6.5	6.7	6.0	5.4	5.4	5.2	5.2
Cadmium	1.2	µg/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chromium	70	µg/g	14.7	15.5	21.1	14.9	15.1	14.5	14.3	12.8	11.3	11.5
Chromium, Hexavalent	0.66	µg/g	0.34	0.25	<0.20	<0.20	<0.20	<0.20	<0.20	0.22	<0.20	0.30
Cobalt	21	µg/g	5	4.7	6.5	4.8	5.3	5.3	4.8	5.2	4.3	5.0
Copper	92	µg/g	14.9	14.4	20.3	15.0	16.8	15.0	16.2	29.1	23.4	25.0
Lead	120	µg/g	20.1	18.4	31.9	19.9	25.3	25.2	71.9	36.7	34.2	40.4
Mercury	0.27	µg/g	0.0298	0.0391	0.0389	0.0318	0.0271	0.0313	0.041	0.0258	0.0308	0.0334
Molybdenum	2.0	µg/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nickel	82	µg/g	10.4	10.1	13.5	10.3	10.5	10.7	9.8	10.5	8.9	9.7
Selenium	1.5	µg/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	0.5	µg/g	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	1.0	µg/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium	2.5	µg/g	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium	86	µg/g	25.9	25.3	34.5	24.3	25.9	25.1	26.0	28.0	23.7	24.2
Zinc	290	µg/g	81.6	84.6	118.0	86.0	114.0	112.0	119.0	182.0	164.0	172.0
Aluminum	--	µg/g	--	--	--	--	--	--	--	--	--	--
Calcium	--	µg/g	--	--	--	--	--	--	--	--	--	--
Iron	--	µg/g	--	--	--	--	--	--	--	--	--	--
Lithium	--	µg/g	--	--	--	--	--	--	--	--	--	--
Magnesium	--	µg/g	--	--	--	--	--	--	--	--	--	--
Manganese	--	µg/g	--	--	--	--	--	--	--	--	--	--
Phosphorus	--	µg/g	--	--	--	--	--	--	--	--	--	--
Potassium	--	µg/g	--	--	--	--	--	--	--	--	--	--
Sodium	--	µg/g	--	--	--	--	--	--	--	--	--	--
Strontium	--	µg/g	--	--	--	--	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>												
Acetone	0.5	µg/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	0.02	µg/g	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Bromodichloromethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon Tetrachloride	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dibromoethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethylene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethylene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,2-Dichloroethylene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methylene Chloride	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,3-Dichloropropene	--	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Trans-1,3-Dichloropropene	--	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Ethylbenzene	0.05	µg/g	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
n-Hexane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methyl Ethyl Ketone	0.5	µg/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	0.5	µg/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MTBE	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Styrene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	0.2	µg/g	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
1,1,1-Trichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	0.05	µg/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	0.25	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl Chloride	0.02	µg/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes	0.05	µg/g	<0.050	<0.050	<0							

**Table 1**  
**Summary of Soil Sampling**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

	Sample ID: Report No. Sample Date:	S-11210029-290721-EN-123 L2620402-1 Jul 29 2021	S-11210029-120821-EN-125 L2626038-1 Aug 12 2021	S-1120029-21-EN-127 L2629018-1 Aug 19 2021	S-11210029-21-EN-129 L2632033-1 Aug 26 2021	S-11210029-020921-EN-131 L2635105-1 Sept 2 2021	S-11210029-090921-EN-133 L2637421-1 Sept 9 2021	S-11210029-21-EN-135 L2640327-1 Sept 16 2021	S-11210029-092321-EN-139 L2643110-1 Sept 23 2021	S-11210029-093021-EN-139 L2645933-1 Sept 30 2021	S-11210029-100721-EN-141 L2648923-1 Oct 7 2021	S-11210029-101421-EN-143 L2651148-1 Oct 14 2021
<b>GHD Table 1 Standards<sup>2</sup> 2011</b>	<b>Units</b>											
<b>Semi-Volatile Organics (Soil)</b>												
Acenaphthene	0.072 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	0.093 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.16 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.36 µg/g	0.115	<0.050	<0.050	0.079	<0.050	<0.050	0.079	<0.050	<0.050	0.055	<0.050
Benzo(a)pyrene	0.30 µg/g	0.106	<0.050	<0.050	0.077	<0.050	<0.050	0.092	<0.050	<0.050	0.076	<0.050
Benzo(b)fluoranthene	0.47 µg/g	0.076	<0.050	<0.050	0.056	<0.050	<0.050	0.092	<0.050	<0.050	0.089	0.074
Benzo(ghi)perylene	0.68 µg/g	0.087	<0.050	<0.050	0.079	<0.050	<0.050	0.059	<0.050	<0.050	0.059	<0.050
Benzo(k)fluoranthene	0.48 µg/g	0.100	<0.050	<0.050	0.070	<0.050	<0.050	0.070	<0.050	<0.050	0.070	0.052
Biphenyl	0.05 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4-Chloroaniline	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-chloroethyl)ether	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-chloroisopropyl)ether	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2-Chlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chrysene	2.8 µg/g	0.114	<0.050	<0.050	0.072	<0.050	<0.050	0.088	<0.050	<0.050	0.081	0.059
Dibenzo(a,h)anthracene	0.1 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
3,3'-Dichlorobenzidine	1 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dichlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Diethylphthalate	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dimethylphthalate	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dimethylphenol	0.2 µg/g	<0.10	<0.40	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4-Dinitrophenol	2 µg/g	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	-- µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,6-Dinitrotoluene	-- µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4+2,6-Dinitrotoluene	0.5 µg/g	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Bis(2-ethylhexyl)phthalate	5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Fluorene	0.56 µg/g	0.216	<0.050	<0.050	0.056	<0.050	0.111	0.065	0.141	0.059	0.126	0.097
Fluorene	0.12 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.23 µg/g	0.064	<0.050	<0.050	0.073	<0.050	<0.050	0.058	<0.050	<0.050	0.065	<0.050
1-Methylnaphthalene	0.59 µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	0.59 µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Naphthalene	0.09 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Pentachlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Phenanthrene	0.69 µg/g	0.164	<0.050	<0.050	0.061	<0.050	<0.050	0.085	<0.050	<0.050	<0.050	<0.050
Phenol	0.5 µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Pyrene	1 µg/g	0.176	<0.050	0.051	0.093	<0.050	<0.050	0.121	<0.050	<0.050	0.101	0.079
1,2,4-Trichlorobenzene	0.05 µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2,4,5-Trichlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
2,4,6-Trichlorophenol	0.1 µg/g	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1+2-Methylnaphthalenes	0.59 µg/g	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
<b>Polychlorinated Biphenyls (Soil)</b>												
Aroclor 1242	-- ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1248	-- ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1254	-- ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1260	-- ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Total PCBs	0.3 ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Notes:

<sup>1</sup> Data from Guelph Chemical Laboratories Ltd. (GCL) reports for soil samples collected by Badger on monthly basis from January 2017 to December 2019.

<sup>2</sup> Full Depth Background Site Condition Standards for Residential/ Parkland/ Institutional/ Industrial/ Commercial/ Community Property Use for Coarse Textured Soils, as provided in the Table 1 of the MECOP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

-- No data or Standard available.

ND Not detected at the associated detection limit (DL).

µg/g microgram/gram

Concentration greater than referenced 2011 Table 1 Criteria.



**Table 2**  
**Summary of Pond Surface Water Quality**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

Sample ID: Report No. Sample Date:	water 49951 Jan-17	water 49954 Feb-17	water 49957 Mar-17	water 49961 Apr-17	water 49962 May-17	water 49965 Jun-17	water 49970 Jul-17	water 49972 Aug-17	water 49974 Sep-17	Oct 2017 49978 Oct-17	Nov 2017 50014 Nov-17	Nov 2017 50014 Nov-17	Dec 2017 50015 Dec-17	Dec 2017 50015 Dec-17	Jan 2018 50018 Jan-18	Jan 2018 50018 Jan-18	Feb 2018 50020 Feb-18	Feb 2018 50020 Feb-18	Mar 2018 50024 Mar-18	Mar 2018 50024 Mar-18	Apr 2018 50026 Apr-18	Apr 2018 50026 Apr-18	May 2018 50069 May-18
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**Table 2 Standards <sup>2</sup>**

	2011	Units
<b>Hydrocarbons (Water)</b>		
F1 (C6-C10)	750	µg/L
F1-BTEX		µg/L
F2 (C10-C16)	150	µg/L
F2-Naphth		µg/L
F3 (C16-C34)	500	µg/L
F3-PAH		µg/L
F4 (C34-C50)	500	µg/L
Total Hydrocarbons (C6-C50)		µg/L
<b>Semi-Volatile Organics (Water)</b>		
Biphenyl	0.5	µg/L
4-Chloroaniline	10	µg/L
Bis(2-chloroethyl)ether	5	µg/L
Bis(2-chloroisopropyl)ether	120	µg/L
2-Chlorophenol	8.9	µg/L
3,3'-Dichlorobenzidine	0.5	µg/L
2,4-Dichlorophenol	20	µg/L
Diethylphthalate	38	µg/L
Dimethylphthalate	38	µg/L
2,4-Dimethylphenol	59	µg/L
2,4-Dinitrophenol	10	µg/L
2,4-Dinitrotoluene	5	µg/L
2,6-Dinitrotoluene	5	µg/L
2,4+2,6-Dinitrotoluene	5	µg/L
Bis(2-ethylhexyl)phthalate	10	µg/L
Pentachlorophenol	30	µg/L
Phenol	890	µg/L
1,2,4-Trichlorobenzene	70	µg/L
2,4,5-Trichlorophenol	8.9	µg/L
2,4,6-Trichlorophenol	2	µg/L
<b>Polychlorinated Biphenyls (Water)</b>		
Aroclor 1242		µg/L
Aroclor 1248		µg/L
Aroclor 1254		µg/L
Aroclor 1260		µg/L
Total PCBs	3	µg/L
<b>Aggregate Organics (Water)</b>		
BOD		µg/L
<b>Physical Tests (Water)</b>		
pH		pH units
Total Suspended Solids		µg/L
<b>Anions and Nutrients (Water)</b>		
Phosphorus, Total		µg/L
<b>Organic / Inorganic Carbon (Water)</b>		
Total Organic Carbon		µg/L
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>		
Acenaphthene	4.1	µg/L
Acenaphthylene	1	µg/L
Anthracene	2.4	µg/L
Benzo(a)anthracene	1	µg/L
Benzo(a)pyrene	0.01	µg/L
Benzo(b)fluoranthene	0.1	µg/L
Benzo(g,h,i)perylene	0.2	µg/L
Benzo(k)fluoranthene	0.1	µg/L
Chrysene	0.1	µg/L
Dibenzo(ah)anthracene	0.2	µg/L
Fluoranthene	0.41	µg/L
Fluorene	120	µg/L
Indeno(1,2,3-cd)pyrene	0.2	µg/L
1+2-Methylnaphthalenes	3.2	µg/L
1-Methylnaphthalene	3.2	µg/L
2-Methylnaphthalene	3.2	µg/L
Naphthalene	11	µg/L
Phenanthrene	1	µg/L
Pyrene	4.1	µg/L

**Notes:**

- (1) Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.
- (2) Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.
- (3) PWQO=Provincial Water Quality Objective, MECP, February 1999  
IPWQO= Interim Provincial Water Quality Objective, MECP, February 1999
- (4) The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75
- (5) The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100
- (6) The IPWQO for lead is 0.005 mg/L when the hardness as CaCO3 (mg/L) is >80
- (\*) The IPWQO is for Dissolved Metals
- No data or Standard available.
- ND Not detected at the associated detection limit (DL).
- µg/L microgram/liter
- cfu/mL colony forming units/milliliter
- Concentration greater than referenced 2011 Table 2 Criteria.

**Table 2**  
**Summary of Pond Surface Water Quality**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

	Sample ID: Report No. Sample Date:	May 2018 50069 May-18	June 2018 50072 Jun-18	June 2018 50072 Jun-18	July 2018 50075 Jul-18	July 2018 50075 Jul-18	Aug 2018 50077 Aug-18	Aug 2018 50077 Aug-18	Sept 2018 50080 Sep-18	Sept 2018 50080 Sep-18	Oct 2018 50082 Oct-18	Oct 2018 50082 Oct-18	Nov 2018 50084 Nov-18	Nov 2018 50084 Nov-18	Dec 2018 50123 Dec-18	Dec 2018 50123 Dec-18	Jan 2019 50123 Jan-19	Jan 2019 50123 Jan-19	Feb 2019 50123-2 Feb-19	Feb 2019 50123-2 Feb-19	Mar 2019 50123-3 Mar-19	Mar 2019 50123-3 Mar-19	Apr 2019 50123-4 Apr-19	Apr 2019 50123-4 Apr-19	
<b>Table 2 Standards <sup>2</sup></b>																									
	<b>2011</b>	<b>Units</b>																							
<b>Metals</b>																									
Aluminum	--	48.8	34.8	41.4	40.4	34.6	29.3	39.1	34.4	40.7	45.6	33.8	33.3	20.5	55.3	29.9	48.7	52.6	42.5	43.1	33.5	38.9	FALSE	22.1	
Antimony	6	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	
Arsenic	25	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	
Barium	1000																								
Beryllium (4)	4	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	
Bismuth	--																								
Boron (total)	5000	151	176	163	151	177	187	143	152	138	141	172	113	159	120	88	133	91	109	127	102	99	89	92	
Cadmium (5)	2.7	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	
Calcium	--																								
Cesium	--																								
Chromium	50	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	
Chromium, Hexavalent	25																								
Cobalt	3.8	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	
Copper	87	1.42	1.55	1.94	1.94	1.31	2.25	1.53	1.88	1.64	1.34	2.01	2.10	1.67	4.09	2.48	2.45	2.19	1.12	3.47	2.77	1.53	3.33	3.18	
Iron	--	276	212	185	200	157	176	168	219	223	291	266	231	198	165	190	224	187	158	193	213	154	189	112	
Lead (6)	10	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	
Lithium	--																								
Magnesium	--																								
Manganese	--																								
Mercury	0.29	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	
Molybdenum	70	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	
Nickel	100	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	
Phosphorus	--																								
Potassium	--																								
Rubidium	--																								
Selenium	10	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	
Silicon	--																								
Silver	1.5																								
Sodium	490000																								
Strontium	--																								
Sulfur	--																								
Tellurium	--																								
Thallium	2.0	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	
Thorium	--																								
Tin	--																								
Titanium	--																								
Tungsten	--																								
Uranium	20.0																								
Vanadium	6.2	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	
Zinc	1100	9.9	10.4	11.9	8.8	10.2	12.3	9.5	9.6	7.8	8.9	6.2	10.1	8.8	12.4	10.6	11.4	9.8	12.9	10.4	11.1	9.3	8.5	5.7	
Zirconium	--																								
Total Plate Count	--	cfu/mL	200	200	240	120	160	180	100	120	60	250	190	100	160	250	280	220	310	180	200	140	250	200	110
E. coli	--	cfu/100 mL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Volatile Organic Compounds (Water)</b>																									
Acetone	2700																								
Benzene	5																								
Bromodichloromethane	16																								
Bromoform	25																								
Bromomethane	0.89																								
Carbon tetrachloride	0.79																								
Chlorobenzene	30																								
Dibromochloromethane	25																								
Chloroform	2.4																								
1,2-Dibromoethane																									
1,2-Dichlorobenzene	3																								
1,3-Dichlorobenzene	59																								
1,4-Dichlorobenzene	1																								
Dichlorodifluoromethane	590																								
1,1-Dichloroethane	5																								
1,2-Dichloroethane	1.6																								
1,1-Dichloroethylene	1.6																								
cis-1,2-Dichloroethylene	1.6																								
trans-1,2-Dichloroethylene	1.6																								
Methylene Chloride	50																								
1,2-Dichloropropane	5																								
cis-1,3-Dichloropropene	0.5																								
trans-1,3-Dichloropropene	0.5																								
1,3-Dichloropropene (cis & trans)	0.5																								
Ethylbenzene	2.4																								

**Table 2**  
**Summary of Pond Surface Water Quality**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

Sample ID: Report No. Sample Date:	May 2018 50069 May-18	June 2018 50072 Jun-18	June 2018 50072 Jun-18	July 2018 50075 Jul-18	July 2018 50075 Jul-18	Aug 2018 50077 Aug-18	Aug 2018 50077 Aug-18	Sept 2018 50080 Sep-18	Sept 2018 50080 Sep-18	Oct 2018 50082 Oct-18	Oct 2018 50082 Oct-18	Nov 2018 50084 Nov-18	Nov 2018 50084 Nov-18	Dec 2018 50123 Dec-18	Dec 2018 50123 Dec-18	Jan 2019 50123 Jan-19	Jan 2019 50123 Jan-19	Feb 2019 50123-2 Feb-19	Feb 2019 50123-2 Feb-19	Mar 2019 50123-3 Mar-19	Mar 2019 50123-3 Mar-19	Apr 2019 50123-4 Apr-19	Apr 2019 50123-4 Apr-19
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**Table 2 Standards <sup>2</sup>**

	2011	Units
<b>Hydrocarbons (Water)</b>		
F1 (C6-C10)	750	µg/L
F1-BTEX		µg/L
F2 (C10-C16)	150	µg/L
F2-Naphth		µg/L
F3 (C16-C34)	500	µg/L
F3-PAH		µg/L
F4 (C34-C50)	500	µg/L
Total Hydrocarbons (C6-C50)		µg/L
<b>Semi-Volatile Organics (Water)</b>		
Biphenyl	0.5	µg/L
4-Chloroaniline	10	µg/L
Bis(2-chloroethyl)ether	5	µg/L
Bis(2-chloroisopropyl)ether	120	µg/L
2-Chlorophenol	8.9	µg/L
3,3'-Dichlorobenzidine	0.5	µg/L
2,4-Dichlorophenol	20	µg/L
Diethylphthalate	38	µg/L
Dimethylphthalate	38	µg/L
2,4-Dimethylphenol	59	µg/L
2,4-Dinitrophenol	10	µg/L
2,4-Dinitrotoluene	5	µg/L
2,6-Dinitrotoluene	5	µg/L
2,4+2,6-Dinitrotoluene	5	µg/L
Bis(2-ethylhexyl)phthalate	10	µg/L
Pentachlorophenol	30	µg/L
Phenol	890	µg/L
1,2,4-Trichlorobenzene	70	µg/L
2,4,5-Trichlorophenol	8.9	µg/L
2,4,6-Trichlorophenol	2	µg/L
<b>Polychlorinated Biphenyls (Water)</b>		
Aroclor 1242		µg/L
Aroclor 1248		µg/L
Aroclor 1254		µg/L
Aroclor 1260		µg/L
Total PCBs	3	µg/L
<b>Aggregate Organics (Water)</b>		
BOD		µg/L
<b>Physical Tests (Water)</b>		
pH		pH units
Total Suspended Solids		µg/L
<b>Anions and Nutrients (Water)</b>		
Phosphorus, Total		µg/L
<b>Organic / Inorganic Carbon (Water)</b>		
Total Organic Carbon		µg/L
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>		
Acenaphthene	4.1	µg/L
Acenaphthylene	1	µg/L
Anthracene	2.4	µg/L
Benzo(a)anthracene	1	µg/L
Benzo(a)pyrene	0.01	µg/L
Benzo(b)fluoranthene	0.1	µg/L
Benzo(g,h,i)perylene	0.2	µg/L
Benzo(k)fluoranthene	0.1	µg/L
Chrysene	0.1	µg/L
Dibenz(ah)anthracene	0.2	µg/L
Fluoranthene	0.41	µg/L
Fluorene	120	µg/L
Indeno(1,2,3-cd)pyrene	0.2	µg/L
1+2-Methylnaphthalenes	3.2	µg/L
1-Methylnaphthalene	3.2	µg/L
2-Methylnaphthalene	3.2	µg/L
Naphthalene	11	µg/L
Phenanthrene	1	µg/L
Pyrene	4.1	µg/L

Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.

Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

PWQO=Provincial Water Quality Objective, MECP, February 1999  
 IPWQO= Interim Provincial Water Quality Objective, MECP, February 1999  
 The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75  
 The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100  
 The IPWQO for lead is 0.005 mg/L when the hardness as CaCO3 (mg/L) is >80  
 The IPWQO is for Dissolved Metals

No data or Standard available.  
 Not detected at the associated detection limit (DL).  
 microgram/liter  
 colony forming units/milliliter  
 Concentration greater than referenced 2011 Table 2 Criteria.



**Table 2**  
**Summary of Pond Surface Water Quality**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

Sample ID: Report No. Sample Date:	May 2019 50123-5 May-19	May 2019 50123-5 May-19	June 2019 50123-6 Jun-19	June 2019 50123-6 Jun-19	July 2019 50123-7 Jul-19	July 2019 50123-7 Jul-19	Aug 2019 50123-8 Aug-19	Aug 2019 50123-8 Aug-19	Sept 2019 50123-9 Sep-19	Sept 2019 50123-9 Sep-19	Oct 2019 50123-10 Oct-19	Oct 2019 50123-10 Oct-19	Nov 2019 50123-11 Nov-19	Nov 2019 50123-11 Nov-19	Dec 2019 50123-12 Dec-19	Dec 2019 50123-12 Dec-19	Jan 3 50139 Jan 3 2020	Jan 3 50139 Jan 3 2020	Feb 7 50139-1 Feb 7 2020	Feb 7 50139-1 Feb 7 2020	Mar 10 50139-2 Mar 10 2020	Mar 10 50139-2 Mar 10 2020	Apr 3 50139-3 Apr 3 2020
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**Table 2 Standards <sup>2</sup>**

	2011	Units
<b>Hydrocarbons (Water)</b>		
F1 (C6-C10)	750	µg/L
F1-BTEX		µg/L
F2 (C10-C16)	150	µg/L
F2-Naphth		µg/L
F3 (C16-C34)	500	µg/L
F3-PAH		µg/L
F4 (C34-C50)	500	µg/L
Total Hydrocarbons (C6-C50)		µg/L
<b>Semi-Volatile Organics (Water)</b>		
Biphenyl	0.5	µg/L
4-Chloroaniline	10	µg/L
Bis(2-chloroethyl)ether	5	µg/L
Bis(2-chloroisopropyl)ether	120	µg/L
2-Chlorophenol	8.9	µg/L
3,3'-Dichlorobenzidine	0.5	µg/L
2,4-Dichlorophenol	20	µg/L
Diethylphthalate	38	µg/L
Dimethylphthalate	38	µg/L
2,4-Dimethylphenol	59	µg/L
2,4-Dinitrophenol	10	µg/L
2,4-Dinitrotoluene	5	µg/L
2,6-Dinitrotoluene	5	µg/L
2,4+2,6-Dinitrotoluene	5	µg/L
Bis(2-ethylhexyl)phthalate	10	µg/L
Pentachlorophenol	30	µg/L
Phenol	890	µg/L
1,2,4-Trichlorobenzene	70	µg/L
2,4,5-Trichlorophenol	8.9	µg/L
2,4,6-Trichlorophenol	2	µg/L
<b>Polychlorinated Biphenyls (Water)</b>		
Aroclor 1242		µg/L
Aroclor 1248		µg/L
Aroclor 1254		µg/L
Aroclor 1260		µg/L
Total PCBs	3	µg/L
<b>Aggregate Organics (Water)</b>		
BOD		µg/L
<b>Physical Tests (Water)</b>		
pH		pH units
Total Suspended Solids		µg/L
<b>Anions and Nutrients (Water)</b>		
Phosphorus, Total		µg/L
<b>Organic / Inorganic Carbon (Water)</b>		
Total Organic Carbon		µg/L
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>		
Acenaphthene	4.1	µg/L
Acenaphthylene	1	µg/L
Anthracene	2.4	µg/L
Benzo(a)anthracene	1	µg/L
Benzo(a)pyrene	0.01	µg/L
Benzo(b)fluoranthene	0.1	µg/L
Benzo(g,h,i)perylene	0.2	µg/L
Benzo(k)fluoranthene	0.1	µg/L
Chrysene	0.1	µg/L
Dibenzo(ah)anthracene	0.2	µg/L
Fluoranthene	0.41	µg/L
Fluorene	120	µg/L
Indeno(1,2,3-cd)pyrene	0.2	µg/L
1+2-Methylnaphthalenes	3.2	µg/L
1-Methylnaphthalene	3.2	µg/L
2-Methylnaphthalene	3.2	µg/L
Naphthalene	11	µg/L
Phenanthrene	1	µg/L
Pyrene	4.1	µg/L

Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.

Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

PWQO=Provincial Water Quality Objective, MECP, February 1999  
 IPWQO= Interim Provincial Water Quality Objective, MECP, February 1999  
 The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75  
 The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100  
 The IPWQO for lead is 0.005 mg/L when the hardness as CaCO3 (mg/L) is >80  
 The IPWQO is for Dissolved Metals  
 No data or Standard available.  
 Not detected at the associated detection limit (DL).  
 microgram/liter  
 colony forming units/milliliter  
 Concentration greater than referenced 2011 Table 2 Criteria.

**Table 2**  
**Summary of Pond Surface Water Quality**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

	Sample ID: Report No. Sample Date:	Apr 3 50139-3 Apr 3 2020	W-11210029-28052020-CD002 L2453062-1 May 28 2020	W-11210029-040620-AS-004 L2456339-1 June 4 2020	W-11210029-20200611-CD-006 L2459298-1 June 11 2020	Average of CD002, AS004 and CD006 May 28-June 11	W11210029-20200618-8 L2465490 June 18 2020	W-11210029-20200625-10 L2466205-1 June 25 2020	W-11210029-20200716-16 L2475470-1 July 16 2020	W-11210029-20200806-22 L2484852-1 August 6 2020	W-11210029-20200827-28 L2495218 August 27 2020	W-11210029-20200903-30 L2498566-1 September 3 2020	W-11210029-20200910-32 L2501541-1 September 10 2020	
<b>Table 2 Standards <sup>2</sup></b>														
	<b>2011</b>													
	<b>Units</b>													
<b>Metals</b>														
Aluminum	--	µg/L	19.7	447	250	876	524.33	604	<5.0	<5.0	<5.0	251	6.0	626
Antimony	6	µg/L	ND(2)	0.18	0.19	0.21	0.19	0.25	<0.1	<0.1	<0.1	0.21	<0.1	0.24
Arsenic	25	µg/L	ND(2)	0.92	0.86	1.27	1.02	1.19	5.13	5.25	7.84	1.27	5.61	1.82
Barium	1000	µg/L		11.8	12.6	18	14.13	14.9	64	63.1	49.6	13.5	67.2	21.3
Beryllium (4)	4	µg/L	ND(2)	<0.10	<0.10	<0.10	<0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bismuth	--	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron (total)	5000	µg/L	32.8	17	15	15	15	16	14	14	17	15	17	17
Cadmium (5)	2.7	µg/L	ND(0.2)	0.0168	0.0093	0.0356	0.02	0.0333	<0.005	<0.005	<0.005	0.0099	<0.005	0.0217
Calcium	--	µg/L		36500	31000	32100	33200.00	32100	47400	46900	46900	24900	29400	29400
Cesium	--	µg/L		0.033	0.017	0.081	0.04	0.051	<0.01	<0.01	<0.01	0.018	<0.01	0.052
Chromium	50	µg/L	ND(2)	0.62	<0.05	1.2	0.91	0.92	<0.5	<0.5	<0.5	<0.5	<0.5	0.84
Chromium, Hexavalent	25	µg/L		<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	3.8	µg/L	ND(0.5)	0.22	0.15	0.52	0.30	0.39	<0.1	<0.1	<0.1	0.15	<0.1	0.28
Copper	87	µg/L	1.58	1.91	1	3	2.23	3	<0.5	<0.5	<0.5	1.59	<0.5	3
Iron	--	µg/L	165	444	256	1140	613.33	823	252	262	287	688	<0.5	688
Lead (6)	10	µg/L	ND(2)	1.15	0.694	3.21	1.68	2.83	<0.005	<0.05	0.141	1.02	<0.05	1.78
Lithium	--	µg/L		1.5	<1.0	1.3	1.40	1.3	2.7	2.9	3.5	<1.0	<1.0	<1.0
Magnesium	--	µg/L		8570	8410	8770	8583.33	9750	25400	26600	30200	26800	7850	7850
Manganese	--	µg/L		35.9	18.6	44.7	33.07	43.8	8.29	8.48	15.5	9.08	37.1	37.1
Mercury	0.29	µg/L	ND(0.2)	<0.05	<0.05	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	70	µg/L	ND(2)	2.41	2.65	2.38	2.48	2.44	0.721	0.722	0.596	2.74	0.754	2.99
Nickel	100	µg/L	ND(2)	0.98	0.7	1.6	1.09	1.27	<0.5	<0.5	1.22	0.76	<0.5	1.1
Phosphorus	--	µg/L		60	<50.0	66	57.50	66	<50.0	<50.0	<50.0	<50.0	<50.0	59
Potassium	--	µg/L		2530	2460	2570	2520.00	2570	960	958	898	2360	1010	2630
Rubidium	0.86	µg/L		0.86	0.59	1.36	0.94	1.03	0.36	0.3	<0.02	0.59	0.31	1.28
Selenium	10	µg/L	ND(5)	0.115	0.108	0.105	0.11	0.158	<0.05	<0.05	<0.05	0.103	<0.05	0.134
Silicon	--	µg/L		860	550	1450	953.33	1020	7360	7520	8380	7490	360	1070
Silver	1.5	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium	490000	µg/L		30600	31800	31000	31133.33	31800	5750	5810	31700	6220	31700	31700
Strontium	--	µg/L		105	103	106	104.67	108	334	327	145	86.3	3.22	102
Sulfur	--	µg/L		6620	6620	6520	6590.00	6830	7030	7380	18300	7130	6060	6060
Tellurium	--	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	2.0	µg/L	ND(0.2)	<0.01	<0.01	0.013	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium	--	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	--	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium	--	µg/L		13.9	6.34	21.3	13.85	16.1	<0.3	<0.3	5.22	<0.3	<0.3	15.5
Tungsten	--	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	20.0	µg/L		0.563	0.543	0.59	0.57	0.599	0.555	0.564	0.297	0.493	0.61	0.472
Vanadium	6.2	µg/L	ND(2)	1.14	0.88	2.06	1.36	1.73	<0.5	<0.5	1.25	<0.5	<0.5	1.89
Zinc	1100	µg/L	7.4	4.8	<3.0	14.0	9.40	14.3	<3.0	<3.0	44.2	<3.0	<3.0	7.6
Zirconium	--	µg/L		0.4	<0.2	0.54	0.48	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	0.35
Total Plate Count	--	cfu/mL	250											
E. coli	--	cfu/100 mL	0											
<b>Volatile Organic Compounds (Water)</b>														
Acetone	2700	µg/L		<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Benzene	5	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	16	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	25	µg/L		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane	0.89	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	0.79	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	30	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	25	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	2.4	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	--	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	3	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	59	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	1	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	590	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	5	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	1.6	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	1.6	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	1.6	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	50	µg/L		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	5	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	0.5	µg/L		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	0.5	µg/L		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	0.5	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	2.4	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	51	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	1800	µg/L		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	640	µg/L		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
MTBE	15	µg/L												

**Table 2**  
**Summary of Pond Surface Water Quality**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

Sample ID: Report No. Sample Date:	Apr 3 50139-3 Apr 3 2020	W-11210029-28052020-CD002 L2453062-1 May 28 2020	W-11210029-040620-AS-004 L2456339-1 June 4 2020	W-11210029-20200611-CD-006 L2459298-1 June 11 2020	Average of CD002, AS004 and CD006 May 28-June 11	W11210029-20200618-8 L2465490 June 18 2020	W-11210029-20200625-10 L2466205-1 June 25 2020	W-11210029-20200716-16 L2475470-1 July 16 2020	W-11210029-20200806-22 L2484852-1 August 6 2020	W-11210029-20200827-28 L2495218 August 27 2020	W-11210029-20200903-30 L2498566-1 September 3 2020	W-11210029-20200910-32 L2501541-1 September 10 2020	
<b>Table 2 Standards <sup>2</sup></b>													
	<b>2011</b>	<b>Units</b>											
<b>Hydrocarbons (Water)</b>													
F1 (C6-C10)	750	µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	
F1-BTEX		µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	
F2 (C10-C16)	150	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
F2-Naphth		µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
F3 (C16-C34)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	
F3-PAH		µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	
F4 (C34-C50)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370	
<b>Semi-Volatile Organics (Water)</b>													
Biphenyl	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	
4-Chloroaniline	10	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	
2-Chlorophenol	8.9	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
Diethylphthalate	38	µg/L	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
Dimethylphthalate	38	µg/L	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2,4-Dinitrophenol	10	µg/L	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	
2,4+2,6-Dinitrotoluene	5	µg/L	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	
Bis(2-ethylhexyl)phthalate	10	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Pentachlorophenol	30	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Phenol	890	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
<b>Polychlorinated Biphenyls (Water)</b>													
Aroclor 1242		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Aroclor 1248		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Aroclor 1254		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Aroclor 1260		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Total PCBs	3	µg/L	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	
<b>Aggregate Organics (Water)</b>													
BOD		µg/L	4100	<3000	<3000	2366.67							
<b>Physical Tests (Water)</b>													
pH		pH units	8.23	8.46	8.16	8.28							
Total Suspended Solids		µg/L	12800	4600	22600	13333.33							
<b>Anions and Nutrients (Water)</b>													
Phosphorus, Total		µg/L	36.5	25.7	51.6	37.93	35.4	4.5	7.0	7.0	38.1	3.2	48.8
<b>Organic / Inorganic Carbon (Water)</b>													
Total Organic Carbon		µg/L	5730	4830	7240	5933.33							
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>													
Acenaphthene	4.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Acenaphthylene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Anthracene	2.4	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Benzo(a)anthracene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Benzo(a)pyrene	0.01	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Benzo(b)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Benzo(g,h,i)perylene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Benzo(k)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Chrysene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Dibenz(ah)anthracene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Fluoranthene	0.41	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Fluorene	120	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Indeno(1,2,3-cd)pyrene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
1+2-Methylnaphthalenes	3.2	µg/L	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	
1-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
2-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Naphthalene	11	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Phenanthrene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Pyrene	4.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	

Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.

Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

PWQO=Provincial Water Quality Objective, MECP, February 1999  
 IPWQO= Interim Provincial Water Quality Objective, MECP, February 1999  
 The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75  
 The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100  
 The IPWQO for lead is 0.005 mg/L when the hardness as CaCO3 (mg/L) is >80

The IPWQO is for Dissolved Metals  
 No data or Standard available.  
 Not detected at the associated detection limit (DL).  
 microgram/liter  
 colony forming units/milliliter  
 Concentration greater than referenced 2011 Table 2 Criteria.

**Table 2**  
**Summary of Pond Surface Water Quality**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

Sample ID: Report No. Sample Date:	W-11210029-20200917-34 L2504779-1 September 17 2020	W-11210029-20200924-36 L2507865-1 September 24 2020	W-11210029-20201001-38 L2511128-1 October 1 2020	W-11210029-20201008-40 L2514428-1 October 8 2020	W-11210029-20201015-42 L2517112-1 October 15 2020	W-11210029-20201022-44 L2520323-1 October 22 2020	W-11210029-20201029-46 L2523350-1 October 29 2020	W-11210029-20201105-48 L2526411-1 November 5 2020	W-11210029-20201112-50 L2528910-1 November 12 2020	W-11210029-20201119-52 L2531509-1 November 19 2020	W-11210029-20201126-54 L2534021-1 November 26 2020	W-11210029-20201203-56 L2536637-1 December 3 2020	W-11210029-20201210-58 L2539264-1 December 10 2020
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Table 2 Standards <sup>2</sup>

	2011	Units													
<b>Metals</b>															
Aluminum	--	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	576	<5.0	<5.0
Antimony	6	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.23	<0.1	<0.1
Arsenic	25	µg/L	5.42	6	11.1	5.35	5.48	5.55	5.61	5.56	5.52	5.52	1.08	5.56	5.52
Barium	1000	µg/L	49.4	50	51.4	51.1	53.7	52.3	48.7	48	57.1	25.3	53.6	51.3	50.6
Beryllium (4)	4	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bismuth	--	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron (total)	5000	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	19	<10.0	<10.0
Cadmium (5)	2.7	µg/L	<0.005	<0.005	0.0068	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0226	<0.005	<0.005
Calcium	--	µg/L	70600	69100	69300	71700	70500	74800	73000	72400	38600	67200	67400	70700	70700
Cesium	--	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	<0.01
Chromium	50	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.15	<0.5	<0.5
Chromium, Hexavalent	25	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	3.8	µg/L	<0.1	<0.1	0.32	<0.1	<0.1	0.19	0.11	<0.1	0.11	<0.1	0.35	<0.1	<0.1
Copper	87	µg/L	<0.5	<0.5	3	<0.5	<0.5	1	1	<0.5	<0.5	<0.5	2.17	<0.5	1.88
Iron	--	µg/L	434	474	1760	387	432	478	386	620	459	403	690	459	91
Lead (6)	10	µg/L	0.108	0.131	0.959	0.055	0.072	0.647	0.135	<0.05	0.103	1.82	<0.05	<0.05	0.07
Lithium	--	µg/L	4.2	3.5	3.9	4.0	4.2	3.3	4.1	<1.0	3.9	<1.0	3.9	3.6	3.6
Magnesium	--	µg/L	33500	31700	32100	33900	33300	34300	31900	31800	34000	8280	32300	32300	32400
Manganese	--	µg/L	10.2	9.55	11.2	10.6	9.95	10.7	9.95	9.18	11.4	32.4	9.94	10.6	9.84
Mercury	0.29	µg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	70	µg/L	0.59	0.563	0.544	0.586	0.544	0.563	0.58	0.599	0.531	2.98	0.601	0.594	0.599
Nickel	100	µg/L	0.97	0.96	12.5	<0.5	1.39	3.01	1.98	<0.5	0.89	1.32	<0.5	<0.5	0.78
Phosphorus	--	µg/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Potassium	--	µg/L	950	973	986	980	930	1020	967	921	1040	2960	984	976	987
Rubidium	--	µg/L	0.21	<0.2	<0.2	<0.2	<0.2	0.21	<0.2	<0.2	0.23	1.18	<0.2	0.2	0.21
Selenium	10	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.121	<0.05	<0.05	<0.05	<0.05
Silicon	--	µg/L	8850	8650	9160	8700	9130	8470	9290	8250	1260	9010	8870	9010	8870
Silver	1.5	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium	490000	µg/L	7920	7700	7730	8200	7640	8040	7710	8030	34800	7420	7530	7460	<0.05
Strontium	--	µg/L	153	150	154	147	150	153	144	160	111	155	155	152	152
Sulfur	--	µg/L	20500	19900	19500	19300	20700	17700	19100	19700	7870	20600	19900	18800	18800
Tellurium	--	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	2.0	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01
Thorium	--	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	--	µg/L	<0.1	<0.1	0.18	<0.1	<0.1	0.17	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium	--	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	17.5	<0.3	<0.3	<0.3	<0.3
Tungsten	--	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	20.0	µg/L	0.251	0.276	0.26	0.254	0.247	0.264	0.268	0.261	0.264	0.653	0.241	0.242	0.272
Vanadium	6.2	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.56	<0.5	<0.5	<0.5
Zinc	1100	µg/L	4.6	8.4	346.0	6.3	14.2	8.2	9.1	3	39.3	8.4	3.7	22.9	10.4
Zirconium	--	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.29	<0.2	<0.2	<0.2
Total Plate Count	--	cfu/mL													
E. coli	--	cfu/100 mL													
<b>Volatile Organic Compounds (Water)</b>															
Acetone	2700	µg/L	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Benzene	5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	16	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	25	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane	0.89	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	0.79	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	30	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	25	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	2.4	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	--	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	3	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	59	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	1	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	590	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	50	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30	<0.30										

**Table 2**  
**Summary of Pond Surface Water Quality**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

Sample ID: Report No. Sample Date:	W-11210029-20200917-34 L2504779-1 September 17 2020	W-11210029-20200924-36 L2507865-1 September 24 2020	W-11210029-20201001-38 L2511128-1 October 1 2020	W-11210029-20201008-40 L2514428-1 October 8 2020	W-11210029-20201015-42 L2517112-1 October 15 2020	W-11210029-20201022-44 L2520323-1 October 22 2020	W-11210029-20201029-46 L2523350-1 October 29 2020	W-11210029-20201105- 48 L2526411-1 November 5 2020	W-11210029-20201112-50 L2528910-1 November 12 2020	W-11210029-20201119-52 L2531509-1 November 19 2020	W-11210029-20201126-54 L2534021-1 November 26 2020	W-11210029-20201203-56 L2536637-1 December 3 2020	W-11210029-20201210-58 L2539264-1 December 10 2020	
<b>Table 2 Standards <sup>2</sup></b>														
	<b>2011</b>	<b>Units</b>												
<b>Hydrocarbons (Water)</b>														
F1 (C6-C10)	750	µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370
<b>Semi-Volatile Organics (Water)</b>														
Biphenyl	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2-Chlorophenol	8.9	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Diethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57
Bis(2-ethylhexyl)phthalate	10	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Pentachlorophenol	30	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Phenol	890	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
<b>Polychlorinated Biphenyls (Water)</b>														
Aroclor 1242		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total PCBs	3	µg/L	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
<b>Aggregate Organics (Water)</b>														
BOD		µg/L												
<b>Physical Tests (Water)</b>														
pH		pH units												
Total Suspended Solids		µg/L												
<b>Anions and Nutrients (Water)</b>														
Phosphorus, Total		µg/L	4.6	<3.0	5.8	6.3	4.2	6.2	6.3	5.6	5.7	29.4	4.9	6.1
<b>Organic / Inorganic Carbon (Water)</b>														
Total Organic Carbon		µg/L												
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>														
Acenaphthene	4.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	2.4	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenz(a,h)anthracene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	0.41	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	120	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2	µg/L	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Naphthalene	11	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.

Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

PWQO=Provincial Water Quality Objective, MECP, February 1999  
 IPWQO= Interim Provincial Water Quality Objective, MECP, February 1999  
 The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75  
 The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100  
 The IPWQO for lead is 0.005 mg/L when the hardness as CaCO3 (mg/L) is >80  
 The IPWQO is for Dissolved Metals

No data or Standard available.  
 Not detected at the associated detection limit (DL).  
 microgram/liter  
 colony forming units/milliliter  
 Concentration greater than referenced 2011 Table 2 Criteria.



**Table 2**  
**Summary of Pond Surface Water Quality**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

Sample ID: Report No. Sample Date:	W-11210029-20201217-60 L2541620-1 December 17 2020	W-11210029-20201223-62 L2543501-1 December 23 2020	W-11210029-20201230-64 L2544486-1 December 30 2020	W-11210029-202110107-66 L2546293-1 January 7 2021	W-11210029-20210114-68 L2548349-1 January 14 2021	W-11210029-20210121-70 L2550621-1 January 21 2021	W-11210029-01282021-EN-72 L2552636-1 January 28 2021	W-11210029-02042021-EN-74 L2554837-1 February 4 2021	W-11210029-2021-EN-76 L2556913-1 February 11 2021	W-11210029-2021-EN-78 L2556959-1 February 18 2021	W-11210029-2021-EN-80 L2561254-1 February 25 2021	W-11210029-2021-EN-82 L2563750-1 March 4 2021	W-11210029-2021-EN-84 L2565993-1 March 11 2021	
<b>Table 2 Standards <sup>2</sup></b>														
	<b>2011</b>	<b>Units</b>												
<b>Hydrocarbons (Water)</b>														
F1 (C6-C10)	750	µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370
<b>Semi-Volatile Organics (Water)</b>														
Biphenyl	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2-Chlorophenol	8.9	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Diethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57
Bis(2-ethylhexyl)phthalate	10	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Pentachlorophenol	30	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Phenol	890	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
<b>Polychlorinated Biphenyls (Water)</b>														
Aroclor 1242		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total PCBs	3	µg/L	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
<b>Aggregate Organics (Water)</b>														
BOD		µg/L						<3000	<3000	<3000	<3000	<3000	<3000	<3000
<b>Physical Tests (Water)</b>														
pH		pH units						7.99	8.4	8.07	8.06	8.03	8.21	8.04
Total Suspended Solids		µg/L						<3000	<3000	<3000	<3000	<3000	<3000	<3000
<b>Anions and Nutrients (Water)</b>														
Phosphorus, Total		µg/L	<3.0	6.4	5.3	5	5	5.9	3.8	3.1	<3.0	3.1	<3.0	4.5
<b>Organic / Inorganic Carbon (Water)</b>														
Total Organic Carbon		µg/L						3470	2250	1110	4420	1270	2090	1350
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>														
Acenaphthene	4.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	2.4	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	0.41	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	120	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2	µg/L	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Naphthalene	11	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.

Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

PWQO=Provincial Water Quality Objective, MECP, February 1999  
 IPWQO= Interim Provincial Water Quality Objective, MECP, February 1999  
 The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75  
 The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100  
 The IPWQO for lead is 0.005 mg/L when the hardness as CaCO3 (mg/L) is >80  
 The IPWQO is for Dissolved Metals

No data or Standard available.  
 Not detected at the associated detection limit (DL).  
 microgram/liter  
 colony forming units/milliliter  
 Concentration greater than referenced 2011 Table 2 Criteria.



**Table 2**  
**Summary of Pond Surface Water Quality**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

Sample ID: Report No. Sample Date:	W-11210029-2021-EN-86 L2568425-1 March 18 2021	W-11210029-2021-EN-88 L2570492-1 March 25 2021	W-11210029-2021-EN-90 L2572809-1 April 1 2021	W-11210029-2021-EN-92 L2574578-1 April 8 2021	W-11210029-2021-EN-94 L2576971-1 April 15 2021	W-11210029-042221-EN-96 L2579469-1 April 22 2021	W-11210029-2021-EN-98 L2581986-1 April 29 2021	W-11210029-2021-EN-100 L2584827-1 May 6 2021	W-11210029-2021-EN-102 L2587520-1 May 13 2021	W-11210029-2021-EN-104 L2590572-1 May 20 2021	W-11210029-2021-EN-106 L2593282-1 May 27 2021	W-11210029-030621-EN-108 L2596384-1 June 3 2021
<b>Table 2 Standards <sup>2</sup></b>												
	<b>2011</b>	<b>Units</b>										
<b>Hydrocarbons (Water)</b>												
F1 (C6-C10)	750	µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370
<b>Semi-Volatile Organics (Water)</b>												
Biphenyl	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2-Chlorophenol	8.9	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Diethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57
Bis(2-ethylhexyl)phthalate	10	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Pentachlorophenol	30	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Phenol	890	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
<b>Polychlorinated Biphenyls (Water)</b>												
Aroclor 1242		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total PCBs	3	µg/L	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
<b>Aggregate Organics (Water)</b>												
BOD		µg/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000
<b>Physical Tests (Water)</b>												
pH		pH units	8.03	7.91	8.03	8.10	8.25	8.19	8.06	7.90	7.81	7.89
Total Suspended Solids		µg/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000
<b>Anions and Nutrients (Water)</b>												
Phosphorus, Total		µg/L	5.4	3.6	4.8	<3.0	<3.0	<3.0	<3.0	3.6	<3.0	<3.0
<b>Organic / Inorganic Carbon (Water)</b>												
Total Organic Carbon		µg/L	1660	1660	1700	2160	1350	1970	2390	1410	2300	1930
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>												
Acenaphthene	4.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	2.4	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	0.41	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	120	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2	µg/L	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Naphthalene	11	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.

Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

PWQO=Provincial Water Quality Objective, MECP, February 1999  
 IPWQO= Interim Provincial Water Quality Objective, MECP, February 1999  
 The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75  
 The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100  
 The IPWQO for lead is 0.005 mg/L when the hardness as CaCO3 (mg/L) is >80  
 The PWQO is for Dissolved Metals

No data or Standard available.

Not detected at the associated detection limit (DL).

microgram/liter  
 colony forming units/milliliter  
 Concentration greater than referenced 2011 Table 2 Criteria.



**Table 2**  
**Summary of Pond Surface Water Quality**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

Sample ID: Report No. Sample Date:	W-11210029-2021-EN-110 L2599772-1 June 10 2021	W-11210029-2021-EN-112 L2602819-1 June 17 2021	W-11210029-2021-EN-114 L2605965-1 June 24 2021	W-11210029-070221-EN-116 L2609238-1 July 2 2021	W-11210029-080721-EN-118 L2611503-1 July 8 2021	W-11210029-150721-EN-120 L2614438-1 July 15 2021	W-11210029-220721-EN-122 L2617393-1 July 22 2021	W-11210029-290721-124 L2620407-1 July 29 2021	W-11210029-12/08/21-EN-126 L2626045-1 Aug 12 2021	W-11210029-21-EN-128 L2629035-1 Aug 19 2021	W-11210029-21-EN-130 L2632022-1 Aug 26 2021	W-11210029-020921-EN-132 L2635115-1 Sept 2 2021
<b>Table 2 Standards <sup>2</sup></b>												
	<b>2011</b>	<b>Units</b>										
<b>Hydrocarbons (Water)</b>												
F1 (C6-C10)	750	µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370
<b>Semi-Volatile Organics (Water)</b>												
Biphenyl	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2-Chlorophenol	8.9	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Diethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57
Bis(2-ethylhexyl)phthalate	10	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Pentachlorophenol	30	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Phenol	890	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.75	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
<b>Polychlorinated Biphenyls (Water)</b>												
Aroclor 1242		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total PCBs	3	µg/L	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
<b>Aggregate Organics (Water)</b>												
BOD		µg/L	<3000	<2000	<3000	<3000	<2000	<3000	<3000	<3000	<3000	<3000
<b>Physical Tests (Water)</b>												
pH		pH units	7.99	7.78	7.87	7.92	8.05	7.76	8.13	7.54	8.00	7.80
Total Suspended Solids		µg/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000
<b>Anions and Nutrients (Water)</b>												
Phosphorus, Total		µg/L	<3.0	<3.0	3.3	<3.0	<3.0	4.3	3.1	<3.0	4.1	3.4
<b>Organic / Inorganic Carbon (Water)</b>												
Total Organic Carbon		µg/L	1780	1430	2280	1330	1250	1590	1330	1300	2330	1440
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>												
Acenaphthene	4.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	2.4	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenz(a,h)anthracene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	0.41	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	120	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2	µg/L	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Naphthalene	11	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.

Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

PWQO=Provincial Water Quality Objective, MECP, February 1999  
 IPWQO= Interim Provincial Water Quality Objective, MECP, February 1999  
 The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75  
 The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100  
 The IPWQO for lead is 0.005 mg/L when the hardness as CaCO3 (mg/L) is >80

The IPWQO is for Dissolved Metals  
 No data or Standard available.  
 Not detected at the associated detection limit (DL).  
 microgram/liter  
 colony forming units/milliliter  
 Concentration greater than referenced 2011 Table 2 Criteria.

**Table 2**  
**Summary of Pond Surface Water Quality**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

	Sample ID: Report No. Sample Date:	W-11210029-090921-EN-134 L2637443-1 Sept 9 2021	W-11210029-21-EN-136 L2640410-1 Sept 16 2021	W-11210029-092321-EN-138 L2643111-1 Sept 23 2021	W-11210029-093021-EN-140 L2645934-1 Sept 30 2021	W-11210029-100721-EN-142 L2648968-1 Oct 7 2021	W-11210029-101421-EN-144 L2651258-1 Oct 14 2021	
<b>Table 2 Standards <sup>2</sup></b>								
	<b>2011</b>	<b>Units</b>						
<b>Metals</b>								
Aluminum	--	µg/L	<5.0	<5.0	<5.0	<50.0	14.6	<5.0
Antimony	6	µg/L	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1
Arsenic	25	µg/L	2.01	2.37	2.12	3.6	2.2	2.21
Barium	1000	µg/L	51.7	49.0	50.2	52.8	54.1	50.0
Beryllium (4)	4	µg/L	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1
Bismuth	--	µg/L	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05
Boron (total)	5000	µg/L	<10.0	<10.0	<10.0	<100	10	10
Cadmium (5)	2.7	µg/L	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005
Calcium	--	µg/L	68100	69200	70200	75300	76500	71600
Cesium	--	µg/L	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01
Chromium	50	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	1.56
Chromium, Hexavalent	25	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	3.8	µg/L	0.12	0.11	0.11	<1.0	0.11	0.16
Copper	87	µg/L	0.74	1.11	1.24	<5.0	1.48	1.65
Iron	--	µg/L	142	254	198	470	174	237
Lead (6)	10	µg/L	0.063	0.074	0.143	<0.50	0.15	0.174
Lithium	--	µg/L	3.4	2.7	3.9	<10	4.2	4.6
Magnesium	--	µg/L	33300	32300	31600	35500	34200	35700
Manganese	--	µg/L	29.9	27	28.1	30.5	23.8	28.8
Mercury	0.29	µg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	70	µg/L	0.495	0.533	0.530	0.525	0.525	0.539
Nickel	100	µg/L	<0.5	<0.5	0.63	<5.0	0.59	1.42
Phosphorus	--	µg/L	<50.0	<50.0	<50.0	500	<50.0	<50.0
Potassium	--	µg/L	994	985	990	1040	1060	1000
Rubidium	--	µg/L	<0.2	<0.2	<0.2	<2.0	0.21	0.22
Selenium	10	µg/L	<0.05	<0.05	<0.05	<0.50	<0.05	<0.05
Silicon	--	µg/L	8600	8530	9170	9300	9540	9180
Silver	1.5	µg/L	<0.05	<0.05	<0.05	<0.50	<0.05	<0.05
Sodium	490000	µg/L	6690	6550	6340	7240	7440	6740
Strontium	--	µg/L	143	142	144	147	155	141
Sulfur	--	µg/L	16500	17000	17900	17500	19000	17700
Tellurium	--	µg/L	<0.2	<0.2	<0.2	<2.0	<0.2	<0.2
Thallium	2.0	µg/L	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01
Thorium	--	µg/L	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1
Tin	--	µg/L	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1
Titanium	--	µg/L	<0.3	<0.3	<0.3	<3.0	0.67	<0.3
Tungsten	--	µg/L	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1
Uranium	20.0	µg/L	0.212	0.230	0.223	0.23	0.234	0.216
Vanadium	6.2	µg/L	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5
Zinc	1100	µg/L	6.1	9.2	6.7	<30.0	8.3	12.7
Zirconium	--	µg/L	<0.2	<0.2	<0.2	<2.0	<0.2	<0.2
Total Plate Count	--	cfu/mL						
E. coli	--	cfu/100 mL						
<b>Volatile Organic Compounds (Water)</b>								
Acetone	2700	µg/L	<30	<30	<30	<30	<30	<30
Benzene	5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	16	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	25	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane	0.89	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	0.79	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	30	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	25	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	2.4	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	--	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	3	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	59	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	1	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	590	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	50	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	0.5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	2.4	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	51	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	1800	µg/L	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	640	µg/L	<20	<20	<20	<20	<20	<20
MTBE	15	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene	5.4	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	1.1	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	1	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	24	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	200	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	4.7	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	150	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	0.5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
o-Xylene	--	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
m+p-Xylenes	--	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Xylenes (Total)	300	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

**Table 2**  
**Summary of Pond Surface Water Quality**  
**(January 2017 to October 2021)**  
**6678 Wellington Road 34**  
**Cambridge, Ontario**

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<b>Table 2 Standards <sup>2</sup></b>							
	<b>2011</b>	<b>Units</b>					
<b>Hydrocarbons (Water)</b>							
F1 (C6-C10)	750	µg/L	<25	<25	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370	<370	<370
<b>Semi-Volatile Organics (Water)</b>							
Biphenyl	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2-Chlorophenol	8.9	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30
Diethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.57	<0.57	<0.57	<0.57	<0.57
Bis(2-ethylhexyl)phthalate	10	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Pentachlorophenol	30	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Phenol	890	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
<b>Polychlorinated Biphenyls (Water)</b>							
Aroclor 1242		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Total PCBs	3	µg/L	<0.040	<0.040	<0.040	<0.040	<0.040
<b>Aggregate Organics (Water)</b>							
BOD		µg/L	<2000	<3000	<2000	<3000	<2000
<b>Physical Tests (Water)</b>							
pH		pH units	8.03	8.26	7.98	8.04	7.97
Total Suspended Solids		µg/L	<3000	<3000	<3000	<3000	<3000
<b>Anions and Nutrients (Water)</b>							
Phosphorus, Total		µg/L	7.5	<3.0	4.3	6.8	<3.0
<b>Organic / Inorganic Carbon (Water)</b>							
Total Organic Carbon		µg/L	1540	2890	1400	3960	2070
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>							
Acenaphthene	4.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	2.4	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	0.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	0.41	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	120	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2	µg/L	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Naphthalene	11	µg/L	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020

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 The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100  
 The IPWQO for lead is 0.005 mg/L when the hardness as CaCO3 (mg/L) is >80  
 The PWQO is for Dissolved Metals  
 No data or Standard available.  
 Not detected at the associated detection limit (DL).  
 microgram/liter  
 colony forming units/milliliter  
 Concentration greater than referenced 2011 Table 2 Criteria.

Table 3

Summary of Groundwater Quality for  
 MW1-20, MW2-20, and MW3-20  
 Hydrogeologic Impact Assessment  
 6678 Wellington Road 34,  
 Cambridge, Ontario

Location:	MW1-20	MW1-20	MW2-20	MW2-20	MW2-20
Sample ID:	GW-11210029-112520-MW-1	GW-11210029-120420-MW-01	GW-11210029-112420-MW-2	GW-11210029-112420-MW-2D	GW-11210029-120420-MW-02
Report No.:	L2533335-4	L2537182-1	L2533335-1	L2533335-2	L2537182-2
Sample Date:	25-Nov-20	4-Dec-2020	24-Nov-20	24-Nov-20 DUPLICATE	4-Dec-2020

Table 2 Standards<sup>2</sup>    Table 3 Standards<sup>3</sup>

**Physical Tests**

	Table 2 Standards <sup>2</sup>	Table 3 Standards <sup>3</sup>	Units	MW1-20	MW1-20	MW2-20	MW2-20	MW2-20
Conductivity			mS/cm	0.557	0.632	0.864	0.867	0.688
pH			pH Units	8.07	7.68	7.46	7.68	7.69

**Anions and Nutrients**

Chloride	790000	2300000	ug/L	8170	11.7	8110	8000	5.40
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**Cyanides**

Cyanide, Weak Acid Diss	66	66	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0
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**Total Metals**

Aluminum			µg/L	352	366	6.6	6.4	9.2
Antimony			µg/L	0.23	0.21	<0.1	<0.1	<0.1
Arsenic			µg/L	0.57	0.55	0.5	0.5	0.51
Barium			µg/L	72.9	93.9	78.3	77.4	53.1
Beryllium			µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Bismuth			µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Boron (total)			µg/L	24	29	68	70	43
Cadmium			µg/L	0.0257	0.0319	0.101	0.102	0.0789
Calcium			µg/L	71400	91000	93700	95400	96100
Cesium			µg/L	0.033	0.039	<0.01	<0.01	<0.01
Chromium			µg/L	0.88	0.97	<0.5	<0.5	<0.5
Chromium, Hexavalent			µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Cobalt			µg/L	0.59	0.66	1.59	1.63	0.66
Copper			µg/L	1.39	1.43	18	17.5	10.4
Iron			µg/L	417	439	<10.0	<10.0	<10.0
Lead			µg/L	0.628	0.725	0.27	0.171	0.083
Lithium			µg/L	9.1	12.4	2.6	2.7	1.9
Magnesium			µg/L	30100	34200	34300	34600	31000
Manganese			µg/L	114	135	354	357	140
Mercury			µg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum			µg/L	4.24	3.25	1.14	1.11	0.528
Nickel			µg/L	1.46	1.73	8.97	9.19	4.90
Phosphorus			µg/L	<50.0	<50.0	<50.0	<50.0	<50.0
Potassium			µg/L	4100	5560	63200	63700	31200
Rubidium			µg/L	1	0.99	10.4	10.5	5.87
Selenium			µg/L	0.074	0.109	0.119	0.125	0.113
Silicon			µg/L	6110	7050	4980	4960	4650
Silver			µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium			µg/L	8500	9850	6570	6780	4900
Strontium			µg/L	257	269	156	155	119
Sulfur			µg/L	8360	8870	7180	7080	5210
Tellurium			µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium			µg/L	0.011	0.012	0.112	0.113	0.068
Thorium			µg/L	<0.1	0.11	<0.1	<0.1	<0.1
Tin			µg/L	0.16	0.28	<0.1	<0.1	<0.1
Titanium			µg/L	12.8	14.2	<0.3	<0.3	0.53
Tungsten			µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium			µg/L	0.879	0.905	0.608	0.609	0.428
Vanadium			µg/L	0.92	1.040	<0.5	<0.5	<0.5
Zinc			µg/L	6.5	10.2	25.1	25.3	18.5
Zirconium			µg/L	0.37	0.40	<0.2	<0.2	<0.2

Table 3

**Summary of Groundwater Quality for  
MW1-20, MW2-20, and MW3-20  
Hydrogeologic Impact Assessment  
6678 Wellington Road 34,  
Cambridge, Ontario**

Location:	MW1-20	MW1-20	MW2-20	MW2-20	MW2-20
Sample ID:	GW-11210029-112520-MW-1	GW-11210029-120420-MW-01	GW-11210029-112420-MW-2	GW-11210029-112420-MW-2D	GW-11210029-120420-MW-02
Report No.:	L2533335-4	L2537182-1	L2533335-1	L2533335-2	L2537182-2
Sample Date:	25-Nov-20	4-Dec-2020	24-Nov-20	24-Nov-20	4-Dec-2020
				DUPLICATE	

Table 2 Standards<sup>2</sup> Table 3 Standards<sup>3</sup>

	Table 2 Standards <sup>2</sup>	Table 3 Standards <sup>3</sup>	Units						
<b><u>Dissolved Metals</u></b>									
Antimony (Sb)-Dissolved	6	20000	ug/L	0.18	0.16	<1.0	<1.0	<0.10	
Arsenic (As)-Dissolved	25	1900	ug/L	0.41	0.36	<1.0	<1.0	0.46	
Barium (Ba)-Dissolved	1000	29000	ug/L	67.5	93.5	78.5	78.5	51.5	
Beryllium (Be)-Dissolved	4	67	ug/L	<0.10	<0.10	<1.0	<1.0	<0.10	
Boron (B)-Dissolved	5000	45000	ug/L	22	23	<100	<100	36	
Cadmium (Cd)-Dissolved	2.7	2	ug/L	<0.010	0.014	0.118	0.139	0.073	
Chromium (Cr)-Dissolved	50	810	ug/L	<0.50	<0.50	<5.0	<5.0	<0.50	
Cobalt (Co)-Dissolved	3.8	66	ug/L	0.39	0.43	1.6	1.6	0.62	
Copper (Cu)-Dissolved	87	87	ug/L	0.66	0.70	17.1	17	10.5	
Lead (Pb)-Dissolved	10	25	ug/L	<0.050	<0.050	<0.50	<0.50	<0.050	
Mercury (Hg)-Dissolved	0.29	0.29	ug/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Molybdenum (Mo)-Dissolved	70	9200	ug/L	3.77	2.89	1.02	1.12	0.524	
Nickel (Ni)-Dissolved	100	490	ug/L	0.88	1.13	9.2	9.5	4.70	
Selenium (Se)-Dissolved	10	63	ug/L	0.069	0.096	<0.50	<0.50	0.146	
Silver (Ag)-Dissolved	1.5	1.5	ug/L	<0.050	<0.050	<0.50	<0.50	<0.050	
Sodium (Na)-Dissolved	490000	2300000	ug/L	8450	9100	6920	7340	4670	
Thallium (Tl)-Dissolved	2	510	ug/L	<0.010	0.015	0.1	0.11	0.063	
Uranium (U)-Dissolved	20	420	ug/L	0.764	0.816	0.61	0.6	0.348	
Vanadium (V)-Dissolved	6.2	250	ug/L	<5.0	<0.50	<5.0	<5.0	<0.50	
Zinc (Zn)-Dissolved	1100	1100	ug/L	1.3	4.3	26	26	17.7	
<b><u>Volatile Organic Compounds</u></b>									
Acetone	2700	130000	µg/L	<30	<30	<30	<30	<30	
Benzene	5	44	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
Bromodichloromethane	16	85000	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
Bromoform	25	380	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	
Bromomethane	0.89	5.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
Carbon tetrachloride	0.79	0.79	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	
Chlorobenzene	30	630	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
Dibromochloromethane	25	82000	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
Chloroform	2.4	2.4	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dibromoethane			µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	
1,2-Dichlorobenzene	3	4600	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
1,3-Dichlorobenzene	59	9600	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
1,4-Dichlorobenzene	1	8	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
Dichlorodifluoromethane	590	4400	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
1,1-Dichloroethane	5	320	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
1,2-Dichloroethane	1.6	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1-Dichloroethylene	1.6	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
cis-1,2-Dichloroethylene	1.6	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
trans-1,2-Dichloroethylene	1.6	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
Methylene Chloride	50	610	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	
1,2-Dichloropropane	5	16	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
cis-1,3-Dichloropropene	0.5	5.2	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	
trans-1,3-Dichloropropene	0.5	5.2	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	
1,3-Dichloropropene (cis & trans)	0.5	5.2	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
Ethylbenzene	2.4	2300	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
n-Hexane	51	51	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
Methyl Ethyl Ketone	1800	470000	µg/L	<20	<20	<20	<20	<20	
Methyl Isobutyl Ketone	640	140000	µg/L	<20	<20	<20	<20	<20	
MTBE	15	190	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	
Styrene	5.4	1300	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	

Table 3

Summary of Groundwater Quality for  
 MW1-20, MW2-20, and MW3-20  
 Hydrogeologic Impact Assessment  
 6678 Wellington Road 34,  
 Cambridge, Ontario

Location:	MW1-20	MW1-20	MW2-20	MW2-20	MW2-20
Sample ID:	GW-11210029-112520-MW-1	GW-11210029-120420-MW-01	GW-11210029-112420-MW-2	GW-11210029-112420-MW-2D	GW-11210029-120420-MW-02
Report No.:	L2533335-4	L2537182-1	L2533335-1	L2533335-2	L2537182-2
Sample Date:	25-Nov-20	4-Dec-2020	24-Nov-20	24-Nov-20	4-Dec-2020

Table 2 Standards<sup>2</sup> Table 3 Standards<sup>3</sup>

	Table 2 Standards <sup>2</sup>	Table 3 Standards <sup>3</sup>	Units	MW1-20	MW1-20	MW2-20	MW2-20	MW2-20
1,1,1,2-Tetrachloroethane	1.1	3.3	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	1	3.2	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	1.6	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	24	18000	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	200	640	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	4.7	4.7	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	1.6	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	150	2500	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	0.5	0.5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
o-Xylene			µg/L	<0.30	<0.30	<0.30	<0.30	<0.30
m+p-Xylenes			µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
Xylenes (Total)	300	4200	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
<b>Hydrocarbons</b>								
F1 (C6-C10)	750	750	µg/L	<25	<25	<25	<25	<25
F1-BTEX			µg/L	<25	<25	<25	<25	<25
F2 (C10-C16)	150	150	µg/L	<100	<100	<100	<100	<100
F2-Naphth			µg/L	<100	<100	<100	<100	<100
F3 (C16-C34)	500	500	µg/L	<250	<250	<250	<250	<250
F3-PAH			µg/L	<250	<250	<250	<250	<250
F4 (C34-C50)	500	500	µg/L	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)			µg/L	<370	<370	<370	<370	<370
<b>Semi-Volatile Organics</b>								
Biphenyl	0.5	1000	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
4-Chloroaniline	10	400	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	300000	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	20000	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2-Chlorophenol	8.9	3300	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	640	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-Dichlorophenol	20	4600	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30
Diethylphthalate	38	38	µg/L	0.29	<0.20	<0.20	<0.20	<0.20
Dimethylphthalate	38	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	39000	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	11000	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	5	2900	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	2900	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	2900	µg/L	<0.57	<0.57	<0.57	<0.57	<0.57
Bis(2-ethylhexyl)phthalate	10	140	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Pentachlorophenol	30	62	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Phenol	890	12000	µg/L	0.53	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	70	180	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	1600	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	230	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
<b>Aggregate Organics</b>								
Oil and Grease, Total			mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Animal/Veg Oil & Grease			mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Mineral Oil and Grease			mg/L	<2.5	<2.5	<2.5	<2.5	<2.5

Table 3

Summary of Groundwater Quality for  
 MW1-20, MW2-20, and MW3-20  
 Hydrogeologic Impact Assessment  
 6678 Wellington Road 34,  
 Cambridge, Ontario

Location:	MW1-20	MW1-20	MW2-20	MW2-20	MW2-20
Sample ID:	GW-11210029-112520-MW-1	GW-11210029-120420-MW-01	GW-11210029-112420-MW-2	GW-11210029-112420-MW-2D	GW-11210029-120420-MW-02
Report No.:	L2533335-4	L2537182-1	L2533335-1	L2533335-2	L2537182-2
Sample Date:	25-Nov-20	4-Dec-2020	24-Nov-20	24-Nov-20 DUPLICATE	4-Dec-2020

Table 2 Standards<sup>2</sup> Table 3 Standards<sup>3</sup>

	Table 2 Standards <sup>2</sup>	Table 3 Standards <sup>3</sup>	Units						
<b>Polycyclic Aromatic Hydrocarbons</b>									
Acenaphthene	4.1	600	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
Acenaphthylene	1	1.8	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
Anthracene	2.4	2.4	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
Benzo(a)anthracene	1	4.7	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
Benzo(a)pyrene	0.01	0.81	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Benzo(b)fluoranthene	0.1	0.75	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
Benzo(g,h,i)perylene	0.2	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
Benzo(k)fluoranthene	0.1	0.4	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
Chrysene	0.1	1	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
Dibenzo(ah)anthracene	0.2	0.52	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
Fluoranthene	0.41	130	µg/L	0.091	0.075	0.031	0.038	<0.020	
Fluorene	120	400	µg/L	0.053	<0.020	<0.020	<0.020	<0.020	
Indeno(1,2,3-cd)pyrene	0.2	0.2	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
1+2-Methylnaphthalenes	3.2	1800	µg/L	0.141	<0.028	<0.028	<0.028	<0.028	
1-Methylnaphthalene	3.2	1800	µg/L	0.047	<0.020	<0.020	<0.020	<0.020	
2-Methylnaphthalene	3.2	1800	µg/L	0.094	<0.020	<0.020	<0.020	<0.020	
Naphthalene	11	1400	µg/L	0.073	<0.050	<0.050	<0.050	<0.050	
Phenanthrene	1	580	µg/L	0.384	<0.020	0.024	0.027	<0.020	
Pyrene	4.1	68	µg/L	0.096	0.109	0.037	0.04	<0.020	

Table 1: Full Depth Background Site Condition Standards

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

Table 3

Summary of Groundwater Quality for  
 MW1-20, MW2-20, and MW3-20  
 Hydrogeologic Impact Assessment  
 6678 Wellington Road 34,  
 Cambridge, Ontario

Location:	MW2-20	MW3-20	MW3-20	TRIP BLANK	TRIP BLANK
Sample ID:	GW-11210029-120420-MW-02D	GW-11210029-112420-MW-3	GW-11210029-120420-MW-03	TRIP BLANK	TRIP BLANK
Report No.:	L2537182-3	L2533335-3	L2537182-4	L2533335-5	L2537182-5
Sample Date:	4-Dec-2020 DUPLICATE	24-Nov-20	4-Dec-2020	25-Nov-20	4-Dec-2020

Table 2 Standards<sup>2</sup> Table 3 Standards<sup>3</sup>

	Table 2 Standards <sup>2</sup>	Table 3 Standards <sup>3</sup>	Units	MW2-20	MW3-20	MW3-20
<b>Physical Tests</b>						
Conductivity			mS/cm	0.682	0.609	0.624
pH			pH Units	8.15	7.9	7.74
<b>Anions and Nutrients</b>						
Chloride	790000	2300000	ug/L	5.42	4800	3.98
<b>Cyanides</b>						
Cyanide, Weak Acid Diss	66	66	ug/L	<2.0	<2.0	<2.0
<b>Total Metals</b>						
Aluminum			µg/L	9.6	210	61
Antimony			µg/L	<0.1	0.15	<0.10
Arsenic			µg/L	0.50	0.35	0.32000
Barium			µg/L	53.7	68.9	70.8
Beryllium			µg/L	<0.1	<0.1	<0.1
Bismuth			µg/L	<0.05	<0.05	<0.05
Boron (total)			µg/L	43	12	11
Cadmium			µg/L	0.0807	0.01	0.0067000
Calcium			µg/L	95500	80600	95300
Cesium			µg/L	0.013	0.022	0.02
Chromium			µg/L	0.58	<0.5	<0.5
Chromium, Hexavalent			µg/L	<0.50	<0.50	<0.50
Cobalt			µg/L	0.67	0.64	0.51
Copper			µg/L	10.8	0.96	1.42
Iron			µg/L	<10.0	224	68
Lead			µg/L	0.095	0.299	0.123
Lithium			µg/L	1.9	9.9	6.0
Magnesium			µg/L	31400	36900	39700
Manganese			µg/L	143	90.6	50.9
Mercury			µg/L	<0.005	<0.005	<0.005
Molybdenum			µg/L	0.542	16.9	16.9
Nickel			µg/L	4.93	1.62	1.09
Phosphorus			µg/L	<50.0	<50.0	<50.0
Potassium			µg/L	32200	1910	1350
Rubidium			µg/L	5.94	1.06	0.67
Selenium			µg/L	0.128	0.226	0.107
Silicon			µg/L	4750	7250	7460
Silver			µg/L	<0.05	<0.05	<0.05
Sodium			µg/L	5050	6780	4390
Strontium			µg/L	120	158	130
Sulfur			µg/L	5360	8990	7400
Tellurium			µg/L	<0.2	<0.2	<0.2
Thallium			µg/L	0.068	<0.01	<0.01
Thorium			µg/L	<0.1	<0.1	<0.1
Tin			µg/L	<0.1	<0.1	0.13
Titanium			µg/L	<0.3	8.91	2.46
Tungsten			µg/L	<0.1	<0.1	<0.1
Uranium			µg/L	0.432	2	0.957
Vanadium			µg/L	<0.5	0.87	0.72
Zinc			µg/L	18.9	<3.0	<3.0
Zirconium			µg/L	<0.2	0.22	<0.2

Table 3

Summary of Groundwater Quality for  
 MW1-20, MW2-20, and MW3-20  
 Hydrogeologic Impact Assessment  
 6678 Wellington Road 34,  
 Cambridge, Ontario

Location:	MW2-20	MW3-20	MW3-20	TRIP BLANK	TRIP BLANK
Sample ID:	GW-11210029-120420-MW-02D	GW-11210029-112420-MW-3	GW-11210029-120420-MW-03	TRIP BLANK	TRIP BLANK
Report No.:	L2537182-3	L2533335-3	L2537182-4	L2533335-5	L2537182-5
Sample Date:	4-Dec-2020 DUPLICATE	24-Nov-20	4-Dec-2020	25-Nov-20	4-Dec-2020

Table 2 Standards<sup>2</sup> Table 3 Standards<sup>3</sup>

	Table 2 Standards <sup>2</sup>	Table 3 Standards <sup>3</sup>	Units						
<b><u>Dissolved Metals</u></b>									
Antimony (Sb)-Dissolved	6	20000	ug/L	<0.10	0.15	<0.10			
Arsenic (As)-Dissolved	25	1900	ug/L	0.46	0.31	0.22			
Barium (Ba)-Dissolved	1000	29000	ug/L	52.8	67.9	63.5			
Beryllium (Be)-Dissolved	4	67	ug/L	<0.10	<0.10	<0.10			
Boron (B)-Dissolved	5000	45000	ug/L	36	11	<10			
Cadmium (Cd)-Dissolved	2.7	2	ug/L	0.072	<0.010	<0.010			
Chromium (Cr)-Dissolved	50	810	ug/L	<0.50	<0.50	<0.50			
Cobalt (Co)-Dissolved	3.8	66	ug/L	0.64	0.57	0.41			
Copper (Cu)-Dissolved	87	87	ug/L	10.8	3.02	0.53			
Lead (Pb)-Dissolved	10	25	ug/L	<0.050	0.109	<0.050			
Mercury (Hg)-Dissolved	0.29	0.29	ug/L	<0.0050	<0.0050	<0.0050			
Molybdenum (Mo)-Dissolved	70	9200	ug/L	0.555	15.8	1.85			
Nickel (Ni)-Dissolved	100	490	ug/L	4.94	1.35	0.95			
Selenium (Se)-Dissolved	10	63	ug/L	0.111	0.278	0.098			
Silver (Ag)-Dissolved	1.5	1.5	ug/L	<0.050	<0.050	<0.050			
Sodium (Na)-Dissolved	490000	2300000	ug/L	4800	6870	3680			
Thallium (Tl)-Dissolved	2	510	ug/L	0.066	<0.010	<0.010			
Uranium (U)-Dissolved	20	420	ug/L	0.351	1.86	0.867			
Vanadium (V)-Dissolved	6.2	250	ug/L	<0.50	<5.0	<0.50			
Zinc (Zn)-Dissolved	1100	1100	ug/L	18.7	1.7	<1.0			
<b><u>Volatile Organic Compounds</u></b>									
Acetone	2700	130000	µg/L	<30	<30	<30	<30	<30	<30
Benzene	5	44	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	16	85000	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	25	380	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane	0.89	5.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	0.79	0.79	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	30	630	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	25	82000	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	2.4	2.4	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane			µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	3	4600	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	59	9600	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	1	8	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	590	4400	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	5	320	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	1.6	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	1.6	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	1.6	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	50	610	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	5	16	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	0.5	5.2	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	0.5	5.2	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	0.5	5.2	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	2.4	2300	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	51	51	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	1800	470000	µg/L	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	640	140000	µg/L	<20	<20	<20	<20	<20	<20
MTBE	15	190	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene	5.4	1300	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Table 3

Summary of Groundwater Quality for  
MW1-20, MW2-20, and MW3-20  
Hydrogeologic Impact Assessment  
6678 Wellington Road 34,  
Cambridge, Ontario

Location:	MW2-20	MW3-20	MW3-20	TRIP BLANK	TRIP BLANK
Sample ID:	GW-11210029-120420-MW-02D	GW-11210029-112420-MW-3	GW-11210029-120420-MW-03	TRIP BLANK	TRIP BLANK
Report No.:	L2537182-3	L2533335-3	L2537182-4	L2533335-5	L2537182-5
Sample Date:	4-Dec-2020 DUPLICATE	24-Nov-20	4-Dec-2020	25-Nov-20	4-Dec-2020

Table 2 Standards<sup>2</sup> Table 3 Standards<sup>3</sup>

	Table 2 Standards <sup>2</sup>	Table 3 Standards <sup>3</sup>	Units					
1,1,1,2-Tetrachloroethane	1.1	3.3	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	1	3.2	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	1.6	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	24	18000	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	200	640	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	4.7	4.7	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	1.6	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	150	2500	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	0.5	0.5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
o-Xylene			µg/L	<0.30	<0.30	<0.30	<0.30	<0.30
m+p-Xylenes			µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
Xylenes (Total)	300	4200	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
<b>Hydrocarbons</b>								
F1 (C6-C10)	750	750	µg/L	<25	<25	<25	<25	<25
F1-BTEX			µg/L	<25	<25	<25	<25	<25
F2 (C10-C16)	150	150	µg/L	<100	<100	<100	<100	<100
F2-Naphth			µg/L	<100	<100	<100	<100	<100
F3 (C16-C34)	500	500	µg/L	<250	<250	<250	<250	<250
F3-PAH			µg/L	<250	<250	<250	<250	<250
F4 (C34-C50)	500	500	µg/L	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)			µg/L	<370	<370	<370	<370	<370
<b>Semi-Volatile Organics</b>								
Biphenyl	0.5	1000	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
4-Chloroaniline	10	400	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	300000	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	20000	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2-Chlorophenol	8.9	3300	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	640	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-Dichlorophenol	20	4600	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30
Diethylphthalate	38	38	µg/L	<0.20	0.29	<0.20	<0.20	<0.20
Dimethylphthalate	38	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	39000	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	11000	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	5	2900	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	2900	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	2900	µg/L	<0.57	<0.57	<0.57	<0.57	<0.57
Bis(2-ethylhexyl)phthalate	10	140	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Pentachlorophenol	30	62	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Phenol	890	12000	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	70	180	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	1600	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	230	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
<b>Aggregate Organics</b>								
Oil and Grease, Total			mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Animal/Veg Oil & Grease			mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Mineral Oil and Grease			mg/L	<2.5	<2.5	<2.5	<2.5	<2.5

Table 3

Summary of Groundwater Quality for  
 MW1-20, MW2-20, and MW3-20  
 Hydrogeologic Impact Assessment  
 6678 Wellington Road 34,  
 Cambridge, Ontario

Location:	MW2-20	MW3-20	MW3-20	TRIP BLANK	TRIP BLANK
Sample ID:	GW-11210029-120420-MW-02D	GW-11210029-112420-MW-3	GW-11210029-120420-MW-03	TRIP BLANK	TRIP BLANK
Report No.:	L2537182-3	L2533335-3	L2537182-4	L2533335-5	L2537182-5
Sample Date:	4-Dec-2020	24-Nov-20	4-Dec-2020	25-Nov-20	4-Dec-2020
	DUPLICATE				

Table 2 Standards<sup>2</sup> Table 3 Standards<sup>3</sup>

	Table 2 Standards <sup>2</sup>	Table 3 Standards <sup>3</sup>	Units			
<b>Polycyclic Aromatic Hydrocarbons</b>						
Acenaphthene	4.1	600	µg/L	<0.020	<0.020	<0.020
Acenaphthylene	1	1.8	µg/L	<0.020	<0.020	<0.020
Anthracene	2.4	2.4	µg/L	<0.020	<0.020	<0.020
Benzo(a)anthracene	1	4.7	µg/L	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01	0.81	µg/L	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1	0.75	µg/L	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2	0.2	µg/L	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1	0.4	µg/L	<0.020	<0.020	<0.020
Chrysene	0.1	1	µg/L	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	0.2	0.52	µg/L	<0.020	<0.020	<0.020
Fluoranthene	0.41	130	µg/L	<0.020	0.059	0.053
Fluorene	120	400	µg/L	<0.020	0.031	<0.020
Indeno(1,2,3-cd)pyrene	0.2	0.2	µg/L	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2	1800	µg/L	<0.028	0.067	<0.028
1-Methylnaphthalene	3.2	1800	µg/L	<0.020	0.024	<0.020
2-Methylnaphthalene	3.2	1800	µg/L	<0.020	0.043	<0.020
Naphthalene	11	1400	µg/L	<0.050	<0.050	<0.050
Phenanthrene	1	580	µg/L	<0.020	0.21	0.029
Pyrene	4.1	68	µg/L	<0.020	0.059	0.056

Table 1: Full Depth Background Site Condition Standards  
 Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.  
 Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

**Summary of Water Supply A Zone Groundwater Quality  
(July and August 2020)  
Hydrogeologic Impact Assessment  
6678 Wellington Road 34,  
Cambridge, Ontario**

Location:	Water Supply A Zone	Water Supply A Zone	Water Supply A Zone
Sample ID:	W-11210029-20200702-12	W-11210029-20200723-18	W-11210029-20200813-24
Report No.:	L2468705-1	L2478867-1	L2488954-1
Sample Date:	July 2 2020	July 23 2020	August 13 2020

**Table 2  
Standards <sup>2</sup>**

	2011	Units			
<b>Metals</b>					
Aluminum	--	µg/L	<5.0	<5.0	19.2
Antimony	6	µg/L	<0.1	<0.1	<0.1
Arsenic	25	µg/L	5.17	2.24	3.64
Barium	1000	µg/L	49.5	50.6	77.9
Beryllium (4)	4	µg/L	<0.1	<0.1	<0.1
Bismuth	--	µg/L	<0.05	<0.05	<0.05
Boron (total)	5000	µg/L	<10.0	<10.0	14
Cadmium (5)	2.7	µg/L	<0.005	<0.005	<0.005
Calcium	--	µg/L	70600	68300	48500
Cesium	--	µg/L	<0.01	<0.01	<0.01
Chromium	50	µg/L	<0.5	<0.5	<0.5
Chromium, Hexavalent	25	µg/L	<0.5	<0.5	<0.5
Cobalt	3.8	µg/L	0.11	<0.1	<0.1
Copper	87	µg/L	<0.5	4	<0.5
Iron	--	µg/L	400	22	244
Lead (6)	10	µg/L	0.227	0.268	0.083
Lithium	--	µg/L	3.4	3.9	3.2
Magnesium	--	µg/L	32600	31800	25600
Manganese	--	µg/L	10.8	7.64	8.13
Mercury	0.29	µg/L	<0.005	<0.005	<0.005
Molybdenum	70	µg/L	0.559	0.632	0.655
Nickel	100	µg/L	1.7	0.86	<0.5
Phosphorus	--	µg/L	<50.0	<50.0	<50.0
Potassium	--	µg/L	978	996	979
Rubidium	--	µg/L	<0.2	0.21	0.35
Selenium	10	µg/L	<0.05	<0.05	<0.05
Silicon	--	µg/L	8890	9290	7300
Silver	1.5	µg/L	<0.05	<0.05	<0.05
Sodium	490000	µg/L	7790	7510	5750
Strontium	--	µg/L	148	146	348
Sulfur	--	µg/L	20200	20100	7710
Tellurium	--	µg/L	<0.2	<0.2	<0.2
Thallium	2.0	µg/L	<0.01	<0.01	<0.01
Thorium	--	µg/L	<0.1	<0.1	<0.1
Tin	--	µg/L	<0.1	<0.1	<0.1
Titanium	--	µg/L	<0.3	<0.3	0.62
Tungsten	--	µg/L	<0.1	<0.1	<0.1
Uranium	20.0	µg/L	0.252	0.296	0.383
Vanadium	6.2	µg/L	<0.5	<0.5	<0.5
Zinc	1100	µg/L	5.4	5.0	<3.0
Zirconium	--	µg/L	<0.2	<0.2	<0.2
Total Plate Count	--	cfu/mL			
E. coli	--	cfu/100 mL			

**Summary of Water Supply A Zone Groundwater Quality  
(July and August 2020)  
Hydrogeologic Impact Assessment  
6678 Wellington Road 34,  
Cambridge, Ontario**

Location:	Water Supply A Zone	Water Supply A Zone	Water Supply A Zone
Sample ID:	W-11210029-20200702-12	W-11210029-20200723-18	W-11210029-20200813-24
Report No.:	L2468705-1	L2478867-1	L2488954-1
Sample Date:	July 2 2020	July 23 2020	August 13 2020

**Table 2  
Standards <sup>2</sup>**

	2011	Units			
<b><u>Volatile Organic Compounds</u></b>					
Acetone	2700	µg/L	<30	<30	<30
Benzene	5	µg/L	<0.50	<0.50	<0.50
Bromodichloromethane	16	µg/L	<2.0	<2.0	<2.0
Bromoform	25	µg/L	<5.0	<5.0	<5.0
Bromomethane	0.89	µg/L	<0.50	<0.50	<0.50
Carbon tetrachloride	0.79	µg/L	<0.20	<0.20	<0.20
Chlorobenzene	30	µg/L	<0.50	<0.50	<0.50
Dibromochloromethane	25	µg/L	<2.0	<2.0	<2.0
Chloroform	2.4	µg/L	<1.0	<1.0	<1.0
1,2-Dibromoethane		µg/L	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	3	µg/L	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	59	µg/L	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	1	µg/L	<0.50	<0.50	<0.50
Dichlorodifluoromethane	590	µg/L	<2.0	<2.0	<2.0
1,1-Dichloroethane	5	µg/L	<0.50	<0.50	<0.50
1,2-Dichloroethane	1.6	µg/L	<0.50	<0.50	<0.50
1,1-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Methylene Chloride	50	µg/L	<5.0	<5.0	<5.0
1,2-Dichloropropane	5	µg/L	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	0.5	µg/L	<0.50	<0.50	<0.50
Ethylbenzene	2.4	µg/L	<0.50	<0.50	<0.50
n-Hexane	51	µg/L	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	1800	µg/L	<20	<20	<20
Methyl Isobutyl Ketone	640	µg/L	<20	<20	<20
MTBE	15	µg/L	<2.0	<2.0	<2.0
Styrene	5.4	µg/L	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	1.1	µg/L	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	1	µg/L	<0.50	<0.50	<0.50
Tetrachloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Toluene	24	µg/L	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	200	µg/L	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	4.7	µg/L	<0.50	<0.50	<0.50
Trichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Trichlorofluoromethane	150	µg/L	<5.0	<5.0	<5.0
Vinyl chloride	0.5	µg/L	<0.50	<0.50	<0.50
o-Xylene		µg/L	<0.30	<0.30	<0.30
m+p-Xylenes		µg/L	<0.40	<0.40	<0.40
Xylenes (Total)	300	µg/L	<0.50	<0.50	<0.50

**Summary of Water Supply A Zone Groundwater Quality  
(July and August 2020)  
Hydrogeologic Impact Assessment  
6678 Wellington Road 34,  
Cambridge, Ontario**

<b>Location:</b>	<b>Water Supply A Zone</b>	<b>Water Supply A Zone</b>	<b>Water Supply A Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200702-12</b>	<b>W-11210029-20200723-18</b>	<b>W-11210029-20200813-24</b>
<b>Report No.:</b>	<b>L2468705-1</b>	<b>L2478867-1</b>	<b>L2488954-1</b>
<b>Sample Date:</b>	<b>July 2 2020</b>	<b>July 23 2020</b>	<b>August 13 2020</b>

**Table 2  
Standards <sup>2</sup>**

	<b>2011</b>	<b>Units</b>			
<b><u>Hydrocarbons</u></b>					
F1 (C6-C10)	750	µg/L	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370
<b><u>Semi-Volatile Organics</u></b>					
Biphenyl	0.5	µg/L	<0.40	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40	<0.40
2-Chlorophenol	8.9	µg/L	<0.30	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40	<0.40
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30	<0.30
Diethylphthalate	38	µg/L	<0.20	<0.20	<0.20
Dimethylphthalate	38	µg/L	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<2.0	<2.0	<2.0
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.57	<0.57	<0.57
Bis(2-ethylhexyl)phthalate	10	µg/L	<2.0	<2.0	<2.0
Pentachlorophenol	30	µg/L	<0.50	<0.50	<0.50
Phenol	890	µg/L	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20	<0.20
<b><u>Polychlorinated Biphenyls</u></b>					
Aroclor 1242		µg/L	<0.020	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020	<0.020
Total PCBs	3	µg/L	<0.040	<0.040	<0.040
<b><u>Aggregate Organics</u></b>					
BOD		µg/L			
<b><u>Physical Tests</u></b>					
pH		pH units			
Total Suspended Solids		µg/L			

**Summary of Water Supply A Zone Groundwater Quality  
(July and August 2020)  
Hydrogeologic Impact Assessment  
6678 Wellington Road 34,  
Cambridge, Ontario**

Location:	Water Supply A Zone	Water Supply A Zone	Water Supply A Zone
Sample ID:	W-11210029-20200702-12	W-11210029-20200723-18	W-11210029-20200813-24
Report No.:	L2468705-1	L2478867-1	L2488954-1
Sample Date:	July 2 2020	July 23 2020	August 13 2020

**Table 2  
Standards <sup>2</sup>  
2011**

	Units			
<b><u>Anions and Nutrients</u></b>				
Phosphorus, Total	µg/L	5.6	<3.0	8.2
<b><u>Organic / Inorganic Carbon</u></b>				
Total Organic Carbon	µg/L			
<b><u>Polycyclic Aromatic Hydrocarbons</u></b>				
Acenaphthene	4.1 µg/L	<0.020	<0.020	<0.020
Acenaphthylene	1 µg/L	<0.020	<0.020	<0.020
Anthracene	2.4 µg/L	<0.020	<0.020	<0.020
Benzo(a)anthracene	1 µg/L	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01 µg/L	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1 µg/L	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2 µg/L	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1 µg/L	<0.020	<0.020	<0.020
Chrysene	0.1 µg/L	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	0.2 µg/L	<0.020	<0.020	<0.020
Fluoranthene	0.41 µg/L	<0.020	<0.020	<0.020
Fluorene	120 µg/L	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2 µg/L	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2 µg/L	<0.028	<0.028	<0.028
1-Methylnaphthalene	3.2 µg/L	<0.020	<0.020	<0.020
2-Methylnaphthalene	3.2 µg/L	<0.020	<0.020	<0.020
Naphthalene	11 µg/L	<0.050	<0.050	<0.050
Phenanthrene	1 µg/L	<0.020	<0.020	<0.020
Pyrene	4.1 µg/L	<0.020	<0.020	<0.020

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

**Summary of Water Supply EXI Zone Groundwater Quality  
(July and August 2020)  
Hydrogeologic Impact Assessment  
6678 Wellington Road 34,  
Cambridge, Ontario**

<b>Location:</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200709-14</b>	<b>W-11210029-20200730-20</b>	<b>W-11210029-20200813-26</b>
<b>Report No.:</b>	<b>L2472292-1</b>	<b>L2482453-1</b>	<b>L2491984</b>
<b>Sample Date:</b>	<b>July 9 2020</b>	<b>July 30 2020</b>	<b>August 20 2020</b>

**Table 2  
Standards<sup>2</sup>  
2011**

	<b>Units</b>			
<b>Metals</b>				
Aluminum	--	µg/L	6.6	8.0
Antimony	6	µg/L	<0.1	<0.1
Arsenic	25	µg/L	5.8	3.62
Barium	1000	µg/L	65.3	70.5
Beryllium (4)	4	µg/L	<0.1	<0.1
Bismuth	--	µg/L	<0.05	<0.05
Boron (total)	5000	µg/L	14	14.0
Cadmium (5)	2.7	µg/L	<0.005	<0.005
Calcium	--	µg/L	46600	47800
Cesium	--	µg/L	<0.01	<0.01
Chromium	50	µg/L	<0.5	<0.5
Chromium, Hexavalent	25	µg/L	<0.5	<0.5
Cobalt	3.8	µg/L	<0.1	<0.1
Copper	87	µg/L	<0.5	<0.5
Iron	--	µg/L	281	265
Lead (6)	10	µg/L	<0.05	<0.05
Lithium	--	µg/L	2.6	3.6
Magnesium	--	µg/L	27300	26600
Manganese	--	µg/L	9.31	7.61
Mercury	0.29	µg/L	<0.005	<0.005
Molybdenum	70	µg/L	0.703	0.668
Nickel	100	µg/L	<0.5	<0.5
Phosphorus	--	µg/L	<50.0	<50.0
Potassium	--	µg/L	995	991
Rubidium	--	µg/L	0.34	0.38
Selenium	10	µg/L	<0.05	<0.05
Silicon	--	µg/L	7600	7430
Silver	1.5	µg/L	<0.05	<0.05
Sodium	490000	µg/L	5880	5970
Strontium	--	µg/L	322	356
Sulfur	--	µg/L	7150	8040
Tellurium	--	µg/L	<0.2	<0.2
Thallium	2.0	µg/L	<0.01	<0.01
Thorium	--	µg/L	<0.1	<0.1
Tin	--	µg/L	<0.1	<0.1
Titanium	--	µg/L	<0.3	<0.3
Tungsten	--	µg/L	<0.1	<0.1
Uranium	20.0	µg/L	0.59	0.397
Vanadium	6.2	µg/L	<0.5	<0.5
Zinc	1100	µg/L	<3.0	<3.0
Zirconium	--	µg/L	<0.2	<0.2
Total Plate Count	--	cfu/mL		
E. coli	--	cfu/100 mL		

**Summary of Water Supply EXI Zone Groundwater Quality  
(July and August 2020)  
Hydrogeologic Impact Assessment  
6678 Wellington Road 34,  
Cambridge, Ontario**

<b>Location:</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200709-14</b>	<b>W-11210029-20200730-20</b>	<b>W-11210029-20200813-26</b>
<b>Report No.:</b>	<b>L2472292-1</b>	<b>L2482453-1</b>	<b>L2491984</b>
<b>Sample Date:</b>	<b>July 9 2020</b>	<b>July 30 2020</b>	<b>August 20 2020</b>

**Table 2  
Standards<sup>2</sup>  
2011**

	<b>Units</b>			
<b><u>Volatile Organic Compounds</u></b>				
Acetone	2700	µg/L	<30	<30
Benzene	5	µg/L	<0.50	<0.50
Bromodichloromethane	16	µg/L	<2.0	<2.0
Bromoform	25	µg/L	<5.0	<5.0
Bromomethane	0.89	µg/L	<0.50	<0.50
Carbon tetrachloride	0.79	µg/L	<0.20	<0.20
Chlorobenzene	30	µg/L	<0.50	<0.50
Dibromochloromethane	25	µg/L	<2.0	<2.0
Chloroform	2.4	µg/L	<1.0	<1.0
1,2-Dibromoethane		µg/L	<0.20	<0.20
1,2-Dichlorobenzene	3	µg/L	<0.50	<0.50
1,3-Dichlorobenzene	59	µg/L	<0.50	<0.50
1,4-Dichlorobenzene	1	µg/L	<0.50	<0.50
Dichlorodifluoromethane	590	µg/L	<2.0	<2.0
1,1-Dichloroethane	5	µg/L	<0.50	<0.50
1,2-Dichloroethane	1.6	µg/L	<0.50	<0.50
1,1-Dichloroethylene	1.6	µg/L	<0.50	<0.50
cis-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50
Methylene Chloride	50	µg/L	<5.0	<5.0
1,2-Dichloropropane	5	µg/L	<0.50	<0.50
cis-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30
trans-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	0.5	µg/L	<0.50	<0.50
Ethylbenzene	2.4	µg/L	<0.50	<0.50
n-Hexane	51	µg/L	<0.50	<0.50
Methyl Ethyl Ketone	1800	µg/L	<20	<20
Methyl Isobutyl Ketone	640	µg/L	<20	<20
MTBE	15	µg/L	<2.0	<2.0
Styrene	5.4	µg/L	<0.50	<0.50
1,1,1,2-Tetrachloroethane	1.1	µg/L	<0.50	<0.50
1,1,2,2-Tetrachloroethane	1	µg/L	<0.50	<0.50
Tetrachloroethylene	1.6	µg/L	<0.50	<0.50
Toluene	24	µg/L	<0.50	<0.50
1,1,1-Trichloroethane	200	µg/L	<0.50	<0.50
1,1,2-Trichloroethane	4.7	µg/L	<0.50	<0.50
Trichloroethylene	1.6	µg/L	<0.50	<0.50
Trichlorofluoromethane	150	µg/L	<5.0	<5.0
Vinyl chloride	0.5	µg/L	<0.50	<0.50
o-Xylene		µg/L	<0.30	<0.30
m+p-Xylenes		µg/L	<0.40	<0.40
Xylenes (Total)	300	µg/L	<0.50	<0.50

**Summary of Water Supply EXI Zone Groundwater Quality  
(July and August 2020)  
Hydrogeologic Impact Assessment  
6678 Wellington Road 34,  
Cambridge, Ontario**

<b>Location:</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200709-14</b>	<b>W-11210029-20200730-20</b>	<b>W-11210029-20200813-26</b>
<b>Report No.:</b>	<b>L2472292-1</b>	<b>L2482453-1</b>	<b>L2491984</b>
<b>Sample Date:</b>	<b>July 9 2020</b>	<b>July 30 2020</b>	<b>August 20 2020</b>

**Table 2  
Standards<sup>2</sup>  
2011**

	<b>Units</b>			
<b><u>Hydrocarbons</u></b>				
F1 (C6-C10)	750	µg/L	<25	<25
F1-BTEX		µg/L	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100
F2-Naphth		µg/L	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250
F3-PAH		µg/L	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370
<b><u>Semi-Volatile Organics</u></b>				
Biphenyl	0.5	µg/L	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40
2-Chlorophenol	8.9	µg/L	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30
Diethylphthalate	38	µg/L	<0.20	0.25
Dimethylphthalate	38	µg/L	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<2.0	<1.0
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.57	<0.57
Bis(2-ethylhexyl)phthalate	10	µg/L	<2.0	<2.0
Pentachlorophenol	30	µg/L	<0.50	<0.50
Phenol	890	µg/L	<0.50	<0.50
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20
<b><u>Polychlorinated Biphenyls</u></b>				
Aroclor 1242		µg/L	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020
Total PCBs	3	µg/L	<0.040	<0.040
<b><u>Aggregate Organics</u></b>				
BOD		µg/L		

**Summary of Water Supply EXI Zone Groundwater Quality  
(July and August 2020)  
Hydrogeologic Impact Assessment  
6678 Wellington Road 34,  
Cambridge, Ontario**

Location:	Water Supply EXI Zone	Water Supply EXI Zone	Water Supply EXI Zone
Sample ID:	W-11210029-20200709-14	W-11210029-20200730-20	W-11210029-20200813-26
Report No.:	L2472292-1	L2482453-1	L2491984
Sample Date:	July 9 2020	July 30 2020	August 20 2020

**Table 2  
Standards<sup>2</sup>  
2011**

	Units			
<b><u>Physical Tests</u></b>				
pH	pH units			
Total Suspended Solids	µg/L			
<b><u>Anions and Nutrients</u></b>				
Phosphorus, Total	µg/L	<3.0	3.4	3.8
<b><u>Organic / Inorganic Carbon</u></b>				
Total Organic Carbon	µg/L			
<b><u>Polycyclic Aromatic Hydrocarbons</u></b>				
Acenaphthene	4.1 µg/L	<0.020	<0.020	<0.020
Acenaphthylene	1 µg/L	<0.020	<0.020	<0.020
Anthracene	2.4 µg/L	<0.020	<0.020	<0.020
Benzo(a)anthracene	1 µg/L	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01 µg/L	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1 µg/L	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2 µg/L	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1 µg/L	<0.020	<0.020	<0.020
Chrysene	0.1 µg/L	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	0.2 µg/L	<0.020	<0.020	<0.020
Fluoranthene	0.41 µg/L	<0.020	<0.020	<0.020
Fluorene	120 µg/L	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2 µg/L	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2 µg/L	<0.028	<0.028	<0.028
1-Methylnaphthalene	3.2 µg/L	<0.020	<0.020	<0.020
2-Methylnaphthalene	3.2 µg/L	<0.020	<0.020	<0.020
Naphthalene	11 µg/L	<0.050	<0.050	<0.050
Phenanthrene	1 µg/L	<0.020	<0.020	<0.020
Pyrene	4.1 µg/L	<0.020	<0.020	<0.020

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

Our ref: 11210029-LTR-12

09 June 2025

Mr. Frank Ertl  
2374868 Ontario Inc.  
6678 Wellington Road 34  
Cambridge, Ontario  
N3C 2V4

## Response to Comments - Hydro-Vac Truck Disposal Area: 6678 County Road 34, Puslinch Township

Dear Mr. Ertl

### 1. Introduction

On behalf of 2374868 Ontario Inc., GHD Limited (GHD) has prepared this letter to document the transmittal of the documents requested by Harden Environmental Services Limited (Harden, the Reviewer) (Harden, 2025)<sup>1</sup> and respond to the question posed by Harden in Harden's Pre-Consultation Comments Summary. Harden's Pre-Consultation Comments Summary are regarding the Environmental Compliance Approval (ECA) for the hydro-vacuuming (hydrovac) business situated on a portion of Lot 8, Concession 3 in Wellington County (the Site).

This letter is organized by first providing a summary of the documents transmitted along with this letter, followed by a response to the question posed by Harden (2025).

### 2. Document Transmittal

Harden (2025) requested the documents described, below:

1. *Environmental Compliance Approval received March 27, 2024 requesting approval of a liquid soil processing site, signed by Eric Nafziger, Site Manager, 2374868 Ontario Inc., including all supporting documentation.*
2. *Email dated June 25, 2024 from Dan Puddephatt, P.Ge., GHD, to Pamela Grande, P.Ge., MECP, including the attached letter dated June 25, 2024 from Dan Puddephatt, P.Ge., GHD to Pamela Grande, P.Ge., MECP detailing the proposed trigger response plan ("GHD, 2024a. Proposed Trigger Response Plan – Conestoga Badger Inc. June 25").*

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<sup>1</sup> Harden, 2025. Temporary Zoning Bylaw: Preconsultation: 6678 County Road 34, Puslinch Township. March 7.

This email is a transmittal of the following documents that are included herein:

- a. GHDA, 2024. Proposed Trigger Response Plan – Conestoga Badger. June 25.
- b. GHDb, 2024. Design and Operations Report, Waste Processing Facility, 2374868 Ontario Inc., March 26
3. *Email dated July 5, 2024 from Dan Puddephatt, P.Geol.<sup>2</sup>, GHD, to Pamela Grande, P.Geol., MECP, including the attached document entitled “Hydrogeological Impact Assessment Revision No.1” dated July 2, 2024 (“GHD, 2024b. Hydrogeological Impact Assessment Revision No. 1, 2374868 Ontario Inc., Badger Conestoga Inc. July 5”).*

This email is a transmittal of the Hydrogeological Impact Assessment (HIA) prepared by GHD. The HIA has since been updated with supplemental information gathered through further groundwater sampling. The updated HIA (GHD, 2025) is being provided herein as:

- a. GHD, 2025. Hydrogeological Impact Assessment Revision No. 2. 2374868 Ontario Inc. March 31.

GHD has provided the documents requested above with the following exceptions.

Document 1:

- The supporting document as part of the Environmental Compliance Approval is provided within the transmittal (Design and Operations Report)<sup>3</sup>. The remainder of the document is the application form which has been superseded by the ECA Number A-500-4277838045. ECA Number A-500-4277838045 has been provided to the Reviewer in response to the document request.

Document 2:

- There are additional ECA examples within the June 25<sup>th</sup>, 2024, email that are not included in the transmittal as they were not pertinent to the Site in question.

Document 3:

- The Hydrogeological Impact Assessment (HIA) linked in the July 5, 2024 email from Dan Puddephatt, P.Geol. (Limited), GHD, to Pamela Grande, P.Geol., MECP has since been updated and provided to the Reviewer as the forementioned HIA.

### 3. Response to Comment

In addition to the document request, addressed through Section 1 of this letter, the last sentence of the second paragraph of Harden (2025) poses the following question related to the nearest downgradient private water wells: *‘Is the monitoring system adequately designed to protect these private wells?’* This question is responded to as follows.

The results of the water monitoring program undertaken at the Site demonstrate that there is no evidence of impact to groundwater or surface water quality resulting from Site operations. See, for example, Table 4.1 and the technical discussion in Section 4.1.1 of the HIA.

The results of groundwater and surface water monitoring confirm that Site operations have had no significant impact on groundwater or surface water quality.

On the basis of over 10 years of past performance, there are no anticipated impacts to groundwater resources from Site operations, provided that environmental practices related to soil and slurry importation and handling meet or exceed those practices undertaken in the past.

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<sup>2</sup> Schedule 1 of ECA Number A-500-4277838045 mislabels Mr. Puddephatt’s professional designation, which should properly be labelled as P.Geol. (Limited) with a limitation to hydrogeology and statistical methods.

<sup>3</sup> GHD, 2024. Design and Operations Report, Waste Processing Facility, 23746868 Ontario Inc., dated March 26, 2024

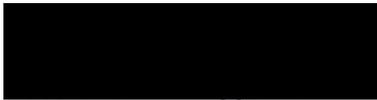
In 2023 monitoring wells MW4-23 and MW5-23 were installed in suitable locations to detect potential impacts from Site activities in the unlikely event that contaminating mass infiltrates into the water table aquifer and migrates beyond the Site/Operations area.

The conditions imposed by the ECA provide further supplemental protections.

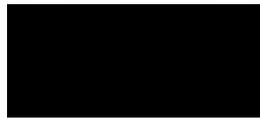
## 4. Closing

If you have any questions regarding GHD's transmittal, please feel free to contact the undersigned.

Regards,  
GHD Limited



**Fred Taylor**  
Principal  
+1 519 340-4222  
fred.taylor@ghd.com



**Dan Puddephatt, M.Sc., P.Ge. (Limited)**  
Senior Hydrogeologist  
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dan.puddephatt@ghd.com

Encl.

**ENVIRONMENTAL COMPLIANCE APPROVAL**

NUMBER A-500-4277838045

Version: 1.0

Issue Date: October 10, 2024

*Pursuant to section 20.3 of the Environmental Protection Act, Revised Statutes of Ontario (R.S.O.) 1990, c. E. 19 and subject to all other applicable Acts or regulations this Environmental Compliance Approval is issued to:*

2374868 ONTARIO INC.

6678 WELLINGTON RD 34 ROAD  
CAMBRIDGE ONTARIO  
N3C 2V4

*For the following site:*

6678 Wellington Road 34

Town of Puslinch, County of Wellington

*You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:*

a waste disposal site

to be used for the processing of the following types of waste:

excess soil, including liquid soil

## **DEFINITIONS**

*For the purpose of this environmental compliance approval, the following definitions apply:*

1. "Approval" means this entire provisional Environmental Compliance Approval document, issued in accordance with Part II.1 of the EPA, and includes any schedules to it, the application and the supporting documentation listed in Schedule 1, as amended from time to time;
2. "Design and Operations Report" means the document describing all on-site operations, procedures and environmental protection measures, further described in the conditions of this Approval;
3. "Director" means any Ministry employee appointed in writing by the Minister pursuant to section 5 of the EPA as a Director for the purposes of Part V of the EPA;
4. "District Manager" means the District Manager of the local district office of the Ministry in which the Site is geographically located;
5. "EPA" means Environmental Protection Act, R.S.O. 1990, c. E.19, as amended;
6. "Monitoring Plan" means the groundwater and surface water monitoring plan described in Section 6 in Item 3 in Schedule 1;
7. "Minister" means the Minister of the Environment, Conservation and Parks, 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;

8. "Ministry" means the ministry of the Minister;
9. "Operator" means any person, other than the Owner's employees, authorized by the Owner as having the charge, management or control of any aspect of the Site, and includes its successors or assigns;
10. "Owner" means any person that is responsible for the establishment or operation of the Site being approved by this Approval, and includes 2374868 Ontario Inc., its successors and assigns;
11. "OWRA" means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended;
12. "PA" means the Pesticides Act, R.S.O. 1990, c. P.11, as amended;
13. "Provincial Officer" means any person designated in writing by the Minister as a provincial officer pursuant to section 5 of the OWRA or section 5 of the EPA or section 17 of PA;
14. "Regional Director" means the Regional Director of the local regional office of the Ministry in which the Site is located;
15. "Reg. 347" means R.R.O. 1990, Regulation 347: General - Waste Management, made under the EPA, as amended from time to time;
16. "Site" means the facility located at 6678 Wellington Road 34, Cambridge, Ontario, authorized by this Approval;
17. "Soil Rules" means the Ministry's "Rules for Soil Management and Excess Soil Quality Standards" document;
18. "Trained Personnel" means persons knowledgeable in the following through instruction and/or practice:
  - a. relevant waste management legislation, regulations and guidelines;
  - b. major environmental concerns pertaining to the material being handled;
  - c. occupational health and safety concerns pertaining to the processes and materials being handled;
  - d. site management procedures, including the use and operation of the equipment that person is required to operate for the processes and materials being handled by that person;
  - e. emergency response procedures;
  - f. specific written procedures for the control of nuisance conditions;
  - g. specific written procedures for management of unacceptable loads;
  - h. the requirements of this Approval.

## TERMS AND CONDITIONS

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*You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:*

1. The Owner and Operator shall ensure compliance with all the conditions of this Approval and shall ensure that any person authorized to carry out work on or operate any aspect of the Site is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
2. Any person authorized to carry out work on or operate any aspect of the Site shall comply with the conditions of this Approval.
3.
  1. Except as otherwise provided by this Approval, the Site shall be designed, developed, built, operated and maintained in accordance with the application for this Approval, dated March 27, 2024, and the supporting documentation listed in Schedule 1.

2.
  1. Construction and installation of the aspects of the Site described in the application for this Approval must be completed within 5 years of the later of:
    1. the date this Approval is issued; or
    2. if there is a hearing or other litigation in respect of the issuance of this Approval, the date that this hearing or litigation is disposed of, including all appeals.
  2. This Approval ceases to apply in respect of the aspects of the Site noted above that have not been constructed or installed before the later of the dates identified in Condition 3.2.1 above.
4. Where there is a conflict between a provision of any document, including the application, referred to in this Approval, and the conditions of this Approval, the conditions in this Approval shall take precedence.
5. Where there is a conflict between the application and a provision in any documents listed in Schedule 1, the application shall take precedence, unless it is clear that the purpose of the document was to amend the application and that the Ministry approved the amendment.
6. Where there is a conflict between any two documents listed in Schedule 1, other than the application, the document bearing the most recent date shall take precedence.
7. The requirements of this Approval are severable. If any requirement of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this Approval shall not be affected thereby.
8. The issuance of, and compliance with the conditions of, this Approval does not:
  1. relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including municipal by-laws relating to zoning or site plan approval; or
  2. limit in any way the authority of the Ministry to require certain steps be taken or to require the Owner and Operator to furnish any further information related to compliance with this Approval.
9. The Owner and Operator shall take steps to minimize and ameliorate any adverse effect (as defined in the EPA) or impairment of air quality or water quality resulting from operations at the Site, including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
10. Despite an Owner, Operator or any other person fulfilling any obligations imposed by this Approval the person remains responsible for any contravention of any other condition of this Approval or any applicable statute, regulation, or other legal requirement resulting from any act or omission that caused the adverse effect (as defined in the EPA) or impairment of water quality.
11. The Owner shall notify the Director in writing, and forward a copy of the notification to the District Manager, within 30 days of the occurrence of any of the following changes:
  1. the ownership of the Site
  2. the Owner or Operator of the Site;
  3. the name or address of the Owner or Operator;
  4. the partners, where the Owner or Operator is or at any time becomes a partnership and a copy of the most recent declaration filed under the Partnerships Act, R.S.O. 1990, c. P.5 shall be included in the notification; or
  5. the directors, where the Owner of the Operator is or at any time becomes a corporation, and a copy of the most current information filed as required by the Corporations Information Act, R.S.O. 1990, c. C.39 shall be included in the notification.
12. No portion of this Site shall be transferred or encumbered prior to or after closing of the Site unless the Director is notified in advance and sufficient financial assurance is deposited with the Ministry to ensure that these conditions will

be carried out.

13. No person shall hinder or obstruct a Provincial Officer in the performance of their duties, including any and all inspections authorized by the OWRA, the EPA or the PA of any place to which this Approval relates, and without limiting the foregoing to:
  1. enter upon the premises where the Site is located, or the location where the records required by the conditions of this Approval are kept;
  2. have access to, inspect, and copy any records required by the conditions of this Approval;
  3. inspect the practices, procedures, or operations required by the terms and conditions of this Approval; and
  4. sample and monitor for the purposes of assessing compliance with the conditions of this Approval or the EPA, the OWRA or the PA.
14. No later than 20 days from the date of issuance of this Approval, the Owner shall submit financial assurance as defined in Section 131 of the EPA to the Director in the amount of \$119,505. This financial assurance shall be in a form and amount acceptable to the Director and shall provide sufficient funds to pay for compliance with and performance of any action specified in this Approval, including Site clean-up, monitoring and the disposal of all quantities of waste on-site, closure and post-closure care of the Site and contingency plans for the Site.
15. Commencing on March 31, 2029, and every 5 years thereafter, the Owner shall provide to the Director a re-evaluation of the amount of the financial assurance required to facilitate the actions described under condition 14 above. Additional financial assurance, if required, must be submitted to the Director within 20 days of written acceptance of the re-evaluation by the Director.
16. The amount of financial assurance is subject to review at any time by the Director and may be amended at his/her discretion. If any financial assurance is scheduled to expire or notice is received, indicating financial assurance will not be renewed, and satisfactory methods have not been made to replace the financial assurance at least 60 days before the financial assurance terminates, the financial assurance shall forthwith be replaced by cash.
17. Any information requested by the Ministry concerning the Site and its operation under this Approval, including, but not limited to, any records required to be kept by this Approval, shall be provided in a timely manner to the Ministry, upon request. Records shall be retained for 7 years unless otherwise authorized in writing by the Director.
18. The receipt of any information by the Ministry or the failure of the Ministry to prosecute any person or to require any person to take any action, under this Approval or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:
  1. an approval, waiver, or justification by the Ministry of any act or omission of any person that contravenes any term or condition of this Approval or any statute, regulation or other legal requirement; or
  2. acceptance by the Ministry of the information's completeness or accuracy.
19.
  1. The receipt, unloading, loading and transfer of waste and other waste-derived materials may be carried out at the Site between the hours of 7:00am and 6:00pm, Monday through Friday, unless otherwise restricted by municipal by-laws.
  2. Waste may be processed and managed at the Site 24 hours per day, 7 days per week, unless otherwise restricted by municipal by-laws.
20. Only waste generated in the province of Ontario shall be accepted at the Site.
21. No waste other than non-hazardous excess soil that is liquid shall be accepted at the Site.
22. The Site is approved for the following waste management activities:
  1. The receipt, temporary storage, and transfer of excess soil that is liquid, and the temporary storage, testing and

transfer of dry processed soil, process water and other process derivatives.

2. The processing of excess soil that is liquid soil using the equipment and methods described in Item 1 of Schedule 1, including the passive dewatering of excess soil that is liquid using lined swales and ponds.
  3. The temporary storage of process water in lined swales and ponds prior to testing and discharge.
- 23.
1. The amount of waste received at the Site shall not exceed 125 tonnes per day.
  2. The amount of waste and waste-derived materials present at the Site at any one time shall not exceed the following:
    1. 440 cubic metres of liquid waste, including excess soil that is liquid and process water, contained in lined swales and ponds on-site; and
    2. 525 tonnes of all other waste, including dry processed soil and process derivatives.
  3. The Owner shall refuse any load if the receipt of that load could reasonably be expected to cause non-compliance with this Approval, including the receipt and storage limitations set out above.
- 24.
1.
    1. Trained Personnel shall supervise all shipments of waste received at the Site. Prior to any shipment being unloaded, Trained Personnel shall review the accompanying information for that shipment, and examine the contents of the truck where possible, to ensure the waste matches the description provided and that the waste is permitted to be received further to the conditions of this Approval. If any shipment is suspected of containing unapproved waste, that shipment shall be refused and shall not be unloaded at the Site.
    2. Trained Personnel shall examine all shipments of waste while they are being unloaded. If at any time a shipment is discovered to contain unapproved material, the shipment shall be refused and all portions of the shipment that can be recovered shall be removed from the Site.
  2. In the event that a shipment of waste is rejected from the Site, the Owner shall forthwith notify the District Office of the following in writing:
    1. the name of the company that brought the rejected load to the Site;
    2. the license plate number of the vehicle that brought the rejected load to the Site;
    3. a description of the rejected waste and the reason for rejecting the shipment;
    4. the destination of the rejected waste if the driver provides that information.
  3. All liquid soil shall be unloaded directly into the designated soil management area in a manner that prevents spills during transfer.
  4. The Owner shall ensure that:
    1. no process water is discharged directly to a storm sewer, to any waterbody or any other part of the natural environment, or otherwise in a manner that requires approval under Section 53 of the OWRA, unless such an approval is in effect for the Site; and
    2. all process water is otherwise managed in accordance with applicable municipal, provincial and federal requirements, which may include discharge to sanitary sewer as permitted by the local municipality or disposal of the process water off-site in a facility permitted to receive such material.
  5. Notwithstanding Condition 24.4 above, process water may be infiltrated at the Site provided the waste is tested prior to discharge in accordance with the Monitoring Plan.
  6. Dry excess soil recovered from processing of excess soil that is liquid may be stored outdoors in stockpiles in designated areas on an impermeable surface, with any contact water generated to be directed to the on-site drainage swale.

7. The Owner shall ensure that the management of dry excess soil is carried out in a manner that minimizes impacts from wind-blown dust.
  8. Dry excess soils that have been tested shall remain segregated from all other soils on-site.
25. No processed soil shall leave the Site for reuse unless it has been sampled, analysed and managed in accordance with the following:
1. The Owner shall ensure that soil sampling, analysis and the number of samples collected for each stockpile is in accordance with Table 2 of Schedule E in Ontario Regulation 153/04.
  2.
    1. The Owner shall ensure that discrete samples are taken and analysed for:
      1. metals;
      2. hydride-forming metals;
      3. petroleum hydrocarbons (PHCs);
      4. benzene, toluene, ethylbenzene, xylene (BTEX);
      5. volatile organic compounds (VOCs);
      6. polycyclic aromatic hydrocarbons (PAHs);
      7. acid/base/neutral compounds (ABNs);
      8. chlorophenols (CPs).
    2. The Owner shall ensure that each processed soil load leaving the Site is tested in accordance with Schedule 9 in Reg. 347 ("slump test") to ensure the processed soil is solid.
    3. The Owner shall ensure that any additional sampling and analysis specific to the receiving site shall be carried out as required by the local municipality, the local conservation authority and any applicable federal/provincial legislation.
    4. Should the receiving site be subject to the requirements set out in O. Regulation 153/04, the Owner shall ensure that any additional sampling and analysis specific to the receiving site shall be carried out as recommended by the Qualified Person for the receiving site.
  3.
    1. When determining bulk concentrations of contaminants in the processed soil to verify compliance with the Soil Standards, the testing shall be in compliance with the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated July 1, 2011, as amended and in accordance with the industry standards.
    2. The Owner shall submit the samples to an accredited laboratory for the required analysis. All samples shall be handled in accordance with the instructions of the accredited laboratory carrying out the analytical testing.
  4. Processed soil to be sent off-site for beneficial reuse as described Section 5(1)3 in Ontario Regulation 406/19 shall only be sent off-site for reuse in accordance with Section 3 of Ontario Regulation 406/19 and the Soil Rules. All other processed soil shall only be transferred off-site to a waste disposal site that is approved to accept that type of material in accordance with the Environmental Compliance Approval for that site, or to a location not required to obtain an Environmental Compliance Approval to manage that material.
  5. Rock (having a same meaning as in Ontario Regulation 406/19) that does not meet the definition of inert fill set out in Reg. 347 shall only be transferred off-site to a waste disposal site that is approved to accept that type of material in accordance with the Environmental Compliance Approval for that site, or to a location not required to obtain an Environmental Compliance Approval to manage that material.
26. A sign shall be posted and maintained at the entrance to the Site in a manner that is clear and legible, and shall include

the following information:

1. the name of the Site and Owner;
2. this Approval number;
3. the name of the Operator;
4. the normal hours of operation as described in Condition 19 above;
5. the allowed materials that may be accepted at the Site, and any materials explicitly prohibited by conditions of this Approval;
6. a telephone number to which complaints may be directed; and
7. a twenty-four (24) hour emergency telephone number (if different from above).

27. The Site shall be operated and maintained in a secure manner, such that unauthorized persons cannot enter the Site.

28. 1. The Owner shall:

1. construct liners under all soil storage areas and under all process water collection/storage and conveyance pathways on-site no later than 90 days from the date of issuance of this Approval in order to prevent uncontrolled infiltration of process water or contact water at the Site;
2. submit as-built drawings showing construction details for the above-noted liners to the Director no later than 120 days from the date of issuance of this Approval;
3. maintain the above-noted liners in good condition at all times.

2. The Owner shall ensure that the Site is monitored in accordance with the Monitoring Plan noted in Item 3 in Schedule 1, including:

1. sampling of the groundwater wells MW01-20, MW02-20, MW03-20, MW4-23, MW5-23, BH213, BH214, BH219 and the two on-site water supply wells AGW1, APW1 on a quarterly basis with samples to be analyzed for metals, VOCs, PHCF1-F4, SVOCs, and PAHs;
2. sampling of the stormwater management pond on a weekly basis with samples to be analyzed for metals, VOCs, PHCF1-F4, SVOCs, and PAHs;
3. measurement of the static groundwater levels at the eight groundwater monitoring wells (excluding supply wells) quarterly during the groundwater sampling events.

3. All samples shall be submitted to a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory for analysis.

4. Each surface water sample shall be compared against the limits set out in Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Coarse Textured Soils, as provided in the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

5. Process water shall be stored in the on-site temporary holding pond until it has been tested. Process water that does not meet Table 2 Standards as noted above shall not be released into the natural environment, but shall be removed from the Site for treatment or disposal at an approved facility.

6. The Owner shall prepare and submit to the District Manager a groundwater monitoring report, on an annual basis, within 90 days following the end of each operational season. The first report shall cover the first annual period following the date of issuance of this Approval, with subsequent reports covering successive annual periods thereafter.

7. The annual groundwater report shall be prepared in accordance with the following:

1. The report shall be prepared by a qualified person who is a professional geoscientist (P. Geo.) and/or a registered professional engineer (P. Eng.) with relevant hydrogeological expertise.
2. The report shall contain a summary and interpretation of the groundwater monitoring data, and shall include an assessment of the following:
  1. groundwater flow direction;
  2. groundwater quality analytical results;
  3. a statement as to the adequacy of the groundwater monitoring program;
  4. a statement as to the adequacy of the parameters of concern, trigger threshold values and contingency measures under the Groundwater Trigger Mechanism and Contingency Plan as recognized in this Approval.
3. The report shall include a statement from the qualified person on the effectiveness of any engineered controls and associated operational practices in place to mitigate environmental impacts.
4. The report shall include a statement from the qualified person on whether the Reasonable Use Guideline has been met at the property boundary in accordance with the Ministry document entitled "Guideline B-7, Incorporation of the Reasonable Use Concept into Groundwater Management" dated 1994.
5. No modification shall be made to the groundwater monitoring program unless permitted through an amendment to this Approval.
8. The Owner shall adopt the preliminary Trigger Response Plan for the groundwater monitoring program as described in Item 2 in Schedule 1.
9. Within 30 days of collecting 2 years of groundwater monitoring data, and no more than 25 months from the date of issuance of this Approval, the Owner shall submit to the District Manager a Groundwater Trigger Mechanism and Contingency Plan that is protective of drinking water. The groundwater parameters of concern shall be determined after collecting 2 years of groundwater quality data in accordance with the groundwater monitoring program described in this Approval. This document shall be prepared by a qualified person who is a registered professional geoscientist (P. Geo.) and/or a registered professional engineer (P. Eng.) with relevant hydrogeological expertise, and shall be prepared in accordance with the following:
  1. The document shall include a proposal for site-specific groundwater trigger threshold values for parameters of concern in accordance with the Ministry's Guideline B-7 document noted above.
  2. The document shall include proposed trigger mechanisms and contingency measures for the Site.
  3. Once approved by the District Manager, trigger threshold values, trigger mechanisms and contingency measures shall be incorporated into the groundwater monitoring plan for the Site.
  4. No modifications shall be made to the Groundwater Trigger Mechanism and Contingency Plan unless permitted through an amendment to this Approval.
10. No later than 90 days from the date of issuance of this Approval, the Owner shall prepare a Spill Prevention and Contingency Plan for that Site that describes the infrastructure and procedures that will be in place at the Site to prevent spills and all contingency measures to be employed in the event of a spill at the Site.
11. No later than 90 days from the date of issuance of this Approval, the Owner shall prepare a plan to prevent impacts to groundwater from the storage and use of winter maintenance materials including salt.
12. The Owner shall ensure that any water taking is only carried out in accordance with a Permit to Take Water where such a permit is required.
29. The Owner shall maintain a training plan to be used to train all employees that operate the Site.
30. The Owner shall ensure that Trained Personnel are available at all times during the hours of operation of this Site, and that Trained Personnel supervise all management of excess soils that are liquid, processed soils, and process water and

other process derivatives at the Site.

31. An inspection of the entire Site and all equipment on-site shall be conducted each day the Site is in operation to ensure that: the Site is secure; that the operation of the Site is not causing any nuisances; that the operation of the Site is not causing any adverse effects on the environment; and that the Site is being operated in compliance with this Approval. Any deficiencies discovered as a result of the inspection shall be remedied immediately or as soon as practicable, which may require temporarily ceasing operations at the Site if needed.
32. A record of the inspections, including the following information, shall be kept in the daily log book:
  1. the name and signature of person that conducted the inspection;
  2. the date and time of the inspection;
  3. a list of any deficiencies discovered;
  4. any recommendations for remedial action; and
  5. the date, time and description of actions taken.
33. The Site shall be operated and maintained such that vermin, vectors, dust, litter, odour and noise do not create a nuisance.
34. If at any time the Owner receives a complaint regarding an adverse effect (as defined in the EPA) due to operation of the Site, the Owner shall respond to the complaint according to the following procedure:
  1. The Owner shall record and number each complaint, either electronically or in a separate log book, along with the following information:
    1. the nature of the complaint;
    2. the name, address and telephone number of the complainant (if provided);
    3. the date and time the complaint was received;
    4. a description of the weather conditions at the time of the complaint;
    5. a description of the liquid soils, processed soils and process water handling activities taking place at the time of the complaint; and
    6. a description of the known or suspected activity causing the complaint.
  2. The Owner shall:
    1. initiate appropriate steps to determine all possible causes of the complaint;
    2. proceed to take the necessary actions to eliminate the cause of the complaint;
    3. notify the District Manager of the complaint within 24 hours of receiving the complaint;
    4. forward a written response to the District Manager within 5 business days of receiving the complaint, with a copy to the complainant if they have identified themselves, that describes the actions taken to address the complaint; and
    5. forward daily updates to the District Manager, if requested, until the complaint is resolved.
  3. The Owner shall complete and retain on-site a report written within 10 business days of the complaint date, including:
    1. the information required in conditions 34.1 and 34.2.4 above;
    2. a list of the actions taken to resolve the complaint; and

3. recommendations for any remedial measures, managerial changes or operational changes that would reasonably avoid the recurrence of similar incidents in the future.

35. The Owner shall prepare and provide a copy of an emergency response plan to the Fire Department within 30 days of the issuance of this Approval.

36. The emergency response plan shall be kept up to date, and a copy shall be retained and accessible to all staff at all times.

37. The equipment, materials and personnel requirements outlined in the emergency response plan shall be immediately available on the Site at all times. The equipment shall be kept in a good state of repair and in a fully operational condition.

38. Each staff member that operates the Site shall be fully trained in the use of the equipment they are required to operate under the emergency response plan and in the procedures to be employed in the event of an emergency.

39. The Owner shall immediately take all measures necessary to contain and clean up any spill (as defined in the EPA) which may result from the operation of this Site and immediately implement the emergency response plan if required.

40. A Closure Plan shall be submitted to the Director for approval, with a copy to the District Manager, no later than six (6) months before the planned closure date of the Site. The Closure Plan shall include, at a minimum, a description of the work that will be done to facilitate closure of the Site and a schedule for completion of that work.

41. Upon closure, the Site shall be closed in accordance with the approved Closure Plan.

42. No more than 10 days after closure of the Site, the Owner shall notify the Director, in writing, that the Site is closed and that the approved Closure Plan has been implemented.

43. A daily log shall be maintained at the Site, either electronically or in written format, and shall include the following information as a minimum:

1. the date;

2. quantities and sources of all waste received at the Site;

3. estimated quantities of all stockpiled soil on-site at the end of each operating day;

4. quantities and destinations of all waste and waste-derived materials shipped from the Site;

5. a record of all sampling and analysis carried out further to the conditions of this Approval;

6. a record of daily inspections required by this Approval;

7. a record of all maintenance or repair activities carried out on any impermeable liners, water storage or conveyance features, or other waste management infrastructure and equipment on-site;

8. a record of any process upsets or spills with the potential to enter the natural environment, the nature of the spill or process upset and the action taken for the clean up or correction of the spill, the time and date of the spill or process upset, and for spills, the time that the Ministry and other persons were notified of the spill in fulfilment of the reporting requirements in the EPA .

9. a record of any refusals, including the types and amounts of waste refused, reasons for refusal and actions taken;

10. a record of all complaints received regarding operations at the Site.

44. 1. By March 31, 2025, the Owner shall prepare a written report that covers the period from the date of issuance of this Approval until March 31, 2025 that shall be kept on-site and made available to any Provincial Officer upon request.

2. By March 31, 2026, and on an annual basis thereafter, the Owner shall prepare a written report for the previous

calendar year that shall be kept on-site and made available to any Provincial Officer upon request.

3. The report noted above shall include, at a minimum, the following information:
  1. a detailed monthly summary of the type and quantity of all incoming and outgoing liquid soils, processed soils, process water, rock and debris and the destination of all outgoing liquid soils, processed soils, process water, rock and debris along with a summary of all sampling and analysis for outgoing materials;
  2. the results of the sampling and analysis required under the Monitoring Plan;
  3. any environmental and operational problems, that could negatively impact the natural environment (as defined in the EPA), encountered during the operation of the Site and during the facility inspections and any mitigative actions taken;
  4. any changes to the emergency response plan or the Design and Operations Report since the last Annual Report;
  5. any recommendations to minimize environmental impacts from the operation of the Site and to improve Site operations and monitoring programs in this regard.

## REASONS

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*The reasons for the imposition of these terms and conditions are as follows:*

1. 1. The reason for the definitions section is to simplify the wording of the subsequent conditions and define the specific meaning of terms as used in this Approval.
2. The reason for Conditions 1, 2, 4, 5, 6, 7, 8, 9, 10 and 13 is to clarify the legal rights and responsibilities of the Owner and Operator.
3. The reason for Condition 3 is to ensure that the Site is operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.
4. The reasons for Condition 11 are to ensure that the Site is operated under the corporate name which appears on the application form submitted for this approval and to ensure that the Director is informed of any changes.
5. The reasons for Condition 12 are to restrict potential transfer or encumbrance of the Site without the approval of the Director and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this Approval.
6. The reason for Conditions 14, 15 and 16 is to ensure that sufficient funds are available to the Ministry to clean up the Site in the event that the Owner is unable or unwilling to do so.
7. The reason for Conditions 17 and 18 is to ensure that appropriate Ministry staff have ready access to the Site for inspection of facilities, equipment, practices and operations required by the conditions in this Approval. This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the EPA, OWRA and PA.
8. The reason for Condition 19 is to specify the hours of operation for the Site.

9. The reason for Condition 20 is to specify the approved service area from which waste may be accepted at the Site.
10. The reasons for Conditions 21, 22 and 23 are to specify the types of materials that may be accepted at the Site, the maximum amounts of waste that may be stored at the Site, the maximum rate at which the Site may receive and ship waste and the allowable methods of processing based on the Owner's application and supporting documentation.
11. The reason for Condition 24 is to ensure that all wastes received at the Site are properly identified and classified to ensure they are managed in a manner that protects the health and safety of people and the environment.
12. The reasons for Condition 25 is to ensure that all processed material is testing and to ensure that any processed material is only sent off-site for reuse to an appropriate receiving facility.
13. The reason for Condition 26 is to ensure that users of the Site are fully aware of important information and restrictions related to Site operations and access under this Approval.
14. The reason for Condition 27 is to ensure the controlled access and integrity of the Site by preventing unauthorized access when the Site is closed and no site attendant is on duty.
15. The reason for Conditions 28 and 33 is to ensure that the Site is operated in a manner which does not result in a nuisance or a hazard to the health and safety of people and the environment, and to ensure that the Site is monitored to prevent and address impacts groundwater.
16. The reason for Conditions 29 and 30 is to ensure that the Site is operated by properly Trained staff in a manner which does not result in a hazard or nuisance to people or the environment.
17. The reason for Conditions 31 and 32 is to ensure that inspections of all Site grounds and infrastructure are carried out on a regular basis, and that detailed records of Site inspections are recorded and maintained for compliance and information purposes.
18. The reason for Condition 34 is to ensure that any complaints regarding Site operations at the Site are responded to in a timely manner.
19. The reasons for Conditions 35, 36, 37, 38 and 39 is to ensure that an Emergency Response Plan is developed and maintained at the Site, and that staff are properly trained in the operation of the equipment used at the Site and emergency response procedures.
20. The reason for Conditions 40, 41 and 42 is to ensure that the Site is closed in accordance with Ministry standards and to protect the health and safety of the public and the environment.
21. The reason for Condition 43 is to provide for the proper assessment of effectiveness and efficiency of site design and operation, their effect or relationship to any nuisance or environmental impacts, and the occurrence of any public complaints or concerns. Record keeping is necessary to determine compliance with this Approval, the EPA and its regulations.
22. The reason for Condition 44 is to ensure that regular review of site development, operations and monitoring data is documented and any possible improvements to site design, operations or monitoring programs are identified. An annual report is an important tool used in reviewing site activities and for determining the effectiveness of

site design.

## APPEAL PROVISIONS

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In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me and the Ontario Land Tribunal, within 15 days after the service of this notice, require a hearing by the Tribunal. You must also provide notice to, the Minister of the Environment, Conservation and Parks in accordance with Section 47 of the *Environmental Bill of Rights, 1993* who will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

- I. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- II. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

- I. The name of the appellant;
- II. The address of the appellant;
- III. The environmental compliance approval number;
- IV. The date of the environmental compliance approval;
- V. The name of the Director, and;
- VI. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar* Ontario Land Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5 <a href="mailto:OLT.Registrar@ontario.ca">OLT.Registrar@ontario.ca</a>	and	The Minister of the Environment, Conservation and Parks 777 Bay Street, 5th Floor Toronto, Ontario M7A 2J3	and	The Director appointed for the purposes of Part II.1 of the <i>Environmental Protection Act</i> Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5
--	-----	--	-----	---

**\* Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or [www.olt.gov.on.ca](http://www.olt.gov.on.ca)**

This instrument is subject to Section 38 of the *Environmental Bill of Rights, 1993*, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at [ero.ontario.ca](http://ero.ontario.ca), you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

Dated at Toronto this 10th day of October, 2024



Mohsen Keyvani

Director

appointed for the purposes of Part II.1 of the Environmental Protection Act

c: Eric Nafziger

The following schedules are a part of this environmental compliance approval:

# SCHEDULE 1

---

This Schedule 1 includes a list of documents relied upon for review:

1. Environmental Compliance Approval received March 27, 2024 requesting approval of a liquid soil processing site, signed by Eric Nafziger, Site Manager, 2374868 Ontario Inc., including all supporting documentation.
2. Email dated June 25, 2024 from Dan Puddephatt, P.Geo., GHD, to Pamela Grande, P.Geo., MECP, including the attached letter dated June 25, 2024 from Dan Puddephatt, P.Geo., GHD to Pamela Grande, P.Geo., MECP detailing the proposed trigger response plan ("GHD, 2024a. Proposed Trigger Response Plan – Conestoga Badger Inc. June 25").
3. Email dated July 5, 2024 from Dan Puddephatt, P.Geo., GHD, to Pamela Grande, P.Geo., MECP, including the attached document entitled "Hydrogeological Impact Assessment Revision No.1" dated July 2, 2024 ("GHD, 2024b. Hydrogeological Impact Assessment Revision No. 1, 2374868 Ontario Inc., Badger Conestoga Inc. July 5").

## Loden Ozaki

---

**From:** Dan Puddephatt  
**Sent:** Tuesday, June 25, 2024 4:12 PM  
**To:** Grande, Pamela (MECP)  
**Cc:** Armour, Lynnette (MECP); Fred Taylor; frankertl@live.com; Ben Kempel  
**Subject:** 11210029- Action Items: Call to discuss questions RE: ECA for Badger Conestoga Inc. - HIA Revision No. 1  
**Attachments:** 11210029-LTR-4-Grande-Proposed Trigger Response Plan.pdf; ECAs.zip; 11210029 - RPT 1- Design and Operations Report 2024\_reduced\_filesize.pdf

Hi there Pamela and Lynnette.

I hope you are doing well.

As discussed last week, please see the attached Proposed Trigger Response Plan.

During our call, Fred mentioned that our clients have received ECAs at comparable hydrovac locations. I have attached two example ECAs in a zipped folder that I have attached. ECA No. A-500-1188155825 is for the same owner/operator as 2374868 Ontario Inc. (Badger Conestoga Inc., the Applicant).

I have also attached the Design and Operations Report, as you requested. I have reduced the file size for transfer. Please let me know if there are any issues with the legibility of figures. I can also use our large-file-transfer for the original, if needed.

Please feel free to reach out if you have any questions.

All the best.

**Dan Puddephatt (he/him) | A GHD Associate**

**M.Sc. P.Geo. (Limited)**

**Hydrogeology Practice Leader - Waterloo**

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Our ref: 11210029-LTR-4

25 June 2024

**Pamela Grande, M.Sc., P.Geo., Hydrogeologist**  
**Ministry of the Environment, Conservation and Parks**  
**West Central Region | Technical Support Section**  
**119 King Street West, 12th Floor**  
**Hamilton, Ontario L8P 4Y7**

## **Proposed Trigger Response Plan – Conestoga Badger Inc.**

Dear Pamela

### **1. Introduction**

GHD has prepared this letter to outline a proposed trigger response plan (TRP) for the hydro-vacuuming (hydrovac) operation located on an approximately 2 hectare (ha) portion of the 40 ha property owned by 2374868 Ontario Inc. (Badger Conestoga Inc., Badger, or the Applicant). The TRP has been developed following a request by the Ministry of the Environment, Conservation and Parks (MECP) during our June 18, 2024 meeting, to support an Environmental Compliance Approval (Waste Processing and Transfer) for the Site.

### **2. Background**

The Site receives a slurry of soil mixed with water (liquid soil) from hydrovac trucks operating at various sites throughout Southern Ontario. The water used for off-Site hydrovac operations is supplied by an on-Site well or municipal water supply connections at locations near the hydrovac work sites. The hydrovac trucks collect the soil from utility, municipal, and commercial sites generally to ensure that utility strikes and damage do not occur to existing underground infrastructure during intrusive work. Clean liquid soils that are returned to the Site are placed in a stockpile area where the water drains off via gravity through a vegetated swale to the stormwater management pond. The dry soils are sampled for chemical analyses in accordance with current Excess Soil/similar hydrovac Waste ECA provisions and practice to confirm they are acceptable for use at receiving sites. The majority of the soils are acceptable for use in accordance with the approved Ministry of Natural Resources and Forestry (MNRF) Rehabilitation Plan for the licensed pit in the northern two thirds of the Site, which is zoned as Extractive Industrial (EXI).

No hydrovac operations are conducted at sites with known soil or groundwater contaminants. Trucks which have inadvertently come in contact with suspected contaminated soils as determined by new site information, visual inspection, and/or identification of odours indicative of potential contamination, for example, are directly sent to an MECP-approved treatment or disposal facility and only return to the Site after all potentially contaminated liquid soils are removed.

Groundwater samples have been collected from two active Site water supply wells (APW1 and AGW1 supply wells) since 2014, and more recently on seven occasions between 2020 and 2024. The groundwater samples were analyzed for a comprehensive suite of analytes, which included total metals, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH including the F1 to F4 fractions), semi-volatiles/polycyclic aromatic hydrocarbons/base neutral extractables (SVOCs/PAHs/BNAS). No VOCs, petroleum hydrocarbons, PCBs, SVOCs/PAHs/BNAs have been detected above the laboratory reporting limits (RLs). Groundwater quality results from both of these supply wells reflects the natural geochemistry of the deep overburden and bedrock aquifers.

In addition to the water supply well sampling, groundwater samples have been collected from eight onsite monitoring wells to further support ongoing groundwater quality assessment and hydrogeological conditions, including:

- Source strength wells (wells closest to the discharge swale where runoff collects and pools) MW03-20 and BH214; cross-gradient well MW02-20;
- Downgradient wells MW01-20, MW04-23, and MW05-23; and
- Background wells BH213 and BH219;

These wells have been sampled since 2020 (MW01-20, MW02-20, and MW03-20) and 2023 (MW04-23, MW05-23, BH213, BH214, and BH219). These monitoring wells have been sampled for a suite of analytes, which include selected general chemistry, metals, PCBs, VOCs, TPH F1 to F4, and SVOCs/PAHs/BNAS. All groundwater results to date have been below their respective Ontario Drinking Water Quality Standards (ODWQS) and Table 2 Standards<sup>1</sup> except for a single anomalous result from MW03-20 for benzo(b+j)fluoranthene in the sample collected on April 8, 2023<sup>2</sup>.

Monitoring of soil and surface water was been ongoing at the Site since 2017 consistent with other similar imported hydrovac sites in accordance with accepted MECP/ECA practices.

The Site has been operating as a hydrovac business since approximately 2007 and there are no baseline water quality data representative of pre-operation conditions. GHD is recommending continued quarterly groundwater sampling that includes the BH213 and BH219 background wells to characterize background conditions. GHD recommends the following TRP in the interim.

### 3. Recommended Trigger Response Plan

For the purpose of assessing potential groundwater quality impacts related to Site operations, GHD is proposing the following TRP and response plan.

- If there is an exceedance of MECP Table 2 Standards in any of the source strength or downgradient wells, then a second round of groundwater sampling for the parameter(s) for which the exceedance was observed will be conducted within 60 days to ensure that the sample is representative of aquifer conditions. Should a similar parameter exceedance be confirmed after the second round of sampling, the MECP District Office will be notified of the groundwater exceedance.
- Based on the historical groundwater data, as well as weekly surface water monitoring results and other Site information (e.g., soil sampling data and operational incidents) as applicable, a groundwater response assessment, inclusive of a risk screening evaluation if the exceedance is determined to be the result of Site operations, will be conducted for the parameter(s) of concern to determine potential response actions to be completed. Results of the risk screening evaluation and potential response actions (i.e., additional

<sup>1</sup> Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Coarse Textured Soils, as provided in the Table 1 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

<sup>2</sup> GHD, 2024. Hydrogeological Impact Assessment Revision No. 1. 2374868 Ontario Inc, Badger Conestoga Inc.. April 22.

sampling of groundwater and surface water samples, treatment/remediation options, etc.) will be reported to the MECP District Office for review and input prior to finalizing and implementing appropriate actions.

This approach is similar to other Waste (Processing and Transfer) ECAs that have been issued for similar hydrovac operations, including for 2374868 Ontario Ltd.

## 4. Closing

If you have any questions or comments regarding the proposed Trigger Response Plan, please feel free to contact the undersigned.

Regards  
GHD Limited



**Dan Puddephatt, M.Sc., P.Geo. (Limited)**  
Project Hydrogeologist

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**Ben Kempel, P.Geo.**  
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Project Director

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Copy to: Frank Ertl (Badger)  
Lynnette Armour (MECP)



# **Design and Operations Report**

## **Waste Processing Facility**

2374868 Ontario Inc.

March 26, 2024

<b>Project name</b>		Badger 2374868 Ont Inc.					
<b>Document title</b>		Design and Operations Report   Waste Processing Facility					
<b>Project number</b>		11210029					
<b>File name</b>		Document2					
<b>Status Code</b>	<b>Revision</b>	<b>Author</b>	<b>Reviewer</b>		<b>Approved for issue</b>		
			<b>Name</b>	<b>Signature</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
S4		Amelia Soutar	Fred Taylor		Fred Taylor		3/26/2024

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# 1. Introduction

This Design and Operations (D&O) Report has been prepared to support an application by 2374868 Ontario Inc. (the Applicant), for an Ontario Ministry of the Environment Conservation and Parks (MECP) Environmental Compliance Approval (ECA) (Waste Processing). The D&O Report describes the Applicant's hydrovac processing facility operations located at 6678 Wellington Road 34 in Wellington County, Township of Puslinch, Ontario (Site). The Site is located on a portion of a larger Property as shown on Figure 1. 2374868 Ontario Inc. owns the Property and operates the processing site. An application for an ECA (Air and Noise) also has been submitted. Based on pre consultation with MECP, an ECA (Industrial Sewage Works) is not required as a Stormwater Management Plan is included with the D&O Report.

The Facility receives soil mixed with water (liquid soil or nonhazardous waste) from hydrovacating operations conducted by Site personnel and trucks at multiple sites in southern Ontario. The soil water mixture is placed in stockpiles, water gravity drains off to a stormwater management pond, and the dry soil is sampled for chemical analysis to confirm that it is acceptable for use in rehabilitation for the closed Ontario Ministry of Natural Resources and Forestry (MNRF) licensed aggregate pit on the Property and other receiving sites.

## 1.1 Scope and Limitations

*This report: has been prepared by GHD for 2374868 Ontario Inc. and may only be used and relied on by 2374868 Ontario Inc. for the purpose agreed between GHD and 2374868 Ontario Inc. as set out in section 01 of this report.*

*GHD otherwise disclaims responsibility to any person other than 2374868 Ontario Inc. arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.*

*The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.*

*The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.*

*The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 01 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.*

### **Accessibility of documents**

*If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.*

# 2. Facility Design

## 2.1 Location and Land Use

The Property is legally described as Lot 8, Concession 3 in Wellington County, the Township of Puslinch and consists of a 40-hectare property. The northern two thirds of the Property is zoned as Extractive (EXI) and the southern one third is zoned as Agricultural (A). The liquid soil receiving and processing area of the Site covers a 2.2 hectares (ha) portion of the Extractive Industrial (EXI) zoned parcel as shown on Figure 2. Capital Paving Inc. is the Site licensee and has an agreement with the Applicant to complete Site rehabilitation. The MNRF approved Pit Rehabilitation Plan provides for soil importation and associated infrastructure for rehabilitation. The current zoning also allows some of the Site operations and an application for a minor zoning amendment to include the specific allowed uses was submitted to the Township of Puslinch in December 2020. A figure showing the zoning around the Property is provided in Appendix A. In March 2024, following discussion with MECP, MECP provided an email which indicates that they would

consider issuing the Waste ECA without the necessary zoning by-law amendment in place. A copy of the email is provided in Appendix A.

The adjacent property land use to the west is an operating aggregate extraction pit, to the north is agricultural land, to the east is forested conservation land, and to the south are residential and agricultural lands. The topography of the Site is shown on Figure 3.

## 2.2 Layout

A copy of a legal survey of the Property is provided in Appendix B and was used along with topographical and other information to prepare a Site layout (Figure 2). As shown on Figure 2, the Site operations include the following:

- Site access
- Office building
- Vehicle parking areas
- Soil and water management
- Security

The Property has some wooden fencing on the south, east and north sides.

An approximately 6.0 metre (m) wide fire access route and sufficient fire truck turnaround in the yard area has been designated at the Site and remains unobstructed. Parking for hydrovac trucks and employee vehicles are located around the building.

Empty trucks and vehicles related to the operations and employee vehicles can also be parked in the agricultural area of the Property for overflow management, and for safety considerations as needed.

## 2.3 Hydrogeological Assessment

The Property currently has two active potable water wells (see Figure 2). The first well is located at the Site and the second well is located on the Agricultural parcel. Up to 50,000 liters per day of groundwater is pumped from the Site well to use to fill hydrovac trucks before they leave the Site.

During pre-consultation for the Waste ECA, the MECP requested that an Hydrogeological Impact Assessment (HIA) be completed for MECP's review prior to the application being submitted. An HIA was prepared and submitted in December 2020. The MECP provided review and comments on the HIA in a letter dated January 25, 2021. The Applicant/GHD provided responses to the MECP comments in a letter dated April 21, 2021 (GHD, 2021a). Based on the acceptance of the response to comments, MECP indicated that the ECA application could then be submitted and the application was submitted in December 2021. Since the original application was submitted in 2021, the Applicant has continued to conduct routine soil, surface water, and groundwater monitoring and also completed additional groundwater investigations.

A revised HIA was prepared to update the December 2020 HIA with the results of the additional groundwater investigations (new monitoring wells), monitoring information and provide a more up-to-date evaluation of the Site hydrogeological setting and groundwater quality conditions. In March 2024, HIA (Revision No. 1) has also been submitted to MECP for their information and review and comment.

The 2024 HIA has the following conclusions:

*Based on the results of the hydrogeological assessment presented above, the following conclusions are provided:*

1. *The results of groundwater and surface water monitoring confirm that Site operations conducted for the past 10 years have had no significant impact on groundwater or surface water quality.*
2. *On the basis of past performance, there are no anticipated impacts to groundwater resources from Site operations, provided that environmental practices related to soil and slurry importation and handling meet or exceed those practices undertaken in the past.*

3. *The groundwater and surface water regimes can be adequately monitored to ensure a timely response to potential degradation in water quality.*
4. *An appropriate contingency measure to be considered in the event of an impact to groundwater resources from Site-related activities are the replacement of downgradient water supplies with wells completed in a deeper aquifer.*

## **2.4 Building**

The Office Building is a barn style open concept with a steel frame wood and metal structure with a concrete foundation and floor. The building is used as an office to support operations, miscellaneous materials and small equipment storage.

## **2.5 Operating Times**

The Site typically operates from 7 am to 6pm Monday to Friday with trucks leaving in the morning and returning in the afternoon to unload. Some trucks make multiple trips from/to the Site during the day. The Site also occasionally provides hydrovac services outside typical operating hours (e.g., after hours and weekends). The Site operates for 50 weeks of the year.

## **2.6 Truck Traffic**

Hydrovac trucks enter and exit the Site via the access road from the entrance at Wellington Road 34. There is a maximum of 25 hydrovac trucks operating from the Site. A Traffic Study was completed in 2020 which indicated that the hydrovac truck traffic would not cause significant impacts to existing traffic on Road 34. A copy of the Traffic Study is provided in Appendix C. It also is noted that without the hydrovac operation rehabilitation of the closed licensed pit would still require a similar amount of truck traffic to provide imported soil for rehabilitation activities. The Truck Traffic Study was submitted to the Township as part of the zoning bylaw application.

## **2.7 Service Area/Waste Accepted**

The hydrovac trucks work throughout southern Ontario where liquid soil is collected from utility, municipal and commercial sites to ensure that utility strikes and damage do not occur during intrusive work (e.g., utility and roadwork). No hydrovac is done at environmental or other sites with known soil impacts. Hydrovac truck loads that may be impacted (e.g., determined by Site information, visual inspection, and odours) are sent directly to a permitted MECP treatment or disposal facility and only return to the Site after all of the contents have been removed.

## **2.8 Security**

The Property has a single traffic entrance/exit and there is fencing on a portion of the southern Property boundaries. The Site uses a security camera system to provide continuous monitoring. The monitoring is live during operating hours and based on motion sensing after hours. Unauthorized access to the Facility is not expected to be a significant concern.

## **2.9 Storm Water Management**

Most of the Property surface cover is woodlots, vegetated areas, and grass. The open areas of the Site are gravel covered, grassed, or compacted soil. The water drainage from the soil stockpiles is collected in a vegetated drainage swale which runs east west and drains into an on-site pond.

There are no direct point source discharges of stormwater off site. The following items are noted regarding existing stormwater drainage:

- Sheet flow discharge along the vegetated drainage swale promotes settling of suspended solids, reduces erosion.
- Yard inspections and maintenance are conducted daily as needed to keep outside areas clean and minimize potential impacts to storm water.
- The accumulated sediment in the drainage swale to the pond is excavated on a weekly basis and processed with other liquid soils to minimize potential impacts to surface water quality.
- Weekly sampling of the pond water for over 5 ½ years has indicated no exceedances of applicable MECP Standards (Table 2).<sup>1</sup>

As part of the application for a zoning bylaw amendment, the Applicant has committed to provided a low permeability liner system beneath the liquid soil unloading/processing area, the temporary pond, the drainage swale and the final pond. The liner system was provided to minimize potential impacts to groundwater beneath the Site operations area. The water in the final pond will be held (and no further process water added) until testing results are received to confirm water quality meets Table 2 Standards, and then the water will be released for irrigation of the vegetation in the pit rehabilitation areas.

An application for an ECA (Industrial Sewage Works – Storm water), including a Stormwater Management Plan (SWMP), was submitted to MECP in February 2021 to govern Site stormwater management. MECP indicated that the Sewage Works ECA was not required as the SWMP provided with the D&O Report adequately addresses stormwater management [the correspondence with MECP and the SWMP (GHD, August 2022) are provided in Appendix D].

## 2.10 Air and Noise

The Site building has electric and propane heating and cooling as well as fans to provide employee comfort. Exhaust from trucks, earth moving equipment, and employee vehicles and a small trommel screen are the only air and noise emission sources. Extended vehicle idling, air brakes, and excessive engine noise are prohibited.

In 2023, an application for an ECA (Air and Noise), including an Acoustic Assessment Report and an Emission Summary and Dispersion Modelling report, was submitted to MECP to govern Site air and noise emissions. The Air and Noise assessment demonstrates that there are no significant emissions related to Site and operations are in compliance with municipal and MECP requirements.

## 2.11 Environmental Impact Study (EIS)

In 2020 and 2021, a comprehensive EIS was completed to assess natural heritage features (e.g., plant and wildlife habitats) at the Site and adjacent properties in accordance with accepted MEP and conservation agency regulations and practices. The EIS demonstrated that Site operations did not cause adverse effects to natural heritage features at the Site and recommended some measures be put in places (e.g., silt fencing in some areas) to maintain buffer areas. The EIS was submitted to the Township and some revisions were completed to address comments received from the Township's consultant.

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<sup>1</sup> Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011, and updates as issued.

## 3. Soil Operations

### 3.1 Receiving

The Applicant receives a maximum of 250 tonnes of liquid soil per day which is typically comprised of 175 tonnes of water and 75 tonnes of soil. All liquid soil is unloaded for drying in the designated stockpile area. A maximum of 3 weeks of accumulated dry soil is stored at the Site at any one time (total 1,125 tonnes).

### 3.2 Processing

Soil is processed in the following steps and a process flow diagram is shown on Figure 4:

- Trucks arrive on site and offload in the designated soil management area.
- Material can dewater for a few days to a week until the material has dried sufficiently to excavate and place in stable stockpiles. Water gravity drains from stockpiled soil and is directed to the drainage swale.
- Stockpiles of dry soil (approximately 9 m in diameter, 3 m in height) are generated for sampling.
- A maximum of 563 CM storage capacity (1,125 tonnes based on 2 tonnes/CM)
- The Site uses a system of marked stockpile locations to allow for soil and data tracking and processing.
- Based on sampling results, dried soil is transported to rehabilitation areas or appropriate off-site disposal/receiving sites.

No more than 3 weeks of accumulated soil are stockpiled at the Site at any one time 25 trucks per day, 7.5 tonnes per truck (5.25 tonnes of water and 2.25 tonnes of soil each) for a typical weekly dry soil accumulation of 375 tonnes.

The dried soil is suitable for use as pit rehabilitation material under the MNRF approved Pit Rehabilitation Plan for the on site/adjacent pit. Some small quantities of aggregate or topsoil product also are generated from some hydrovac loads and are separated using a trommel screen for recycling or beneficial reuse, largely for pit rehabilitation activities.

Soil stockpiles are limited to heights which are not a visual nuisance to surrounding property owners or structurally unstable. Stockpiled soils remain in the same stockpile until soil sampling has been completed and analytical laboratory results are received. There are three types of soil stockpiles present at any one time:

1. Un sampled stockpiles.
2. Sampled stockpiles, analytical data not yet received.
3. Sampled stockpiles, analytical data received.

### 3.3 Characterization

Stockpile soil sampling has been conducted on a weekly basis since 2017 to characterize soil quality. In May 2020, weekly sampling was continued with an expanded parameter list. Soil samples are submitted to a MECP accredited analytical laboratory for the following analyses:

- O. Reg. 153/04 Metals and Inorganics
- Volatile organic compounds (VOCs)
- Petroleum Hydrocarbons (PHCs) F1 to F4
- Semi VOCs (SVOCs)
- Polychlorinated Biphenyls (PCBs)

The analytical data is first compared to MECP Table 1<sup>2</sup> Standards. The large majority (>85%) of soil meets Table 1 Standards and as such is used for rehabilitation of the on site/adjacent pit in accordance with the approved Pit Rehabilitation Plan and 2008 Aggregate Resources Act (ARA) policy 6.00.03 (Appendix E).

The soil analytical data for 2023 is provided in Table 1. It is noted that 2008 ARA Policy 6.00.03 states in part "... where the imported material is not being placed within 1.5 metres of the surface, the criteria under Table 1 for sodium adsorption ratio and electrical conductivity do not have to be met." Low level exceedances Table 1 Standards for EC and SAR occasionally occur, and these soils are used for pit rehabilitation in accordance with this policy.

The typical soil stockpile is about 100 CM or 200 tonnes. Soil stockpiles are sampled at a frequency as provided in O. Reg. 153/04 Table 2 Minimum Stockpile Sampling Frequency as well as consideration for Excess Soil Regulations O. Reg 406. The Rules for Soil Management and Excess Soil Standards (MECP, November 2019) also provide guidance on the number of samples to be collected per the size of the stockpile and appropriate laboratory analysis for soil characterization. The soil stockpile sampling frequency is as follows:

**Table 1** Stockpile Soil Sampling (from Table 2 – Schedule E of O. Reg. 153/04)

Item	Column 1 Stockpile Volume (m <sup>3</sup> )	Column 2 Minimum Number of Samples
1.	≤ 130	3
2.	> 130 to 220	4
3.	> 220 to 320	5

### 3.4 Risk Screening

Ontario Regulation 406/19 and the accompanying document entitled "Rules for Soil Management and Excess Soil Quality Standards (MECP, December 2022) allows for development of reuse site specific excess soil quality standards through the use of the BRAT spreadsheet. BRAT can be used to modify the default values used for the development of the excess soil standards using site specific information. In addition, BRAT can be used to justify the use of the small volume standards for volumes greater than 350 m3. Development of reuse site specific excess soil quality standards must be completed by a Qualified Person (Risk Assessment) as defined in Ontario Regulation 153/04.

Use of BRAT may be considered for soil that has one or more parameter concentrations above MECP Table 1 Standards and will be reused off Site or for areas of the Site where Table 1 Standards are not applicable.

### 3.5 Soil Tracking

Site soil management generally will conservatively and voluntarily follow the O. Reg. 406/19 (Excess Soil requirements. Accurate records of the quantity of material received from "receiving sites" and the material quality based on sampling results are documented using Tracking Record forms/database (Appendix F). Records include information regarding material source, hauling quantity, soil tracking, analyses, and final disposition.

All applications and related reports, bills of lading, logs of material accepted at the site, records of material approved for acceptance at the site, etc. will be retained at the Site. Soil which has parameters detected at concentrations above Table 1 Standards (i.e., not able to be used for pit rehabilitation) are removed from the Site and disposed of at a permitted off-site treatment/disposal facility. Soil that will be shipped to an off site MECP permitted treatment/disposal facility or offsite for reuse will have applicable O. Reg. 347 documentation completed and/or comply with all requirements of O. Reg. 406/19.

<sup>2</sup> Full Depth Background Site Condition Standards for Residential/ Parkland/ Institutional/ Industrial/ Commercial/ Community Property Use for Coarse Textured Soils, as provided in the Table 1 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011 and updates as issued.

All tracking records, transport company documentation, documentation sign off from the reuse site, daily records and soil analytical data will be retained for a minimum of 7 years.

## 4. Other Operations

### 4.1 Inspection and Maintenance

The Site features and operations are routinely inspected monthly to ensure that these are maintained in good working order and secure. Any deficiencies detected during these regular inspections will be promptly corrected. A written record of the inspections will be maintained at the Site, including (as a minimum) the following (Appendix G):

- The name, title, and signature of trained personnel conducting the inspection.
- The date and time of the inspection
- A list of all equipment and Site features inspected and deficiencies observed.
- Recommendations for remedial action to be undertaken.

Daily visual observations will be conducted of the following areas to ensure the Site is secure and that there are not off-site impacts such as dust, litter, noise, vermin, vectors, odour, and traffic:

- Access road
- Loading/unloading area(s)
- Storage area(s)
- Security features

Regular inspections of the surface water management areas also are required to ensure proper operation and identify any maintenance issues as provided for in the Stormwater Management Plan, including but not limited to the following:

- Grading to allow proper drainage.
- Removal of accumulated sediment in the swale and pond
- Maintain stable swale and pond slopes, banks, and vegetation.

### 4.2 Staff Training

Drivers are trained in evaluating sites prior to hydrovacating and checking loads for unacceptable wastes during hydrovacating operations.

Operators and staff are trained with respect to the following as appropriate for their job function:

- The D&O Report and ECA requirements.
- Site operation and management.
- Shipping, BOL and manifesting procedures.
- The Site plan and location of relevant equipment, including that for emergencies and spills.
- An outline of the responsibilities of Site personnel including roles and responsibilities during emergencies and spills.
- Spill Prevention, Control, and Environmental Emergency and Contingency (E2C) Plan (See Section 4.3).
- Any environmental and occupational health and safety concerns pertaining to the waste to be processed.
- Procedures for the control of nuisance conditions.
- Emergency first aid information.

- Relevant waste management legislation and regulations, including the Environmental Protection Act (EPA), Ontario Regulation 347 and 406.
- Information recording procedures.
- Site Inspection procedures.
- Procedures for recording and responding to public complaints.

A written record will be maintained at the Site, which will include (as a minimum) the following (Appendix H):

- The date of training
- The name and signature of the person who has been trained.
- A description of the training provided.

Senior staff members supervising operations will have all the above noted training as well as any other training required by the Applicant or the Province of Ontario.

### **4.3 Environmental Emergency and Contingency Plan**

The Environmental Emergency and Contingency Plan (E2C) outlines the prevention of, preparedness for, response to, and recovery from an environmental emergency. The E2C Plan is described in Appendix I and includes the following elements:

- Emergency Contact Numbers
- Spills
- Fire
- Severe Storms
- Medical Emergencies
- Closure of Waste Disposal Sites

A copy of the E2C was provided to the local municipality and the local fire department.

### **4.4 Complaint Procedure**

The Applicant will maintain a record at the Site containing detailed complaint and follow up information listed in the template form provided in Appendix J.

The records will be retained for five years at the Site.

### **4.5 Annual Report**

By the end of February of each year, an annual report will be prepared and submitted to the District Manager covering the previous calendar year. The report will include, as a minimum, the following information:

- A detailed monthly summary of the type and quantity of all waste transfer to and from the Site.
- A detailed monthly summary of the type and quantity of all materials transported from the Site.
- Any environmental and operational problems that could negatively impact the environment, encountered during the operation of the Site and during the Facility inspections, and any mitigated actions taken.
- A statement as to compliance with ECA Conditions.
- Any recommendations to minimize environmental impacts from the operation of the Site and to improve Site operations and monitoring programs in this regard.

## 4.6 Disruption of Shipment or Facility Operation

If the Facility cannot operate, collection vehicles will be diverted to other nearby transfer stations. Similarly, if the processing facilities used as disposal sites cannot receive transfer trailers, the trailers will be diverted to other approved disposal sites.

If end markets materials recovered at the Facility (e.g., topsoil, gravel, sand), these materials will be stored onsite. Once the storage capacity is met, alternative receivers will be obtained, or alternative transfer locations will be sought, and the Facility will cease to receive materials.

At no time will the approved storage limits be exceeded, and every effort will be made to clear the offloading/stockpile area in a timely fashion.

## 4.7 Closure Plan

Should the Site no longer be used as a waste processing facility, the Site will be decommissioned prior to a change in use. The decommissioning procedure is as follows:

- All soil will be spread/backfilled on the Property or shipped to other properties for beneficial reuse or disposal as determined by the soil analytical data.
- Any waste will be removed by a MECP permitted waste hauler to a permitted disposal facility.
- All equipment will be removed from the Site.
- Exterior areas of the Site will be cleaned of any litter.

All documentation pertaining to material types and quantities will be completed and organized, as necessary.

The required Financial Assurance to support closure activities will be provided under separate cover.

**Summary of 2023 Analytical Data**  
**6678 Wellington Road 34, Township of Puslinch, Ontario**

Number of Soil Samples		Number of Soil Exceedances over Table 1 (RPIICC) <sup>(1)</sup>	
2023 Data	All Data (2017-2023)	2023 Data	All Data (2017-2023)
143	392	5	35

Number of Pond Samples		Number of Exceedances over Table 2 <sup>(2)</sup> (2023 Data)	Number of Exceedances over Table 2 <sup>(2)</sup> (All Data)
2023 Data	All Data (2017-2023)	2023 Data	All Data (2017-2023)
46	239	0	0

Media (2017-2023) Standard	Soil <sup>(1)</sup> Table 1 (RPIICC)	Pond Water <sup>(2)</sup> Table 2
Number of Samples	392	239
Number of Exceedances	35	0

**Notes:**

(1) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011. **Table 1:** Full Depth Background Site Condition Standards for Residential/ Parkland/ Institutional/ Industrial/ Commercial/ Community Property Use for Coarse Textured Soils

(2) Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all property uses **Table 2** of the Soil, Groundwater and Sediment Standards for Use Under Par XV.1 of the Environmental Protection Act, April 15, 2011

(3) Conductivity and SAR not considered exceedances

(4) Most of the acetone concentrations detected in soil samples from Sept. 21 to Nov. 3, 2023 were greater than Table 1 Standards, however data were rejected. Not considered exceedances due to the known on-site contamination (cleaning materials) during sampling - Qualified as R: Rejected

(5) June 15, 2023 methylene chloride concentrations in 2 soil samples with concentrations greater than Table 1 Standard - Not considered exceedances due to confirmed laboratory contamination. Qualified as R: Rejected

(6) All material over Table 1 (RPIICC) removed from Property











Summary of 2023 Soil Analytical Data  
6678 Wellington Road 34, Township of Puslinch, Ontario

No. Of Samples:	143	Sample ID:	S-11210029-042023-EN-387	S-11210029-042023-EN-388	S-11210029-042723-EN-390	S-11210029-042723-EN-391	S-11210029-042723-EN-392	S-11210029-23-EN-394	S-11210029-23-EN-395	S-11210029-23-EN-396	S-11210029-110523-EN-398	S-11210029-110523-EN-399	S-11210029-110523-EN-400	S-11210029-051823-EN-402	S-11210029-051823-EN-403	S-11210029-051823-EN-404	S-11210029-23-EN-406	S-11210029-23-EN-407	S-11210029-23-EN-408	S-11210029-23-EN-394 RETEST	
No. of Exceedances:	5	Report No.:	WT2310238-002	WT2310238-003	WT2311126-001	WT2311126-002	WT2311126-003	WT2311958-001	WT2311958-002	WT2311958-003	WT2312790-001	WT2312790-002	WT2312790-003	WT2313789-001	WT2313789-002	WT2313789-003	WT2314597-001	WT2314597-002	WT2314597-003	WT2315469-001	
Sample Date:		Sample Date:	20-Apr-23	20-Apr-23	27-Apr-2023	27-Apr-2023	27-Apr-2023	04-May-2023	04-May-2023	04-May-2023	11-May-2023	11-May-2023	11-May-2023	18-May-23	18-May-23	18-May-23	25-May-23	25-May-23	25-May-23	01-Jun-2023	
<b>RPIICC</b>			<b>see retest on June 8</b>																		
<b>Note: Conductivity and SAR not included as exceedances in count</b>			<b>Table 1 Standards <sup>1</sup></b>																		
		<b>Units</b>																			
MTBE	0.05	µg/g	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Styrene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	0.2	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	0.05	µg/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	0.25	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl Chloride	0.02	µg/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroethane	--	µg/g																			
Chloromethane	--	µg/g																			
<b>Petroleum Hydrocarbons</b>																					
PHC - F1 (C <sub>9</sub> -C <sub>10</sub> Hydrocarbons)	25	µg/g	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
PHC - F2 (>C <sub>10</sub> -C <sub>18</sub> Hydrocarbons)	10	µg/g	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
PHC - F3 (>C <sub>10</sub> -C <sub>34</sub> Hydrocarbons)	240	µg/g	<50	<50	<50	<50	<50	61	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	59
PHC - F4 (>C <sub>34</sub> -C <sub>40</sub> Hydrocarbons)	120	µg/g	<50	<50	<50	<50	<50	134	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	125
Gravimetric heavy hydrocarbons F4G-SG (GHH-Silica)	120	µg/g						580													550
<b>Semi-Volatile Organics</b>																					
Acenaphthene	0.072	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	0.093	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.16	µg/g	<0.050	<0.050	0.096	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.36	µg/g	<0.050	<0.050	0.227	0.16	0.109	0.056	0.054	0.058	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.085	<0.050	0.088	0.051	0.051
Benzo(a)pyrene	0.3	µg/g	<0.050	<0.050	0.214	0.215	0.116	0.062	0.063	0.057	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.102	0.056	0.098	0.060	0.060
Benzo(b)fluoranthene	0.47	µg/g	<0.050	<0.050	0.304	0.296	0.162	0.094	0.09	0.092	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.123	0.069	0.117	0.088	0.088
Benzo(ghi)perylene	0.68	µg/g	<0.050	<0.050	0.124	0.148	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.065	<0.050	0.06	<0.050	<0.050
Benzo(k)fluoranthene	0.48	µg/g	<0.050	<0.050	0.12	0.137	0.071	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.055	<0.050	0.054	<0.050	<0.050
Chrysene	2.8	µg/g	<0.050	<0.050	0.281	0.266	0.14	0.076	0.065	0.074	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.096	0.055	0.095	0.057	0.057
Dibenzo(a,h)anthracene	0.1	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	0.56	µg/g	<0.050	<0.050	0.537	0.528	0.26	0.115	0.124	0.136	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.152	0.104	0.194	0.129	0.129
Fluorene	0.12	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.23	µg/g	<0.050	<0.050	0.153	0.179	0.099	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.071	<0.050	0.06	0.056	0.056
1+2-Methylnaphthalenes	0.59	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Naphthalene	0.09	µg/g	<0.010	<0.010	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Phenanthrene	0.69	µg/g	<0.050	<0.050	0.358	0.263	0.145	<0.050	0.056	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.062	<0.050	0.098	0.065	0.065
Pyrene	1.0	µg/g	<0.050	<0.050	0.395	0.397	0.201	0.099	0.1	0.112	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.125	0.084	0.157	0.121	0.121
Diethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dimethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-ethylhexyl)phthalate	5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Biphenyl	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4-Chloroaniline	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
3,3'-Dichlorobenzidine	1	µg/g	<0.10																		



Summary of 2023 Soil Analytical Data  
6678 Wellington Road 34, Township of Puslinch, Ontario

No. of Samples:	143	Sample ID:	S-11210029-23-EN-410	S-11210029-23-EN-411	S-11210029-23-EN-412	S-11210029-23-EN-402 RETEST	S-11210029-23-EN-403 RETEST	S-11210029-23-EN-414	S-11210029-23-EN-415	S-11210029-23-EN-416	S-11210029-22-EN-418	S-11210029-22-EN-419	S-11210029-22-EN-420	S-11210029-23-EN-422	S-11210029-23-EN-423	S-11210029-23-EN-424	S-11210029-23-EN-426	S-11210029-23-EN-427	S-11210029-23-EN-428	S-11210029-23-EN-430	
No. of Exceedances:	5	Report No.:	WT2315469-002	WT2315469-003	WT2315469-004	WT2316402-001	WT2316402-002	WT2316402-003	WT2316402-004	WT2316402-005	WT2317519-001	WT2317519-002	WT2317519-003	WT2319594-001	WT2319594-002	WT2319594-003	WT2319595-001	WT2319595-002	WT2319595-003	WT2320392-001	
Sample Date:			01-Jun-2023	01-Jun-2023	01-Jun-2023	08-Jun-2023	08-Jun-2023	08-Jun-2023	08-Jun-2023	08-Jun-2023	15-Jun-23	15-Jun-23	15-Jun-23	22-Jun-2023	22-Jun-2023	22-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	6-Jul-23	
<b>RPIICC</b>																					
<b>Note: Conductivity and SAR not included as exceedances in count</b>																					
<b>Table 1 Standards<sup>1</sup></b>																					
		<b>Units</b>																			
MTBE	0.05	µg/g	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Styrene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethene	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	0.2	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1-Trichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	0.05	µg/g	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	0.25	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl Chloride	0.02	µg/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroethane	--	µg/g																			
Chloromethane	--	µg/g																			
<b>Petroleum Hydrocarbons</b>																					
PHC - F1 (C <sub>9</sub> -C <sub>10</sub> Hydrocarbons)	25	µg/g	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
PHC - F2 (>C <sub>10</sub> -C <sub>18</sub> Hydrocarbons)	10	µg/g	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
PHC - F3 (>C <sub>18</sub> -C <sub>34</sub> Hydrocarbons)	240	µg/g	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
PHC - F4 (>C <sub>34</sub> -C <sub>50</sub> Hydrocarbons)	120	µg/g	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric heavy hydrocarbons F4G-SG (GHH-Silica)	120	µg/g																			
<b>Semi-Volatile Organics</b>																					
Acenaphthene	0.072	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	0.093	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.16	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.36	µg/g	<0.050	<0.050	<0.050	0.068	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	0.3	µg/g	<0.050	<0.050	<0.050	0.077	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	0.47	µg/g	<0.050	<0.050	0.077	0.106	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(ghi)perylene	0.68	µg/g	<0.050	<0.050	<0.050	0.053	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	0.48	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	2.8	µg/g	<0.050	<0.050	<0.050	0.078	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenzo(a,h)anthracene	0.1	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	0.56	µg/g	<0.050	<0.050	0.097	0.17	0.102	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	0.12	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.23	µg/g	<0.050	<0.050	<0.050	0.056	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1+2-Methylnaphthalenes	0.59	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	0.59	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Naphthalene	0.09	µg/g	<0.010	<0.010	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Phenanthrene	0.69	µg/g	<0.050	<0.050	0.053	0.117	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Pyrene	1.0	µg/g	<0.050	<0.050	0.08	0.129	0.083	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Diethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dimethylphthalate	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Bis(2-ethylhexyl)phthalate	5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Biphenyl	0.05	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4-Chloroaniline	0.5	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
3,3'-Dichlorobenzidine	1	µg/g	<0.10	<0.10	<0.10	<0.10	&														





















**Summary of 2023 Pond Water Analytical Data**  
**6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-22-EN-339 WT2300943-001 12-Jan-23	W-341 WT2301583-001 19-Jan-23	343 WT2302151-001 26-Jan-23	W-11210029-____23-EN-346 WT2302756-001 02-Feb-2023	W-11210029-23-EN-348 WT2303313-001 9-Feb-23	W-11210029-23-EN-352 WT2304101-001 16-Feb-23	W-11210029-022323-EN-356 WT2304633-001 23-Feb-23	W-11210029-23-EN-360 WT2305237-001 2-Mar-23	W-11210029-23-EN-365 WT2305906-001 9-Mar-23	W-11210029-23-EN-369 WT2306666-001 16-Mar-23
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**2011 MECP  
Table 2**

		<b>Units</b>									
<b><u>Hydrocarbons (Water)</u></b>											
F1 (C6-C10)	750	µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370	<370	<370	<370	<370	<370	<370
<b><u>Semi-Volatile Organics (Water)</u></b>											
Diethylphthalate	38	µg/L	<0.30	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bis(2-ethylhexyl)phthalate (DEHP)	10	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Biphenyl	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.80	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60
2-Chlorophenol	8.9	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Pentachlorophenol	30	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Phenol	890	µg/L	<0.50	<0.50	<0.50	<0.75	<0.50	<0.50	<0.50	<0.50	<0.50
<b><u>Polychlorinated Biphenyls (Water)</u></b>											
Aroclor 1242		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total PCBs	3	µg/L	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
<b><u>Aggregate Organics (Water)</u></b>											
Biological Oxygen Demand (BOD)		µg/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000
<b><u>Physical Tests (Water)</u></b>											
pH		pH units	8.03	7.99	8.46	8.07	8.30	8.26	8.23	8.09	8.30
Total Suspended Solids		µg/L	<3000	<3000	<3000	<3000	<3000	<3000	<15000	<3000	<3000

**Summary of 2023 Pond Water Analytical Data  
6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-22-EN-339 WT2300943-001 12-Jan-23	W-341 WT2301583-001 19-Jan-23	343 WT2302151-001 26-Jan-23	W-11210029-____23-EN-346 WT2302756-001 02-Feb-2023	W-11210029-23-EN-348 WT2303313-001 9-Feb-23	W-11210029-23-EN-352 WT2304101-001 16-Feb-23	W-11210029-022323-EN-356 WT2304633-001 23-Feb-23	W-11210029-23-EN-360 WT2305237-001 2-Mar-23	W-11210029-23-EN-365 WT2305906-001 9-Mar-23	W-11210029-23-EN-369 WT2306666-001 16-Mar-23
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**2011 MECP  
Table 2**

	Units										
<b><u>Anions and Nutrients (Water)</u></b>											
Phosphorus, Total	µg/L	3.6	3.0	2.7	3.5	2.7	4.2	3.3	5.3	<2.0	4.4
<b><u>Organic / Inorganic Carbon (Water)</u></b>											
Total Organic Carbon	µg/L	750	720	520	550	1340	800	660	930	630	<500
<b><u>Polycyclic Aromatic Hydrocarbons (Water)</u></b>											
Acenaphthene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acenaphthylene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	2.4 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)anthracene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	0.01 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(b)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(g,h,i)perylene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenzo(ah)anthracene	0.2 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	0.41 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene	120 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-cd)pyrene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1+2-Methylnaphthalenes	3.2 µg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Naphthalene	11 µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1 µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

**Notes**

MECP Ministry of the Environment, Conservation and Parks  
Full Depth Generic Site Condition Standards in a  
Potable Ground Water Condition for all property uses  
1 Table 2 of the Soil, Groundwater and Sediment  
Standards for Use Under Par XV.1 of the  
Environmental Protection Act, April 15, 2011  
µg/L micrograms per litre





**Summary of 2023 Pond Water Analytical Data**  
**6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-23-EN-373 WT2307394-001 23-Mar-23	W-11210029-23-EN-377 WT2308099-001 30-Mar-23	W-11210029-23-EN-381 WT2308658-001 06-Apr-2023	W-11210029-23-EN-385 WT2309469-001 13-Apr-23	W-11210029-042023-EN-389 WT2310240-001 20-Apr-23	W-11210029-042723-EN-393 WT2311122-001 27-Apr-23	W-11210029-050423-EN-397 WT2311957-001 4-May-23	W-11210029-110523-EN-401 WT2312792-001 11-May-23	W-11210029-051823-EN-405 WT2313798-001 18-May-23	W-11210029-23-EN-409 WT2314561-001 25-May-23
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**2011 MECP  
Table 2**

		Units										
<b>Hydrocarbons (Water)</b>												
F1 (C6-C10)	750	µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370	<370	<370	<370	<370	<370	<370	<370
<b>Semi-Volatile Organics (Water)</b>												
Diethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethylphthalate	38	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bis(2-ethylhexyl)phthalate (DEHP)	10	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.2	<2.0	<2.0	<2.0
Biphenyl	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60
2-Chlorophenol	8.9	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Pentachlorophenol	30	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Phenol	890	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
<b>Polychlorinated Biphenyls (Water)</b>												
Aroclor 1242		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total PCBs	3	µg/L	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
<b>Aggregate Organics (Water)</b>												
Biological Oxygen Demand (BOD)		µg/L	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000
<b>Physical Tests (Water)</b>												
pH		pH units	8.01	7.83	8.18	8.34	8.37	8.07	8.18	8.33	8.21	7.91
Total Suspended Solids		µg/L	<3000	<3000	<3000	<3000	<3000	3800	<3000	<3000	<3000	<3000

**Summary of 2023 Pond Water Analytical Data**  
**6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-23-EN-373 WT2307394-001 23-Mar-23	W-11210029-23-EN-377 WT2308099-001 30-Mar-23	W-11210029-23-EN-381 WT2308658-001 06-Apr-2023	W-11210029-23-EN-385 WT2309469-001 13-Apr-23	W-11210029-042023-EN-389 WT2310240-001 20-Apr-23	W-11210029-042723-EN-393 WT2311122-001 27-Apr-23	W-11210029-050423-EN-397 WT2311957-001 4-May-23	W-11210029-110523-EN-401 WT2312792-001 11-May-23	W-11210029-051823-EN-405 WT2313798-001 18-May-23	W-11210029-23-EN-409 WT2314561-001 25-May-23
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**2011 MECP  
Table 2**

	Units										
<b><u>Anions and Nutrients (Water)</u></b>											
Phosphorus, Total	µg/L	3.8	2.4	4.3	5.2	<2.0	16.0	5.2	3.5	2.9	2.2
<b><u>Organic / Inorganic Carbon (Water)</u></b>											
Total Organic Carbon	µg/L	700	<500	720	790	710	540	1000	720	860	830
<b><u>Polycyclic Aromatic Hydrocarbons (Water)</u></b>											
Acenaphthene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acenaphthylene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	2.4 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)anthracene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	0.01 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(b)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(g,h,i)perylene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenzo(ah)anthracene	0.2 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	0.41 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene	120 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-cd)pyrene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1+2-Methylnaphthalenes	3.2 µg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Naphthalene	11 µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1 µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

**Notes**

MECP Ministry of the Environment, Conservation and Parks  
 Full Depth Generic Site Condition Standards in a  
 Potable Ground Water Condition for all property uses  
<sup>1</sup> Table 2 of the Soil, Groundwater and Sediment  
 Standards for Use Under Par XV.1 of the  
 Environmental Protection Act, April 15, 2011  
 µg/L micrograms per litre







**Summary of 2023 Pond Water Analytical Data  
6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: W-11210029-060123-EN-413	W-11210029-23-EN-417	W-11210029-061523-EN-421	W-11210029-300623-EN-425	W-11210029-23-EN-429	W-11210029-23-EN-433	W-11210029-23-EN-437	W-11210029-23-EN-441	W-11210029-072723-EN-445	W-11210029-080323-EN-449
	Report No. WT2315460-001	WT2316386-001	WT2317478-001	WT2319569-001	WT2319571-001	WT2320316-001	WT2321374-001	WT2322406-001	WT2324238-001	WT2324236-001
	Sample Date: 01-Jun-2023	8-Jun-23	15-Jun-23	22-Jun-23	29-Jun-2023	6-Jul-23	13-Jul-23	20-Jul-23	27-Jul-23	3-Aug-23

**2011 MECP  
Table 2**

	Units										
<b>Anions and Nutrients (Water)</b>											
Phosphorus, Total	µg/L	<2.0	<2.0	8	<2.0	2.5	<2.0	4.5	2.8	7.9	68.9
<b>Organic / Inorganic Carbon (Water)</b>											
Total Organic Carbon	µg/L	860	820	1570	600	14000	1060	750	1010	1170	1410
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>											
Acenaphthene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acenaphthylene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	2.4 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)anthracene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	0.01 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(b)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(g,h,i)perylene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenzo(ah)anthracene	0.2 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	0.41 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene	120 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-cd)pyrene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1+2-Methylnaphthalenes	3.2 µg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Naphthalene	11 µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1 µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

**Notes**  
 MECP Ministry of the Environment, Conservation and Parks  
 Full Depth Generic Site Condition Standards in a  
 Potable Ground Water Condition for all property uses  
<sup>1</sup> Table 2 of the Soil, Groundwater and Sediment  
 Standards for Use Under Par XV.1 of the  
 Environmental Protection Act, April 15, 2011  
 µg/L micrograms per litre

**Summary of 2023 Pond Water Analytical Data**  
**6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-23-EN-453 WT2324948-001 10-Aug-23	W-11210029-23-EN-457 WT2325932-001 17-Aug-23	W-11210029-23-EN-464 WT2327988-001 31-Aug-23	W-11210029-23-EN-468 WT2328728-001 08-Sep-2023	W-11210029-23-EN-475 WT2330618-001 21-Sep-23	W-11210029-21-EN-479 WT2331474-001 28-Sep-23	W-11210029-23-EN-483 WT2332428-001 05-Oct-2023	W-11210029-23-EN-490 WT2334178-001 20-Oct-23	W-11210029-23-493 WT2335054-001 27-Oct-2023	W-11210029-23-EN-497 WT2335983-001 03-Nov-2023
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**2011 MECP  
Table 2**

		Units										
<b>Metals</b>												
Aluminum	--	µg/L	<3.0	<3.0	<3.0	<3.0	4.1	<3.0	<3.0	<3.0	<3.0	<3.0
Antimony	6	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	25	µg/L	2.00	1.98	2.51	2.19	2.14	1.49	4.25	1.98	2.02	1.79
Barium	1000	µg/L	58.7	60.4	53.6	56.2	52.1	56.7	55.4	54.1	55.2	53.7
Beryllium (4)	4	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bismuth	--	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron (total)	5000	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Cadmium (5)	2.7	µg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Calcium	--	µg/L	73100	76600	74100	78400	72600	74700	75800	70900	73200	75800
Cesium	--	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	50	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium, Hexavalent	25	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	3.8	µg/L	0.1	0.14	0.11	0.21	0.11	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	87	µg/L	<0.5	3.98	0.77	0.7	0.89	0.53	3.92	<0.5	1.95	0.69
Iron	--	µg/L	206	147	298	235	236	102	752	317	290	282
Lead (6)	10	µg/L	0.068	0.094	<0.05	0.051	0.082	<0.05	0.27	0.055	0.069	<0.05
Lithium	--	µg/L	3.6	4.1	3.2	3.9	3.8	3.7	3.5	3.8	3.8	3.5
Magnesium	--	µg/L	36900	38300	35700	36200	37500	40500	36700	36000	35100	36700
Manganese	--	µg/L	12.8	12.3	13.0	13	14.4	13.7	15	15.6	14.9	15.7
Mercury	0.29	µg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	70	µg/L	0.482	0.51	0.499	0.51	0.437	0.476	0.477	0.468	0.507	0.444
Nickel	100	µg/L	<0.5	1.3	1.13	0.66	0.77	<0.5	0.56	<0.5	1.5	<0.5
Phosphorus	--	µg/L	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Potassium	--	µg/L	988	1100	988	1040	995	1120	1070	993	1020	953
Rubidium	--	µg/L	<0.2	0.21	0.20	0.22	0.2	<0.2	0.21	0.20	<0.2	<0.2
Selenium	10	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silicon	--	µg/L	10100	9360	9870	8820	9360	9880	9400	8840	8720	8930
Silver	1.5	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	490000	µg/L	7320	7800	7480	7410	7440	8110	7430	7210	6930	7220
Strontium	--	µg/L	151	160	154	156	144	163	150	145	150	147
Sulfur	--	µg/L	17700	18900	16500	17900	16500	16800	16800	16200	15600	15800
Tellurium	--	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	2.0	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium	--	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	--	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium	--	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Tungsten	--	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	20.0	µg/L	0.221	0.23	0.221	0.232	0.178	0.182	0.196	0.213	0.200	0.203
Vanadium	6.2	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Zinc	1100	µg/L	4.6	12.7	6.7	6.4	7.7	9.4	11.7	9.0	8.3	8.1
Zirconium	--	µg/L	<0.2	0.23	<0.2	<0.2	0.46	<0.2	<0.2	<0.2	<0.2	<0.2





**Summary of 2023 Pond Water Analytical Data  
6678 Wellington Road 34, Township of Puslinch, Ontario**

No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-23-EN-453 WT2324948-001 10-Aug-23	W-11210029-23-EN-457 WT2325932-001 17-Aug-23	W-11210029-23-EN-464 WT2327988-001 31-Aug-23	W-11210029-23-EN-468 WT2328728-001 08-Sep-2023	W-11210029-23-EN-475 WT2330618-001 21-Sep-23	W-11210029-21-EN-479 WT2331474-001 28-Sep-23	W-11210029-23-EN-483 WT2332428-001 05-Oct-2023	W-11210029-23-EN-490 WT2334178-001 20-Oct-23	W-11210029-23-493 WT2335054-001 27-Oct-2023	W-11210029-23-EN-497 WT2335983-001 03-Nov-2023
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**2011 MECP  
Table 2**

	Units										
<b>Anions and Nutrients (Water)</b>											
Phosphorus, Total	µg/L	4.1	3.0	4.3	4.6	3.4	<2.0	9.2	2.8	<2.0	2.8
<b>Organic / Inorganic Carbon (Water)</b>											
Total Organic Carbon	µg/L	1270	1350	1270	910	1250	560	1120	1210	1600	920
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>											
Acenaphthene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acenaphthylene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	2.4 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)anthracene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	0.01 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(b)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(g,h,i)perylene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenzo(ah)anthracene	0.2 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	0.41 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene	120 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-cd)pyrene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1+2-Methylnaphthalenes	3.2 µg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Naphthalene	11 µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1 µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

**Notes**  
 MECP Ministry of the Environment, Conservation and Parks  
 Full Depth Generic Site Condition Standards in a  
 Potable Ground Water Condition for all property uses  
<sup>1</sup> Table 2 of the Soil, Groundwater and Sediment  
 Standards for Use Under Par XV.1 of the  
 Environmental Protection Act, April 15, 2011  
 µg/L micrograms per litre







**Summary of 2023 Pond Water Analytical Data**  
**6678 Wellington Road 34, Township of Puslinch, Ontario**

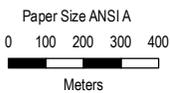
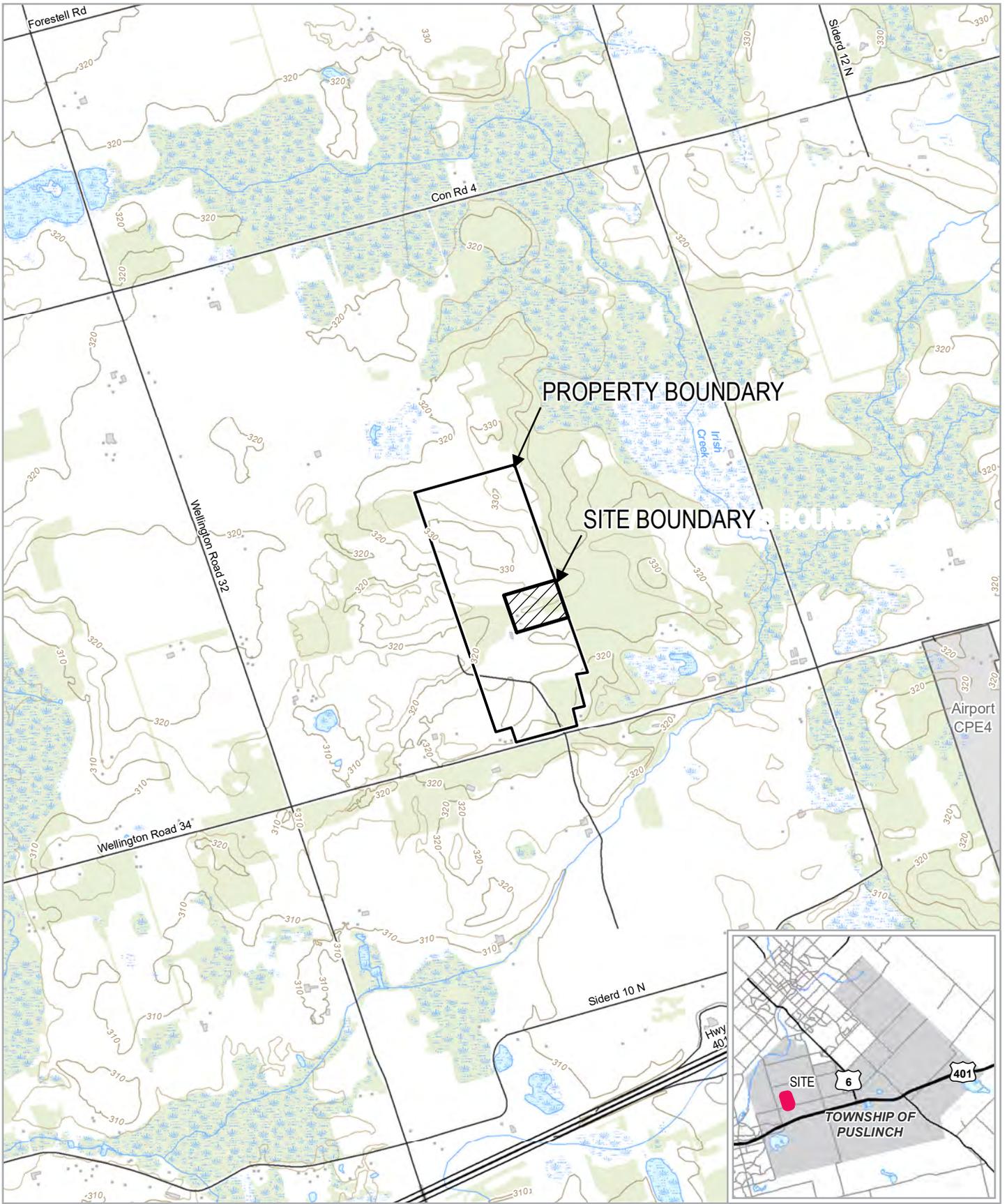
No. Of Samples: 46	Sample ID: Report No. Sample Date:	W-11210029-22-EN-501 WT2336905-001 10-Nov-23	W-11210029-23-EN-505 WT2337675-001 17-Nov-23	W-11210029-23-EN-509 WT2338577-001 24-Nov-23	W-11210029-23-EN-513 WT2339307-001 01-Dec-2023	W-11210029-23-EN-517 WT2340098-001 08-Dec-2023	W-11210029-23-EN-S21 WT2340881-001 15-Dec-2023
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**2011 MECP  
Table 2**

		<b>Units</b>					
<b><u>Anions and Nutrients (Water)</u></b>							
Phosphorus, Total	µg/L	<2.0	2.1	<2.0	2.9	2.6	5.7
<b><u>Organic / Inorganic Carbon (Water)</u></b>							
Total Organic Carbon	µg/L	1170	1500	1150	1320	1350	1470
<b><u>Polycyclic Aromatic Hydrocarbons (Water)</u></b>							
Acenaphthene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acenaphthylene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	2.4 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)anthracene	1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	0.01 µg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(b)fluoranthene	0.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
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Fluoranthene	0.41 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene	120 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-cd)pyrene	0.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1+2-Methylnaphthalenes	3.2 µg/L	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
1-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-Methylnaphthalene	3.2 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Naphthalene	11 µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1 µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1 µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

**Notes**

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 Full Depth Generic Site Condition Standards in a  
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<sup>1</sup> Table 2 of the Soil, Groundwater and Sediment  
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 Environmental Protection Act, April 15, 2011  
 µg/L micrograms per litre



Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983 CSRS  
 Grid: NAD 1983 CSRS UTM Zone 17N

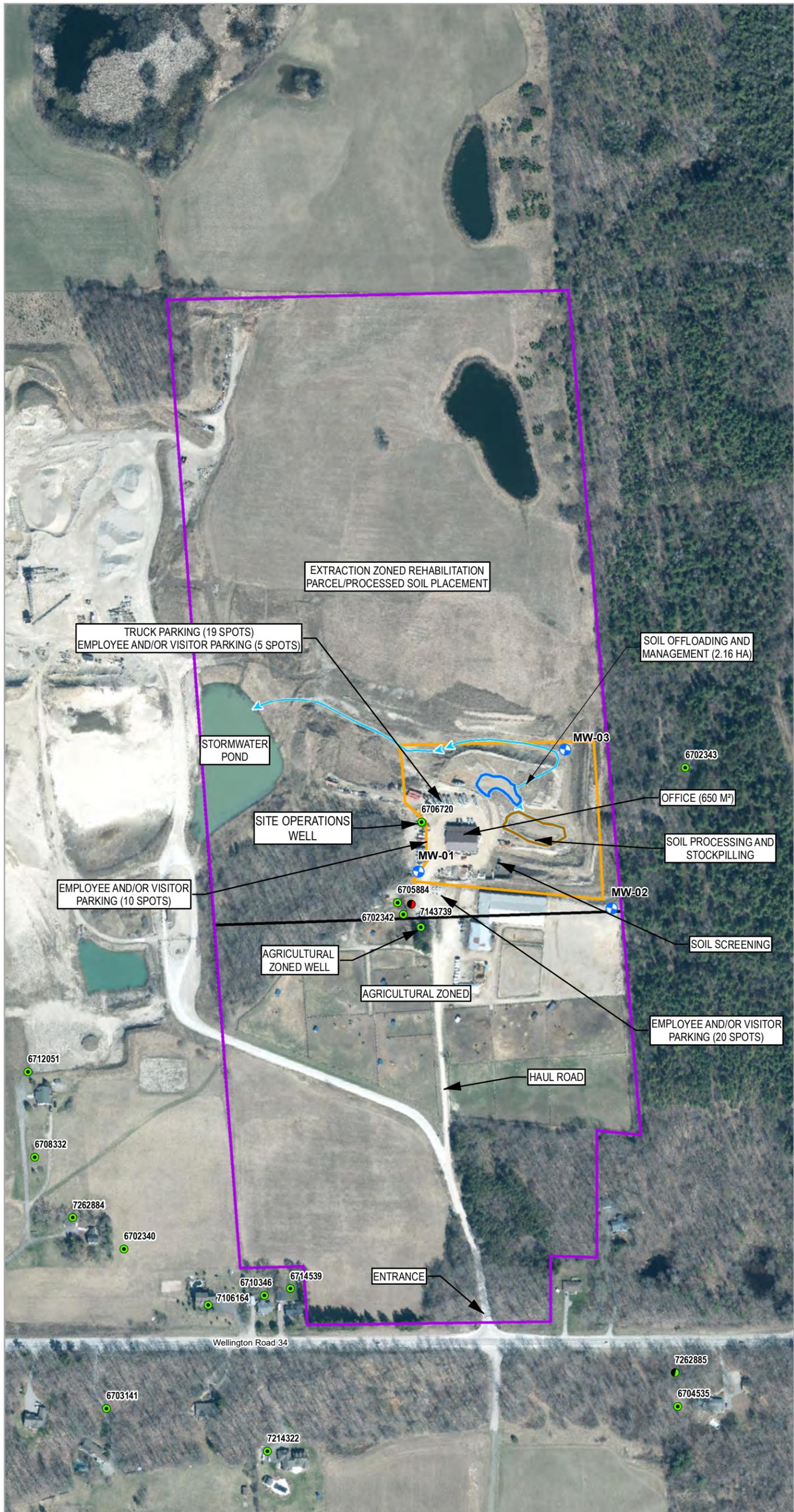
2374868 ONTARIO INC.  
 6678 WELLINGTON RD  
 TOWNSHIP OF PUSLINCH  
 ON

Project No. 11210029  
 Revision No. -  
 Date Oct 9, 2020

**SITE LOCATION MAP**

**FIGURE 1**

Data source: WWIS, 2020. Ontario Ministry of the Environment (Accessed August, 2020); Imagery Google 2020. Capture date: 7/Jul/2018



Legend	
<span style="color: green;">●</span>	Water Supply
<span style="color: red;">●</span>	Abandoned-Supply
<span style="color: green;">●</span>	Abandoned-Other
<span style="color: blue;">⊕</span>	Monitoring Well
<span style="color: blue;">↔</span>	Drainage Swale
<span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>	Temporary Pond
<span style="border: 1px solid orange; display: inline-block; width: 10px; height: 10px;"></span>	Unloading/Drainage Area
<span style="border: 1px solid orange; display: inline-block; width: 10px; height: 10px;"></span>	Site/Operations Boundary
<span style="border: 1px solid purple; display: inline-block; width: 10px; height: 10px;"></span>	Property Boundary

Paper Size ANSI B  
 0 25 50 75 100  
 Meters  
 Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983 CSRS  
 Grid: NAD 1983 CSRS UTM Zone 17N

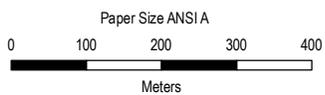
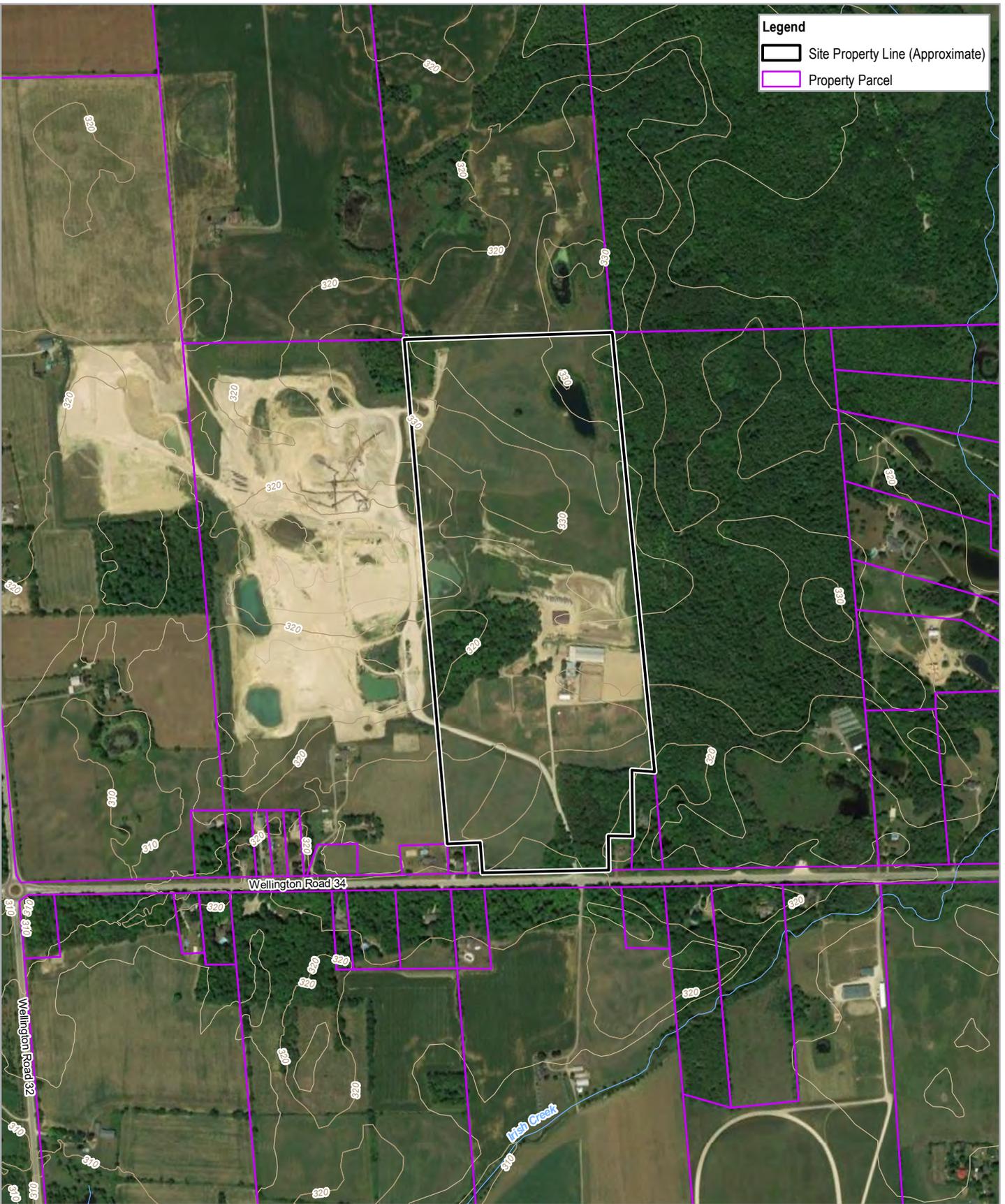


**2374868 ONTARIO INC.**  
**6678 WELLINGTON RD 34**  
**TOWNSHIP OF PUSLINCH, ON**

Project No. **11210029**  
 Revision No. -  
 Date **Apr 13, 2023**

**SITE LAYOUT**

**FIGURE 2**



Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983 CSRS  
 Grid: NAD 1983 CSRS UTM Zone 17N



2374868 ONTARIO INC. 6678  
 WELLINGTON RD 34  
 TOWNSHIP OF PUSLINCH, ON

Project No. 11210029  
 Revision No. -  
 Date Nov 6, 2020

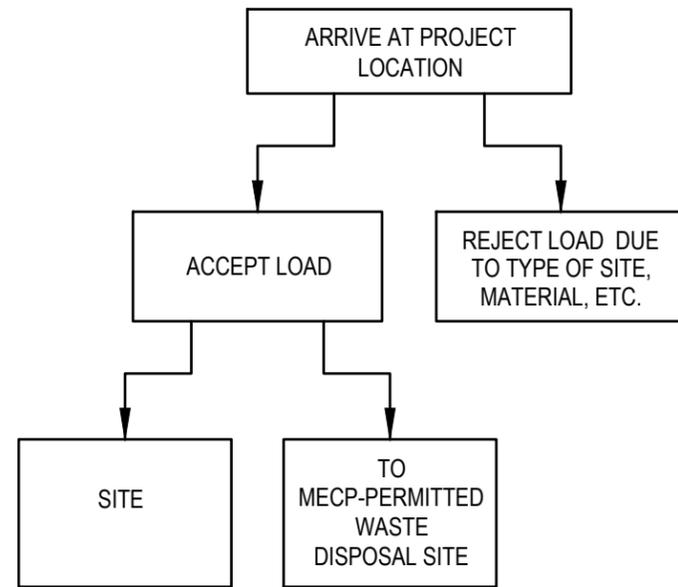
**SITE TOPOGRAPHY**

**FIGURE 3**

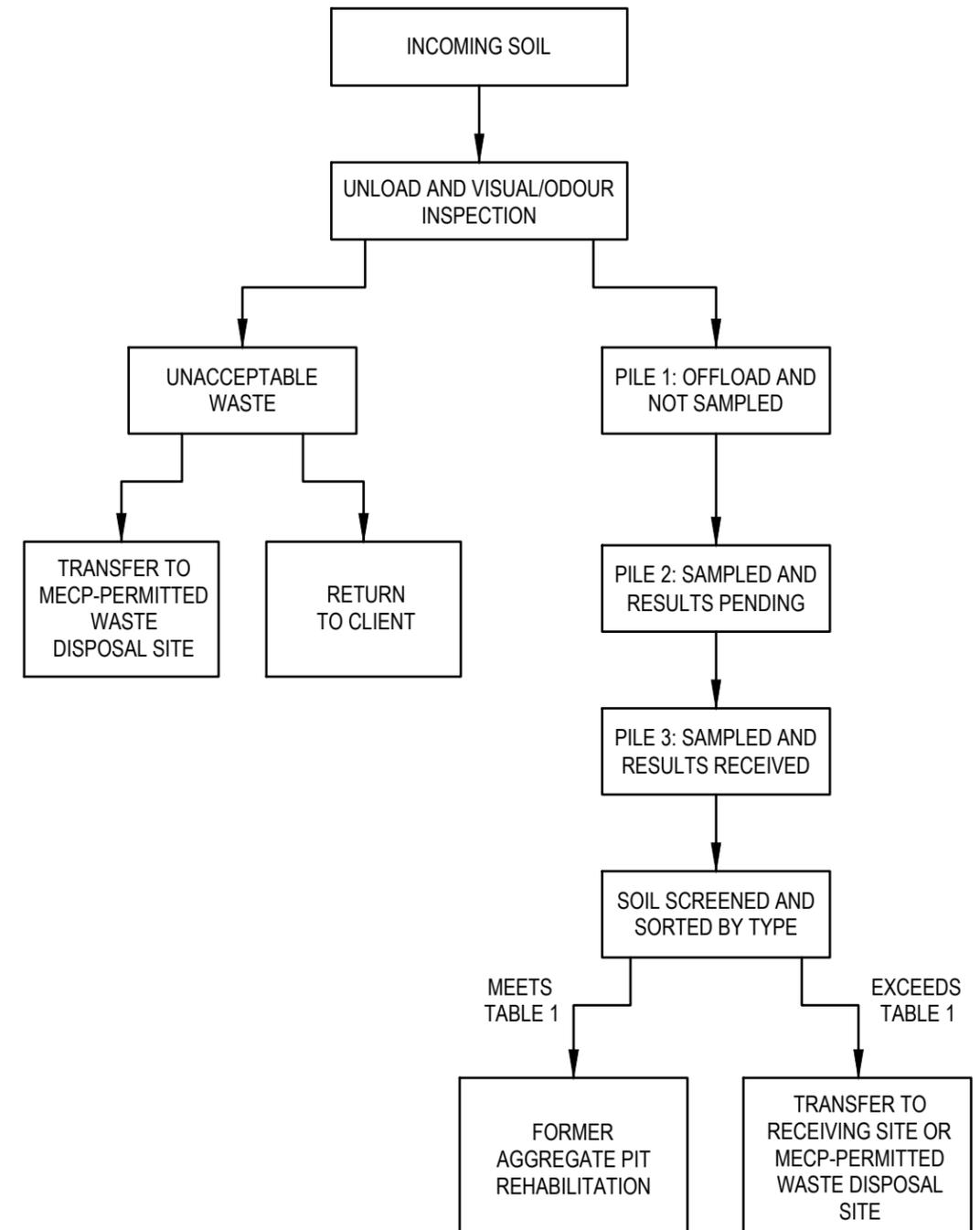
**1. AT TIME OF BOOKING**

ACCEPT OR REJECT PROJECT  
(BASED ON LOCATION,  
SITE TYPE, AND INFORMATION)

**2. AT HYDROVAC LOCATION**



**3. AT SITE**



2374868 ONTARIO INC.  
6678 WELLINGTON RD. 34,  
TOWNSHIP OF PUSLINCH, ONTARIO

Project No. 11210029  
Date December 2020

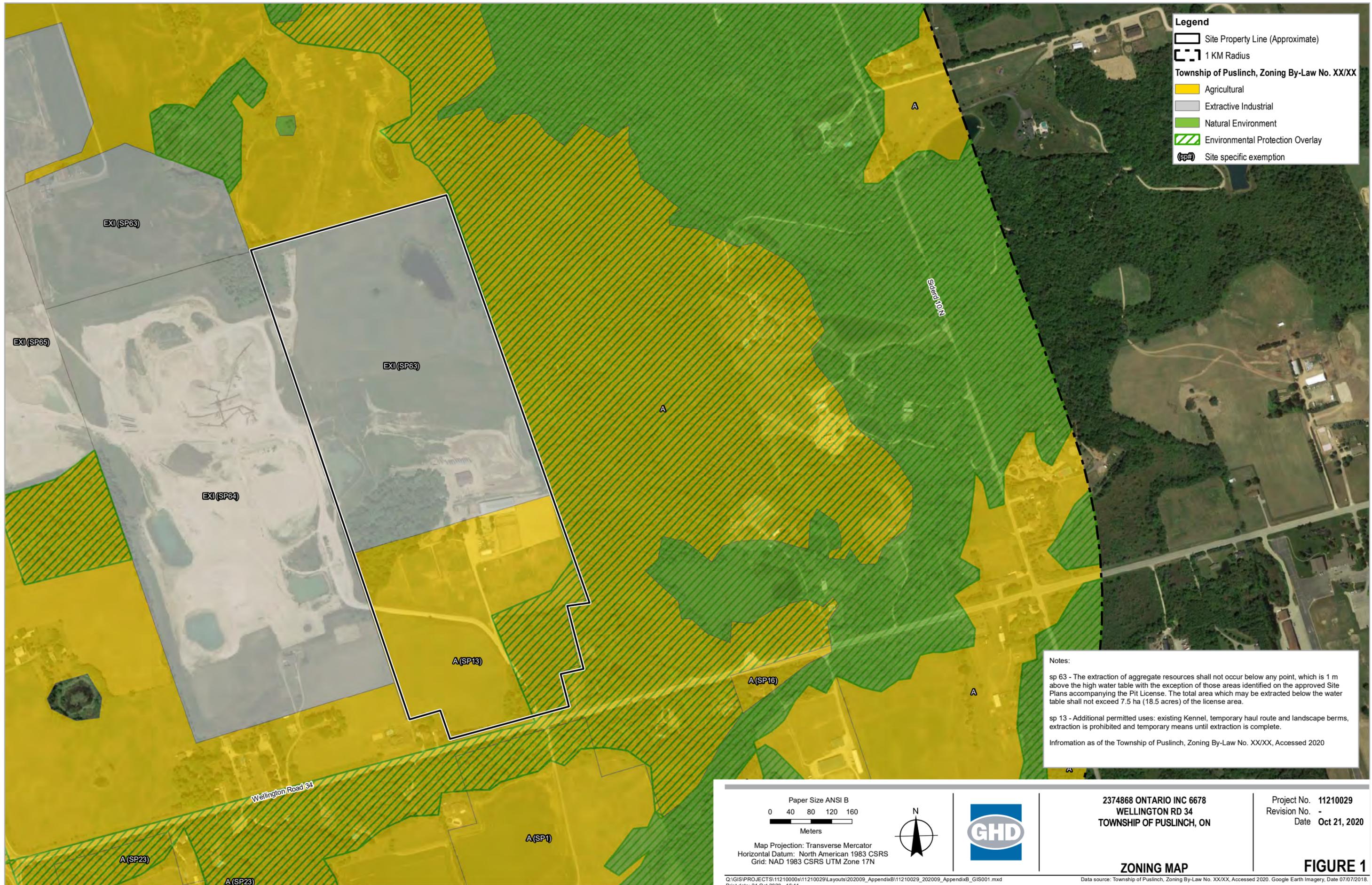
PROCESS FLOW DIAGRAM

FIGURE 4

# Appendices

# **Appendix A**

**Zoning**



**Legend**

- Site Property Line (Approximate)
- 1 KM Radius
- Township of Puslinch, Zoning By-Law No. XX/XX**
- Agricultural
- Extractive Industrial
- Natural Environment
- Environmental Protection Overlay
- Site specific exemption

**Notes:**

sp 63 - The extraction of aggregate resources shall not occur below any point, which is 1 m above the high water table with the exception of those areas identified on the approved Site Plans accompanying the Pit License. The total area which may be extracted below the water table shall not exceed 7.5 ha (18.5 acres) of the license area.

sp 13 - Additional permitted uses: existing Kennel, temporary haul route and landscape berms, extraction is prohibited and temporary means until extraction is complete.

Information as of the Township of Puslinch, Zoning By-Law No. XX/XX, Accessed 2020

<p>Paper Size ANSI B</p> <p>0 40 80 120 160</p> <p>Meters</p> <p>Map Projection: Transverse Mercator Horizontal Datum: North American 1983 CSRS Grid: NAD 1983 CSRS UTM Zone 17N</p>		<p>2374868 ONTARIO INC 6678 WELLINGTON RD 34 TOWNSHIP OF PUSLINCH, ON</p>	<p>Project No. 11210029 Revision No. - Date Oct 21, 2020</p>
<p><b>ZONING MAP</b></p>		<p><b>FIGURE 1</b></p>	

Q:\GIS\PROJECTS\11210000s\11210029\Layouts\202009\_AppendixB\11210029\_202009\_AppendixB\_GIS001.mxd  
Print date: 21 Oct 2020 - 16:11

Data source: Township of Puslinch, Zoning By-Law No. XX/XX, Accessed 2020. Google Earth Imagery, Date 07/07/2018.

---

**From:** Neill, Andrew (MECP) <[Andrew.Neill@ontario.ca](mailto:Andrew.Neill@ontario.ca)>  
**Sent:** Thursday, March 21, 2024 2:24 PM  
**To:** Fred Taylor <[Fred.Taylor@ghd.com](mailto:Fred.Taylor@ghd.com)>  
**Cc:** Armour, Lynnette (MECP) <[Lynnette.Armour@ontario.ca](mailto:Lynnette.Armour@ontario.ca)>  
**Subject:** Badger Puslinch

Hi Fred,

Further to our discussion this afternoon, the Ministry is willing to review the application by Badger to establish a liquid soil processing site in Puslinch despite the zoning issues. Please submit the application as soon as possible, and include a copy of this email in the application package so it does not get screened out due to zoning.

Thanks.

Andrew Neill, P.Eng.  
Senior Review Engineer  
Ministry of the Environment, Conservation and Parks  
Environmental Permissions Branch  
135 St. Clair Ave. W., 1<sup>st</sup> Floor  
Toronto, ON M4V 1P5  
Phone: (437) 999-8817  
E-Mail: [andrew.neill@ontario.ca](mailto:andrew.neill@ontario.ca)

*If you have any accommodation needs or require communication supports or alternate formats, please let me know.*

*Si vous avez des besoins en matière d'adaptation, ou si vous nécessitez des aides à la communication ou des médias substitués, veuillez me le faire savoir.*

# **Appendix B**

**Legal Survey**

**SURVEYOR'S REAL PROPERTY REPORT  
PLAN OF SURVEY OF  
PART OF SOUTH HALF LOT 8  
CONCESSION 3  
TOWNSHIP OF PUSLINCH  
COUNTY OF WELLINGTON**

SCALE 1 : 1500  
VAN HARTEN SURVEYING INC.

**REPORT:**

**CLIENT:**  
THIS PLAN WAS PREPARED FOR GHD LIMITED AND THE UNDERSIGNED ACCEPTS NO RESPONSIBILITY FOR USE BY OTHER PARTIES.

**DESCRIPTION OF PROPERTY:**  
PIN 71210-0046 (LT)  
PART OF SOUTH HALF LOT 8, CONCESSION 3  
TOWNSHIP OF PUSLINCH  
ADDRESS: 6678 WELLINGTON ROAD 34

**NOTE:**  
1) BOUNDARIES OF THE SUBJECT PARCEL WERE RE-ESTABLISHED FROM PREVIOUS SURVEY MONUMENTS, PLANS, AND DEED DESCRIPTIONS.  
2) NOTE THE POSITIONS OF FENCES, BUILDINGS, AND OTHER FEATURES AS THEY RELATE TO THE BOUNDARIES AS SHOWN ON THE PLAN.

**EASEMENTS:**  
NONE FOUND IN REGISTRY OFFICE

**LEGEND:**

—□—	DENOTES SURVEY MONUMENT SET	—●—	DENOTES SURVEY MONUMENT FOUND
SIB	DENOTES .025 X .025 X 1.20 STANDARD IRON BAR	IB	DENOTES .015 X .015 X 0.60 IRON BAR
PWF	DENOTES POST AND WIRED FENCE	VH	DENOTES VAN HARTEN SURVEYING INC., O.L.S.'S
OU	DENOTES ORIGIN UNKNOWN	375	DENOTES BLACK, SHOEMAKER, ROBINSON & DONALDSON, O.L.S.'S
1114	DENOTES METZ & LORENTZ LTD., O.L.S.'S	1426	DENOTES MCDONALD TAMBLYN LORD SURVEYING LTD., O.L.S.'S
P1	DENOTES REGISTERED PLAN 61R-3278	P2	DENOTES REGISTERED PLAN 61R-10073
P3	DENOTES REGISTERED PLAN 61R-3437	P4	DENOTES REGISTERED PLAN 61R-6506 BY (1426)
P5	DENOTES REGISTERED PLAN 61R-10061 BY (VH)	P6	DENOTES SURVEY BY (375), FILE NO. 97-0709, DATED MARCH 3, 1997
D1	DENOTES LAND EXPROPRIATION PLAN No. MS-42560 BY (375)	D2	DENOTES INST. No. 710775
D3	DENOTES INST. No. M-3326	D4	DENOTES INST. No. 781537

FENCE POST	●	HYDRO POLE	HP
FENCE LINE	—x—x—x—	OVERHEAD HYDRO	—o—o—o—o—
ASPHALT	■	GRAVEL	■

**BEARING & DISTANCE NOTES:**

- BEARINGS ARE GRID BEARINGS AND ARE DERIVED FROM GPS OBSERVATIONS AND ARE REFERRED TO THE UTM PROJECTION, ZONE 17, NAD 83-CSRS (2010) ADJUSTMENT.
- DISTANCES SHOWN ON THE PLAN ARE ADJUSTED GROUND DISTANCES AND CAN BE CONVERTED TO UTM GRID DISTANCES BY MULTIPLYING BY AN AVERAGED COMBINED SCALE FACTOR OF 0.999602.

**BEARING COMPARISONS:**

FOR THE PURPOSES OF BEARING COMPARISONS, PREVIOUS SURVEYS HAVE BEEN ROTATED TO UTM BEARINGS BY THE ANGLES SHOWN BELOW.

PLAN	ROTATION FOR NORTHEAST BEARINGS
P1, P2, P6, D1, D2, D3, D4	-0°29'55"
P3	-0°32'00"
P4, P5	-0°30'05"

**NOTES:**

- DISTANCES ON THIS PLAN ARE MEASURED IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.
- DISTANCES RELATING TO FENCES ARE TO THE CENTRELINE OF FENCE.
- FENCES WITHIN 0.1 METRE OF THE BOUNDARY ARE INDICATED AS BEING ON LINE.

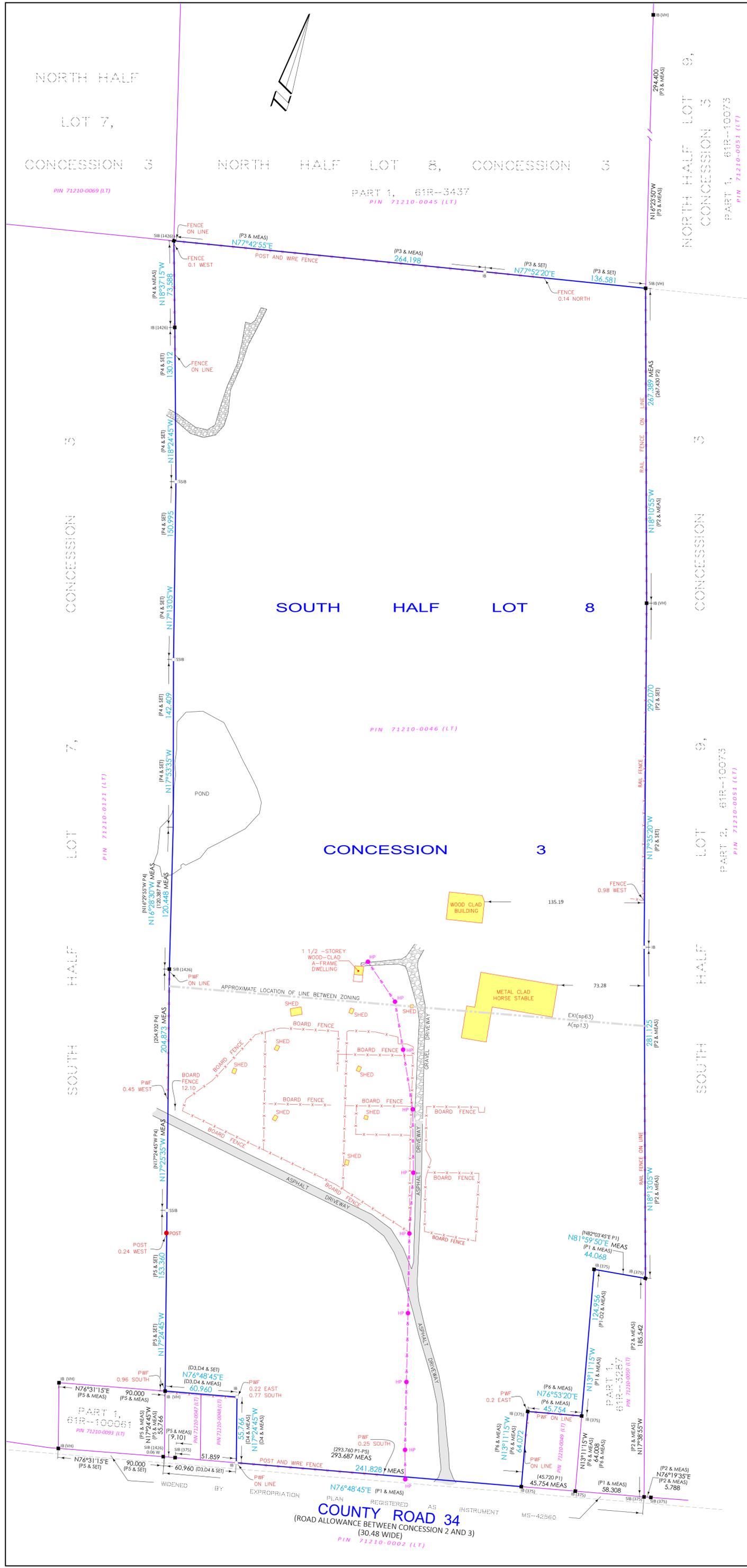
**SURVEYOR'S CERTIFICATE**

- I CERTIFY THAT:
- THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
  - THIS SURVEY WAS COMPLETED ON THE 30th DAY OF OCTOBER, 2020.

DATE: NOVEMBER 16, 2020

**RONALD MAK**  
ONTARIO LAND SURVEYOR

<p>ASSOCIATION OF ONTARIO LAND SURVEYORS PLAN SUBMISSION FORM 2141323</p>	<p><b>Van Harten SURVEYING INC.</b> LAND SURVEYORS and ENGINEERS</p>		
	<p>Kitchener/Waterloo Ph: 519-742-8371</p>	<p>Guelph Ph: 519-821-2763</p>	<p>Orangeville Ph: 519-940-4110</p>
<p>www.vanharten.com info@vanharten.com</p>			
<p>THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR in accordance with Regulation 1026, Section 29(3).</p>	<p>DRAWN BY: PJ Nov 19, 2020 11:33:38 AM M:\Geographic\KW\PUSLINCH\CON 3\CAD\SRPR LT9 (GHD) 28936-20 UTM 2010 (REV 2).dwg</p>	<p>CHECKED BY: MS PROJECT No. 28936-20</p>	<p>NO PERSON MAY COPY, REPRODUCE, DISTRIBUTE OR ALTER THIS PLAN IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF VAN HARTEN SURVEYING INC.</p>



**COUNTY ROAD 34**  
(ROAD ALLOWANCE BETWEEN CONCESSION 2 AND 3)  
(30.48 WIDE)  
PIN 71210-0002 (LT)

# **Appendix C**

## **Traffic Study**

Our ref: 11210029

December 13, 2021

Mr. Fred Taylor, P.Eng, LEP, LSP, LRS, QP  
GHD Limited  
455 Phillip Street  
Waterloo, Ontario N2L 3X2

Subject: **Traffic Operations Assessment for 6678 Wellington County Road 34**

Dear Mr. Taylor:

GHD is pleased to provide this Traffic Operations Assessment for the existing access at 6678 Wellington County Road 34.

This assessment is based on the currently available traffic data of Wellington County Road 34 in the vicinity of the existing access at #6678. Figure 1 shows the location of the access. It is our understanding that the access is shared by two businesses: Badger and Capital Paving. Badger operates a vac-truck business with a fleet of approximately 25 trucks. It is estimated that most of the trucks are on the road and leave the site in morning, say 20 trucks, with half returning in the early afternoon and the remaining half in the later afternoon corresponding to the time between 3 and 6pm. Capital Paving operates an aggregate extraction business with trucks arriving to be loaded with sand /gravel and leaving full at a steady pace. It is also our understanding that the operation is seasonal. Therefore, our estimate of the truck traffic associated with the two businesses likely over-estimates the actual truck traffic at the access.



Figure 1: Access Location

# 1. County Road Traffic

Wellington County provided us the details which are provided in Appendix A of the most recent traffic data at Wellington Road 34 0.1km east of Wellington Road 32 which is approximately 900 m west of the subject access at #6678 Wellington Road 34. The traffic during the AM and PM peak hours is summarized in Figure 2.

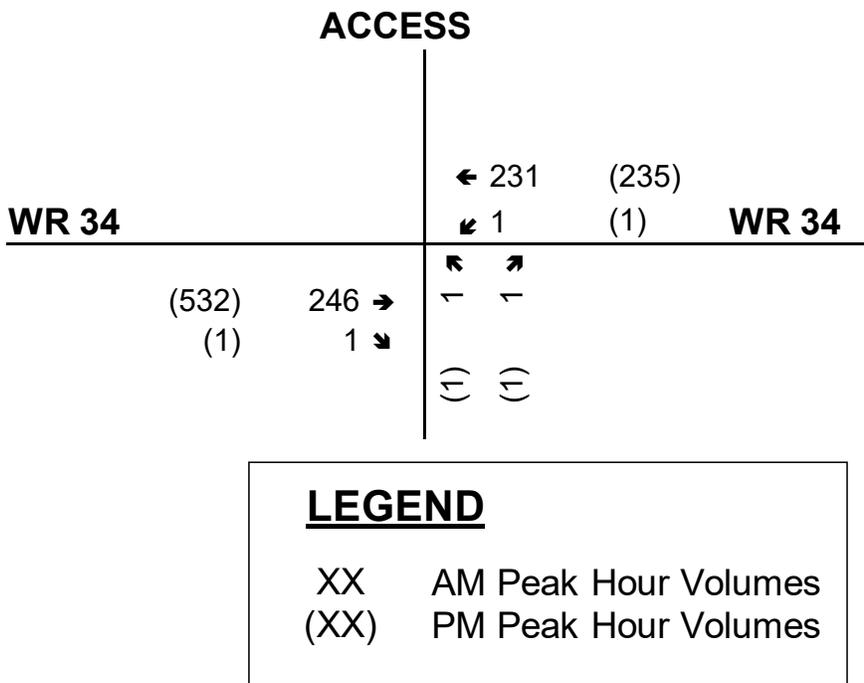


Figure 2: Wellington Road 34 Traffic

# 2. Access Traffic

The Badger traffic is estimated as 20 trucks leaving the access during the AM peak hour and approximately half the fleet returning full during the early afternoon (12-3PM) and the remaining returning in the late afternoon (3-6PM). It is estimated approximately 7 trucks return during the PM peak hour. Figure 3 illustrates the estimated Badger traffic.

Capital Paving traffic is estimated on the basis of the logistics of loading aggregate into trucks at a relatively steady rate of 5 trucks per hour. Therefore, during the AM peak hour, it is estimated that 5 trucks will enter and 5 trucks will exit the access. However, in the evening operations wind down; it is estimated that during the PM peak hour (5-6PM) only trucks leaving the site will be active to deliver one last load of the day. Figure 4 shows the estimated traffic related to Capital Paving.

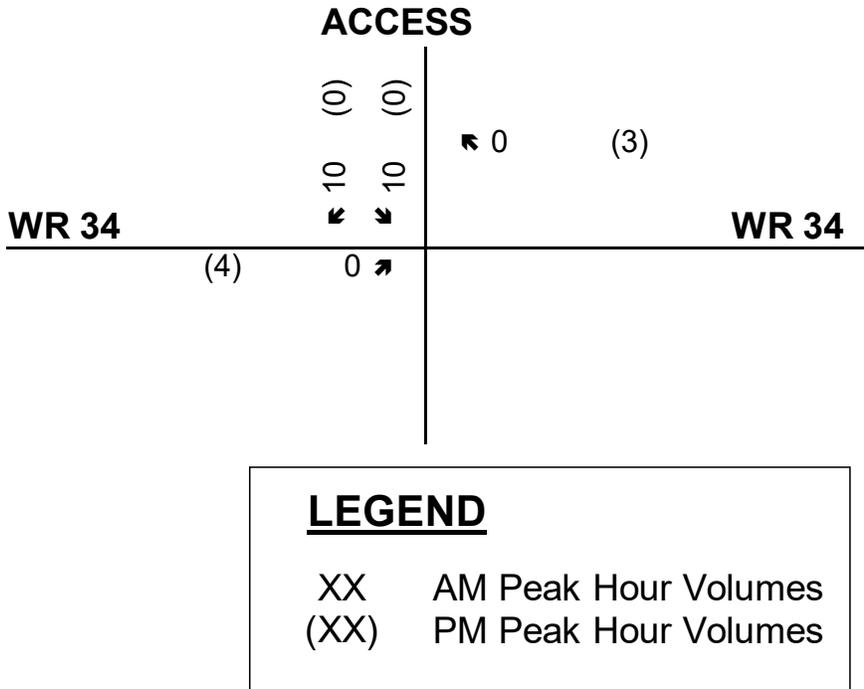


Figure 3: Badger Traffic

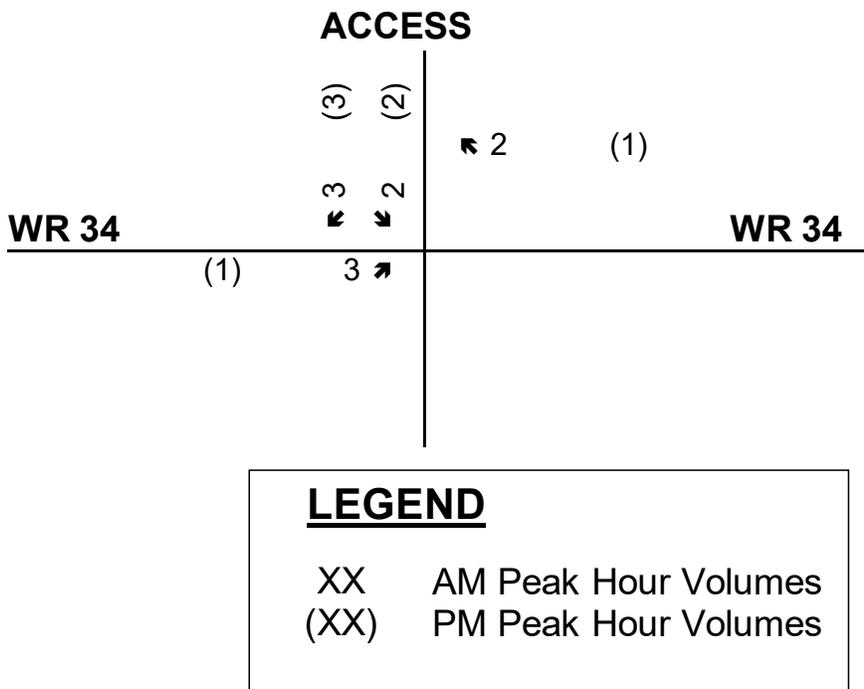


Figure 4: Capital Paving Traffic

### 3. Total Traffic

Combining the traffic on County Road 34 and the traffic turning at the access to #6678, the total traffic is derived. Figure 5 shows the total traffic at the access.

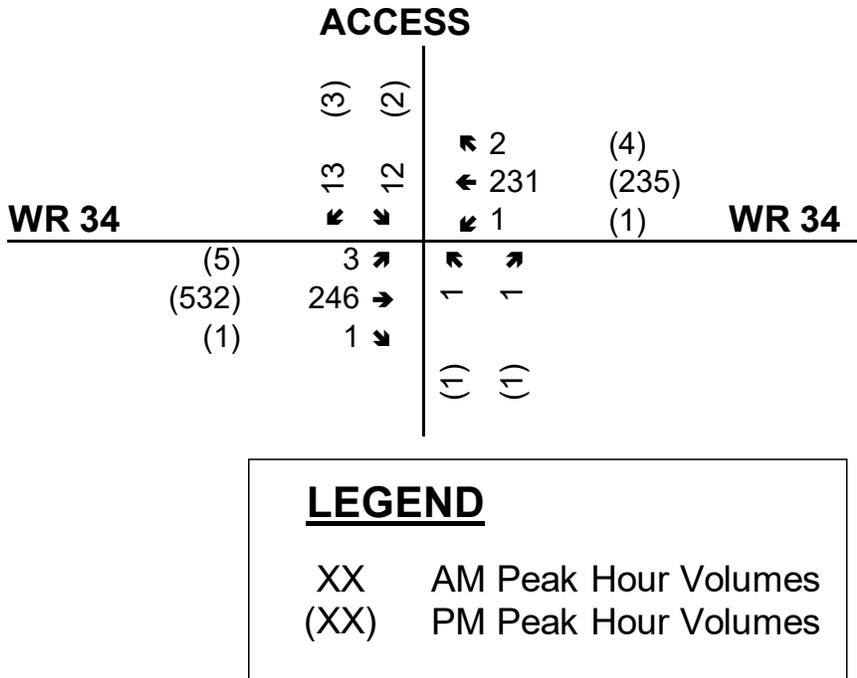


Figure 5: Total Traffic

### 4. Traffic Assessment

Assessment of the traffic at the access used SYNCHRO software. Results indicate good levels of service ‘C’, or better with individual v/c movements of 0.05, or less indicating substantial reserve capacity. Table 1 provides the summary of the results and Appendix B contains the detailed analysis reports.

Table 1:

Intersection	Control Type	AM Peak Hour			PM Peak Hour		
		Overall v/c (LOS) Delay in Seconds	Critical/ Key Movements v/c(LOS) Delay in Seconds	95th %ile Queues (m)	Overall v/c (LOS) Delay in Seconds	Critical/ Key Movements v/c(LOS) Delay in Seconds	95th %ile Queues (m)
WR 34 & Access	Unsignalized	SBTLR 0.05 (B) 12	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0 (B) 12 SBTLR = 0.05 (B) 12	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m	NBTLR 0.01 (C) 15	EBTLR = 0 (A) 0 WBTLR = 0 (A) 0 NBTLR = 0.01 (C) 15 SBTLR = 0.01 (B) 13	EBTLR = 5 m WBTLR = 0 m NBTLR = 5 m SBTLR = 5 m

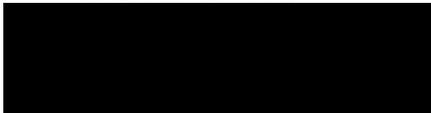
The access is currently in operation and has been for several years with no known reports of collisions. With the traffic on WR34 and the expected traffic turning left (eastbound left) into the access being 1% of the traffic travelling eastbound, a left turn lane is not required.

The access has tapered pavement for the entering vehicles (westbound right) and the exiting vehicles turning right (southbound right).

If you wish to discuss any aspect of the report, please feel free to contact Mr. Roland Roovers. We trust that the above noted information is suitable for your purposes.

Sincerely,

GHD



**Roland Roovers, P.Eng.**  
Senior Transportation Manager

**+1 905 752-4348**  
roland.roovers@ghd.com

Attach. Appendices A-B

RR/hs

# Appendix A

## Traffic Data

Report-1.1	Location : 3402EW WR34 - 0.1 km East of WR 32														
	Direction : East Road :														
	Dates : 25/04/2019														
Classes ----->	Class-1	Class-2	Class-3	Class-4	Class-5	Class-6	Class-7	Class-8	Class-9	Class-10	Class-11	Class-12	Class-13	Total	
00:00 0:15		3												3	0.1%
0:15 0:30		1												1	0.0%
0:30 0:45		4							1					5	0.2%
0:45 1:00		1												1	0.0%
00:00 1:00		9							1					10	0.4%
1:00 1:15															
1:15 1:30		2												2	0.1%
1:30 1:45															
1:45 2:00		1	1											2	0.1%
1:00 2:00		3	1											4	0.2%
2:00 2:15															
2:15 2:30		1												1	0.0%
2:30 2:45		1	1											2	0.1%
2:45 3:00															
2:00 3:00		2	1											3	0.1%
3:00 3:15															
3:15 3:30			1											1	0.0%
3:30 3:45		2	2											4	0.2%
3:45 4:00		1												1	0.0%
3:00 4:00		3	3											6	0.2%
4:00 4:15			1						1					2	0.1%
4:15 4:30		1	1											2	0.1%
4:30 4:45		6	1											7	0.3%
4:45 5:00		5	1						2					8	0.3%
4:00 5:00		12	4						3					19	0.8%
5:00 5:15		5							1					6	0.2%
5:15 5:30		11	6		1				1					19	0.8%
5:30 5:45		16	2						1	1				20	0.8%
5:45 6:00	1	15	9		2	1								28	1.1%
5:00 6:00	1	47	17		3	1			3	1				73	2.9%
6:00 6:15		12	5		1	1			1					20	0.8%
6:15 6:30		30	6			1	1		3					41	1.6%
6:30 6:45	1	45	11	1	4	1			1	2				66	2.6%
6:45 7:00		28	10	2	5				1	1	2			49	1.9%
6:00 7:00	1	115	32	3	10	3	1	2	7	2				176	7.0%
7:00 7:15		37	12	3					2					54	2.1%
7:15 7:30		37	11		3			1	1					53	2.1%
7:30 7:45		52	10		2	2		1	3	1				69	2.7%
7:45 8:00	1	49	13	2	1	1		1	1					68	2.7%
7:00 8:00	1	175	46	5	4	2		3	7	1				244	9.7%
8:00 8:15		32	10	1	1	1								45	1.8%
8:15 8:30		32	13		3			1						49	1.9%
8:30 8:45		38	17			1	1							57	2.3%
8:45 9:00		39	12			1								52	2.1%
8:00 9:00		141	52	1	4	3	1	1						203	8.1%
9:00 9:15		34	7	1	2	1			1				1	47	1.9%
9:15 9:30		14	4			1			1					20	0.8%
9:30 9:45		19	12	2	3				2					38	1.5%
9:45 10:00		13	16	1	1	1			2	1				35	1.4%
9:00 10:00		80	39	4	6	3		2	5				1	140	5.6%
10:00 10:15		15	6					1	1					23	0.9%
10:15 10:30		16	4	1				1						22	0.9%
10:30 10:45		14	7		1	2		1	1					26	1.0%
10:45 11:00		11	10		3	4	1		1					30	1.2%
10:00 11:00		56	27	1	4	6	2	2	3					101	4.0%
11:00 11:15		17	7		2	1								27	1.1%
11:15 11:30	1	23	10	1	1	1	1		1					39	1.5%
11:30 11:45		25	7		1	3								36	1.4%
11:45 12:00	1	13	3				1							18	0.7%
11:00 12:00	2	78	27	1	4	5	2		1					120	4.8%

AM PK HR  
from East

Trucks from east  
7  
3

2  
4

6.9% trucks  
16

231

PHF	PHF
East	All Intersection
15 mins	15 mins
69	129
68	136
45	99
49	113
0.837	0.877



Report-1.2		Location : 3402EW WR34 - 0.1 km East of WR 32														
		Direction : West											Road :			
		Dates : 25/04/2019														
Classes ----->		Class-1	Class-2	Class-3	Class-4	Class-5	Class-6	Class-7	Class-8	Class-9	Class-10	Class-11	Class-12	Class-13	Total	
00:00	0:15		1	1											2	0.1%
0:15	0:30		1												1	0.0%
0:30	0:45		1	1											2	0.1%
0:45	1:00		2						1						3	0.1%
00:00	1:00		5	2					1						8	0.3%
1:00	1:15		5												5	0.2%
1:15	1:30		2	1											3	0.1%
1:30	1:45		2												2	0.1%
1:45	2:00															
1:00	2:00		9	1											10	0.3%
2:00	2:15															
2:15	2:30		3												3	0.1%
2:30	2:45		2												2	0.1%
2:45	3:00						1								1	0.0%
2:00	3:00		5			1									6	0.2%
3:00	3:15			1											1	0.0%
3:15	3:30			1											1	0.0%
3:30	3:45															
3:45	4:00															
3:00	4:00			2											2	0.1%
4:00	4:15															
4:15	4:30		1	1											2	0.1%
4:30	4:45		1												1	0.0%
4:45	5:00		2	2											4	0.1%
4:00	5:00		4	3											7	0.2%
5:00	5:15			2											2	0.1%
5:15	5:30	1	6	1											8	0.3%
5:30	5:45		3	2		1									6	0.2%
5:45	6:00		6	2											8	0.3%
5:00	6:00	1	15	7		1									24	0.8%
6:00	6:15		4	1		1									6	0.2%
6:15	6:30		13	4				1							18	0.6%
6:30	6:45		16	6		1		2							25	0.8%
6:45	7:00		21	8	2	1									32	1.0%
6:00	7:00		54	19	2	3		3							81	2.6%
7:00	7:15		25	10		3	2								40	1.3%
7:15	7:30		39	9		3	1								52	1.6%
7:30	7:45	1	48	7		2	2								60	1.9%
7:45	8:00		48	15		3	2								68	2.2%
7:00	8:00	1	160	41		5	6	7							220	7.0%
8:00	8:15	1	41	4	3	1	1	1	1				1		54	1.7%
8:15	8:30	1	50	7	2	3	3	1							64	2.0%
8:30	8:45		44	8	1	3	3				1				60	1.9%
8:45	9:00		37	11	1				1						50	1.6%
8:00	9:00	2	172	30	7	4	7	1	1	2	1			1	228	7.2%
9:00	9:15		31	11	4	1	1		1						49	1.6%
9:15	9:30		26	9		2	5				1				43	1.4%
9:30	9:45		20	5		2	2								29	0.9%
9:45	10:00		14	7		2									23	0.7%
9:00	10:00		91	32	4	7	8		1		1				144	4.6%
10:00	10:15		21	7		1	2		1	1	2				35	1.1%
10:15	10:30		19	9	1	1	3			1	1				34	1.1%
10:30	10:45		16	5	1	1	2								25	0.8%
10:45	11:00		21	7		1	3	1			3				36	1.1%
10:00	11:00		77	28	2	3	10	1	1	5	3				130	4.1%
11:00	11:15		10	10	1	1									22	0.7%
11:15	11:30		18	6		1	3	1	1		1				31	1.0%
11:30	11:45		25	4		2	2			4			1		38	1.2%
11:45	12:00		23	7		2	1		2						35	1.1%
11:00	12:00		76	27	1	6	6	1	3	4	1			1	126	4.0%

AM PK HR  
from West

PHF
West
15 mins
60
68
54
64
0.904

Trucks from west

4
5

7.3% trucks  
18 246

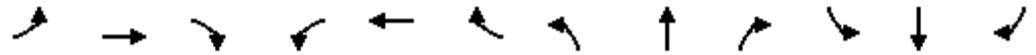


# Appendix B

**Total Traffic SYNCHRO Reports**

Volume  
2: WR 34 & Access

12/13/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	3	246	1	1	231	2	1	0	1	12	0	13
Future Volume (vph)	3	246	1	1	231	2	1	0	1	12	0	13
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	280	1	1	263	2	1	0	1	14	0	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	284	0	0	266	0	0	2	0	0	29	0
Intersection Summary												

# HCM Unsignalized Intersection Capacity Analysis

## 2: WR 34 & Access

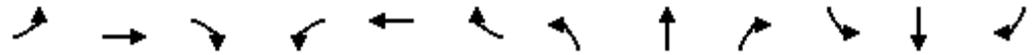
12/13/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	3	246	1	1	231	2	1	0	1	12	0	13
Future Volume (Veh/h)	3	246	1	1	231	2	1	0	1	12	0	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	3	280	1	1	263	2	1	0	1	14	0	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	265			281			568	554	280	554	553	264
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	265			281			568	554	280	554	553	264
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			100	100	100	97	100	98
cM capacity (veh/h)	1271			1253			417	433	747	434	433	763
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	284	266	2	29								
Volume Left	3	1	1	14								
Volume Right	1	2	1	15								
cSH	1271	1253	535	559								
Volume to Capacity	0.00	0.00	0.00	0.05								
Queue Length 95th (m)	0.1	0.0	0.1	1.2								
Control Delay (s)	0.1	0.0	11.8	11.8								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.1	0.0	11.8	11.8								
Approach LOS			B	B								
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			25.1%	ICU Level of Service		A						
Analysis Period (min)			15									

Volume  
2: WR 34 & Access

12/13/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	5	532	1	1	235	4	1	0	1	2	0	3
Future Volume (vph)	5	532	1	1	235	4	1	0	1	2	0	3
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	7%	4%	4%	7%	7%	7%	7%	7%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	585	1	1	258	4	1	0	1	2	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	591	0	0	263	0	0	2	0	0	5	0
Intersection Summary												

# HCM Unsignalized Intersection Capacity Analysis

## 2: WR 34 & Access

12/13/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	532	1	1	235	4	1	0	1	2	0	3
Future Volume (Veh/h)	5	532	1	1	235	4	1	0	1	2	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	5	585	1	1	258	4	1	0	1	2	0	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	262			586			860	860	586	858	858	260
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	262			586			860	860	586	858	858	260
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			100	100	100	99	100	100
cM capacity (veh/h)	1274			965			268	287	501	270	288	767
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	591	263	2	5								
Volume Left	5	1	1	2								
Volume Right	1	4	1	3								
cSH	1274	965	350	441								
Volume to Capacity	0.00	0.00	0.01	0.01								
Queue Length 95th (m)	0.1	0.0	0.1	0.3								
Control Delay (s)	0.1	0.0	15.4	13.2								
Lane LOS	A	A	C	B								
Approach Delay (s)	0.1	0.0	15.4	13.2								
Approach LOS			C	B								
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization			41.6%		ICU Level of Service				A			
Analysis Period (min)			15									

# **Appendix D**

**Stormwater Management Plan (GHD,  
August 2022) (Text, Figures, Drawings and  
Tables only, no Appendices)**

## Amelia Soutar

---

**From:** Nishant Patel  
**Sent:** Wednesday, May 12, 2021 12:56 PM  
**To:** Young, Justie (MECP)  
**Cc:** Fred Taylor; Amelia Soutar  
**Subject:** RE: Industrial Sewage Works ECA Ref# 1000116741

**DISABLEFILINGSTATUS:** 0

Good Afternoon Justie,

We are in agreement with this approach. We accept to withdraw the sewage works ECA application.

Thank you,

**Nishant Patel, EIT**

### GHD

*Proudly employee owned*

Direct: +1 519 340 3842 | T: +1 519 884 0510 | E: [Nishant.Patel@ghd.com](mailto:Nishant.Patel@ghd.com)  
455 Phillip St Unit#100A Waterloo Ontario N2L 3X2 | [www.ghd.com](http://www.ghd.com)

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**From:** Young, Justie (MECP) <Justie.Young@ontario.ca>  
**Sent:** Friday, April 30, 2021 10:18 AM  
**To:** Nishant Patel <Nishantkumar.Patel@ghd.com>; eric@badger.team  
**Subject:** Industrial Sewage Works ECA Ref# 1000116741

You don't often get email from [justie.young@ontario.ca](mailto:justie.young@ontario.ca). [Learn why this is important](#)

Good morning,

I am the review engineer assigned to the Industrial Sewage Works ECA application Ref# 1000116741 for 2374868 ONTARIO INC. (Hydrovac Soil Management at 6678 Wellington Rd 34, Cambridge).

Based on a review of the scope of this application and the Waste ECA application under Ref# 1000115946, the proposal under the Industrial Sewage Works application will be covered under the Waste ECA application, and a separate Industrial Sewage Works ECA is not required at this time.

If you are in agreement, please kindly respond to this email for withdrawing the application.

Thanks,

**Justie Young, P.Eng.**  
Senior Wastewater Engineer

**Ministry of the Environment, Conservation and Parks**  
Industrial and Private Wastewater Approvals Services Section  
Environmental Permissions Branch



# **Stormwater Management Plan Rev. 1**

**2374868 Ontario Inc.  
6678 Wellington Road 4  
Township of Puslinch, Ontario**

Badger Conestoga Inc.

August 25, 2022

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Appendix B	Hydrogeological Impact Assessment (HIA) Report
Appendix C	MECP Comments on the HIA Report and Responses
Appendix D	Hydrologic Model Input and Output Files

## Drawings

Drawing C-01	Operations Existing Conditions Site Plan
--------------	--

# 1. Introduction

GHD has prepared this Stormwater Management (SWM) Plan, on behalf of 2374868 Ontario Inc. (The Applicant), to support permit applications. This SWM Plan documents the Applicant's stormwater management features at their processing facility located at 6678 Wellington Road 34 in Wellington County, Township of Puslinch, Ontario (Property). The Site is located on a small portion of the Property as shown on Figure 1, Site Location Map. 2374868 Ontario Inc. owns the Property and operates the Site.

This SWM Plan presents GHD review of the existing SWM features in accordance with Ministry of the Environment, Conservation and Parks (MECP) requirements. GHD notes that this report presents the existing sewage works and that no new works are proposed for the Site. Applications for a Waster Processing Environmental Compliance Approval (ECA) and an Air and Noise ECA for the Site have been submitted.

The Facility receives soil mixed with approximately 40 to 60 percent potable water (liquid soil) from hydrovacating operations at multiple sites conducted by Site operators and trucks. The soil processing operations are governed under the Waste Processing ECA. The wet soil is stockpiled and the water drains off the soil by gravity drainage to the stormwater management system. The dry soil is sampled for chemical analysis to confirm that it is acceptable for use at appropriate on or off-Site locations in accordance with Waste ECA requirements.

The report (in addition to figures, drawings, and appendices) is organized into the following sections:

- Section 1 – Introduction
- Section 2 – Background
- Section 3 – Existing Site Conditions
- Section 4 – Hydrologic Assessment
- Section 5 – Monitoring and Maintenance
- Section 6 – Conclusions

The following guidelines and regulations have been reviewed during the process of developing the SWM Plan:

- "Development Engineering Manual" prepared by the City of Guelph Engineering and Capital Infrastructure Services, dated November 2016
- "Stormwater Management Planning and Design Manual", prepared by the MOECC in March 2003

## 2. Background Information

The Property is legally described as Lot 8, Concession 3 in Wellington County and is 39.3 hectares (ha) in size. The Property is comprised of two (2) equal sized parcels, one zoned as Extractive (EXI) and one zoned as Agricultural (A) as shown on Figure 2.

The Site is located on a 2.16 hectares portion of the EXI zoned parcel as shown on Figure 2. The zoning in the area of the Property is provided in Appendix A. The current zoning allows the Site operations, and a minor zoning amendment application has been submitted to Wellington County/the Township of Puslinch to update the specific allowed uses. The adjacent land use to the Property to the west is an operating aggregate extraction pit, to the north is agricultural land, to the east is forested conservation land, and to the south across Wellington Road 34 are residential and agricultural lands. The Ontario Ministry of Natural Resources and Forestry (MNRF) approved Pit Rehabilitation Plan provides for soil importation and associated infrastructure for rehabilitation.

## 2.1 Site Layout

The Site Layout is shown on Figure 2. The Site operations include the following:

- Site access
- Office Building
- Vehicle Parking areas
- Outdoor soil and water management
- Security

The Property has some wooden fencing on the south, east and north sides.

The Office Building is approximately 715 (m<sup>2</sup>) in size. The building is a barn style open concept, steel framed, and wood and metal clad structure with a concrete foundation and floor. The building is used for office work and miscellaneous equipment storage. Roof stormwater runoff is directed to the ground surface.

## 2.2 Hours and Days of Operations

The Site typically operates from 7 am to 6 pm Monday to Friday with trucks leaving in the morning and returning in the afternoon to unload. Some trucks make multiple trips from/to the Site during the day. The Site also occasionally provides hydrovacating services outside typical operating hours (e.g., after hours and weekends). The Site operates for 50 weeks per year.

## 2.3 Truck Traffic

Traffic to and from the Site uses the access road from the entrance at Wellington Road 34 from near-by streets including Highway 401. All vehicles enter the Property from Wellington Road 34 onto the haul road and proceed directly to the Site. The traffic associated with the operations is not expected to increase from current operations which has 25 hydrovac trucks and personal vehicles of truck drivers and Site personnel.

## 2.4 Service Area/Waste Accepted

The hydrovac trucks work throughout southern Ontario where liquid soil is collected from utility, municipal and commercial sites to ensure that utility strikes and damage do not occur during intrusive work (e.g., utility and roadwork). No hydrovacating is done at environmental or other sites with known soil impacts. Liquid soil loads that may be impacted (e.g., determined by Site information, visual inspection and odours) are not returned to the Site and are sent directly to a MECP permitted treatment or disposal facility.

## 2.5 Receiving and Storage

The Applicant receives a maximum of 250 tonnes of liquid soil per day which is comprised of approximately 150 tonnes of water and 100 tonnes of dry soil. The Site has no more than ten weeks of dry soil stored at the Site at any one time (5,000 tonnes). The soil is placed in stockpiles for drying and sampling and some aggregate is separated out for recycling.

## 2.6 Water Sampling

### 2.6.1 Surface Water Sampling

The Applicant has conducted pond surface water sampling on a weekly basis since 2014. In May 2020, an expanded parameter list was started. From January 2017 to November 2020, 88 surface water samples were collected. The

sampling results for 2020 (May to November 2020) are provided in Table 1 and are representative of the entire data set. The analytical data are compared to the Table 2 Potable Standards<sup>1</sup> as pond water infiltrates to groundwater and groundwater is used for potable use in the area of the Site, and all samples met the Standards.

There are two active water wells (livestock well and Site supply well) on the Property. One well is located on the Agriculture zoned portion of the property and the other is within the Site operations area (Extraction zoned). The Applicant has conducted groundwater well sampling since 2014. The sampling results for 2020 are provided in Table 2A (Agricultural Well) and Table 2B (Site Well), respectively and are representative of the entire data set. The analytical data are compared to the Table 2 Standards<sup>1</sup> and the results met the Standards.

In response to a request from MECP a Hydrogeological Impact Assessment (HIA) was completed for the Site. The HIA provides a comprehensive review of hydrogeological conditions in the area of the Site and concludes that there are no impacts to groundwater resources from Site operations. As part of the HIA, three new groundwater monitoring wells were installed and sampled. The HIA report is provided in Appendix B. The HIA demonstrates that there are no impacts to groundwater resources from the Site operations and a monitoring and reporting program also is included to provide ongoing demonstration of these conditions. MECP completed a technical review of the HIA report and concurred with the report conclusions. MECP's review also suggested that additional monitoring parameters and an increased frequency for the proposed groundwater monitoring program, including reporting be provided. A copy of the MECP's review and the Applicant/GHD's response which concurs with the proposed monitoring program changes are provided in Appendix C.

## 3. Existing Site Conditions

The majority of the surface cover is woodlots, vegetation and grass. The operational Site surface cover is aggregate covered road and parking areas, bare soil and grass. The gravity water drainage from the soil stockpiles is collected in a vegetated drainage swale which runs east west and drains into an on Site-pond. The pond does not have an outlet and water is lost through evapotranspiration or infiltrates to soil and groundwater.

The typical water volume generated from the hydrovac truck is 60% of the total load (conservative maximum amount of 150 tons per day or 35,000 liters per day). This is a conservative maximum volume since all trucks do not run every day and many of the returned loads are not full trucks due to the nature of hydrovac operations.

### 3.1 Existing Site Drainage

The existing conditions drainage patterns and the SWM features are shown on Figure 3 consist of a vegetated swale and SWM pond.

The eastern portion of the Site (Catchment A101, discharges overland towards the vegetated swale, and runoff is conveyed to the SWM pond. Catchment A102 is also captured by the vegetated swale and conveyed to the SWM pond. The remaining area, Catchment A103, discharges directly via sheet flow into the SWM pond. The on-site SWM pond is considered to be a wet pond with normal water levels at approximately 309 m AMSL as shown on Drawing C-01. There are no direct point source discharges of stormwater or outfalls from the Site to off-site areas.

The Property drainage outside of the Site area is not connected to the Site drainage features. The majority of the Property drains via sheet flow either to a second pond (located in the northern area of the Property), or to lower lying areas of the Property. There are no direct point source discharges of stormwater or outfalls from the Property to off Site areas. There is some minor sheet flow runoff from the Property at the perimeter Property boundaries.

---

<sup>1</sup> Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Coarse Textured Soils, as provided in the Table 1 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

## 3.2 Hydrologic Assessment

Existing conditions modelling was conducted using PCSWMM V7.3.3095 to estimate peak flows and runoff volumes and to assess the on-site stormwater features (vegetated swale and SWM pond). The 24-hour SCS Type II storms were simulated using PCSWMM model and the IDF values were obtained from MTO IDF curve lookup tool. The model was run for the 1:2 year through 1:100 year. Table 3 provides the synthetic design storm input parameters.

Catchment model input parameters were obtained from a review of topographic surveys, aerial photographs, and Site visit notes. A summary of the existing conditions catchment parameters are presented in Table 4 and are based on conditions as shown on Drawing C-01. A summary of the estimated peak flow and runoff volume from each catchment area is presented in Tables 5 and 6, respectively.

The PCSWMM model was used to assess the capacity of the on-Site swale and SWM pond. SWM pond information is presented in Table 7, including the maximum pond stage for each storm.

The PCSWMM hydrologic model input and output files for existing conditions is provided as Appendix D.

The hydrological modelling verifies that the on-site stormwater features have sufficient capacity to capture, convey and mitigate the stormwater runoff from the operational areas including additional areas served by the on-site stormwater features.

## 4. Inspection and Maintenance

The following proposed measures should be performed to monitor and maintain the on-site stormwater features:

- Inspect the vegetated swale regularly to check for sediment and/or debris accumulation. If there is a large amount of sediment and/or debris buildup, then perform maintenance.
- The SWM pond should be checked regularly to ensure that excessive sediment build up does not occur. The pond area should be cleaned on an as required basis. If erosion is present, the affected areas must be maintained, re graded or otherwise restored as required.
- Conduct yard inspection on a regular basis and perform maintenance as required to keep outside areas clean to minimize potential impacts to stormwater.

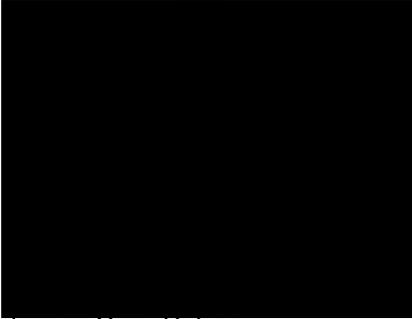
These inspection and maintenance activities are included in the Design and Operations Report for the Site submitted with the application for an ECA (Waste Processing).

## 5. Conclusions

GHD has prepared this Stormwater Management Plan for 2374868 Ontario Inc. for the exiting Site servicing hydrovacating operations.

Note that no new works or modifications to the Site are proposed. Hence, Site drainage pattern and stormwater runoff are maintained. GHD's assessment of the operation of the existing sewage works is that no additional quantity or quality works are required. The on-site stormwater features provide water quality treatment accumulatively through a vegetated swale by promoting settling of suspended solids and infiltration of stormwater runoff via the SWM pond. In addition, the SWM pond has sufficient capacity to capture and store stormwater runoff generated by storm events larger than the 100 year from all contributing drainage areas.

All of Which is Respectfully Submitted,

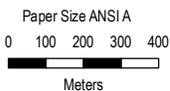
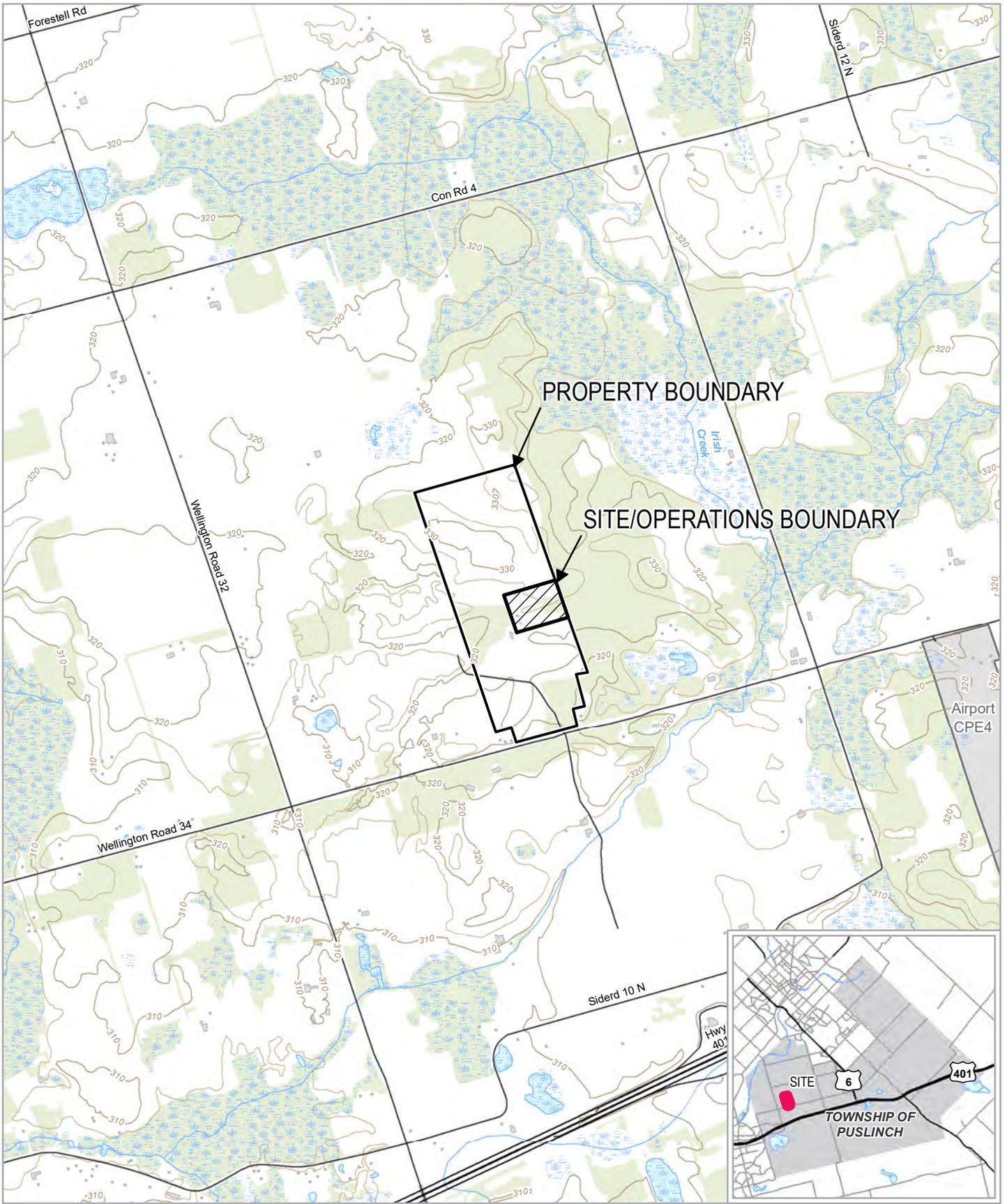


Janusz Czuj, P. Eng.



Nishant Patel, EIT

# Figures



Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983 CSRS  
 Grid: NAD 1983 CSRS UTM Zone 17N

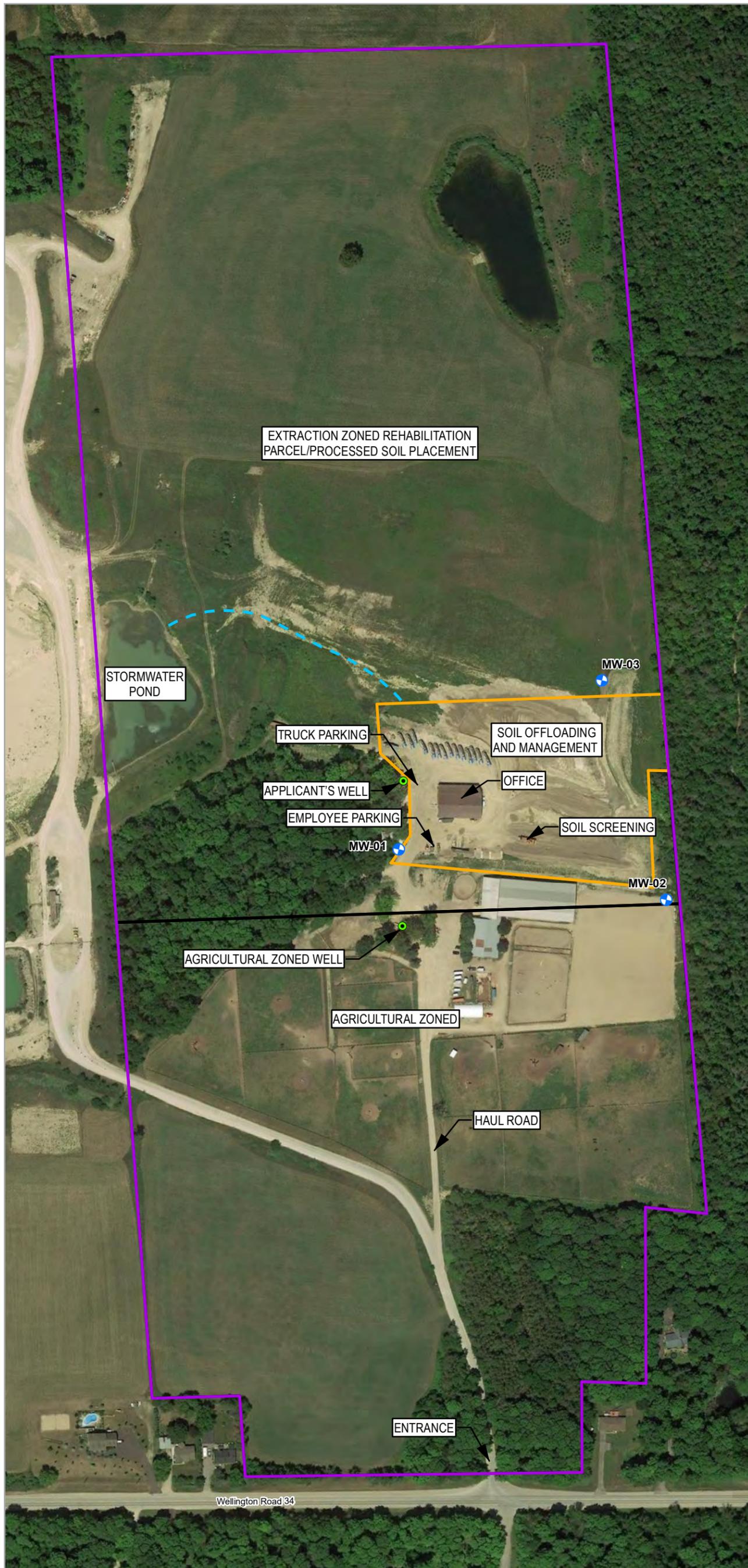
2374868 ONTARIO INC. 6678  
 WELLINGTON RD 34  
 TOWNSHIP OF PUSLINCH, ON

Project No. 11210029  
 Revision No. -  
 Date Oct 9, 2020

**SITE LOCATION MAP**

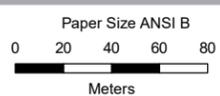
**FIGURE 1**

Data source: WWIS, 2020. Ontario Ministry of the Environment (Accessed August, 2020); Imagery Google 2020. Capture date: 7/Jul/2018



**Legend**

- Well
- ⊕ Monitoring Well
- - - Drainage Swale
- ▭ Site/Operations Boundary
- ▭ Property Boundary



Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983 CSRS  
 Grid: NAD 1983 CSRS UTM Zone 17N

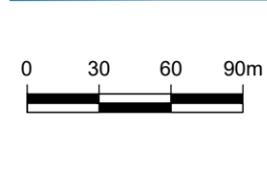
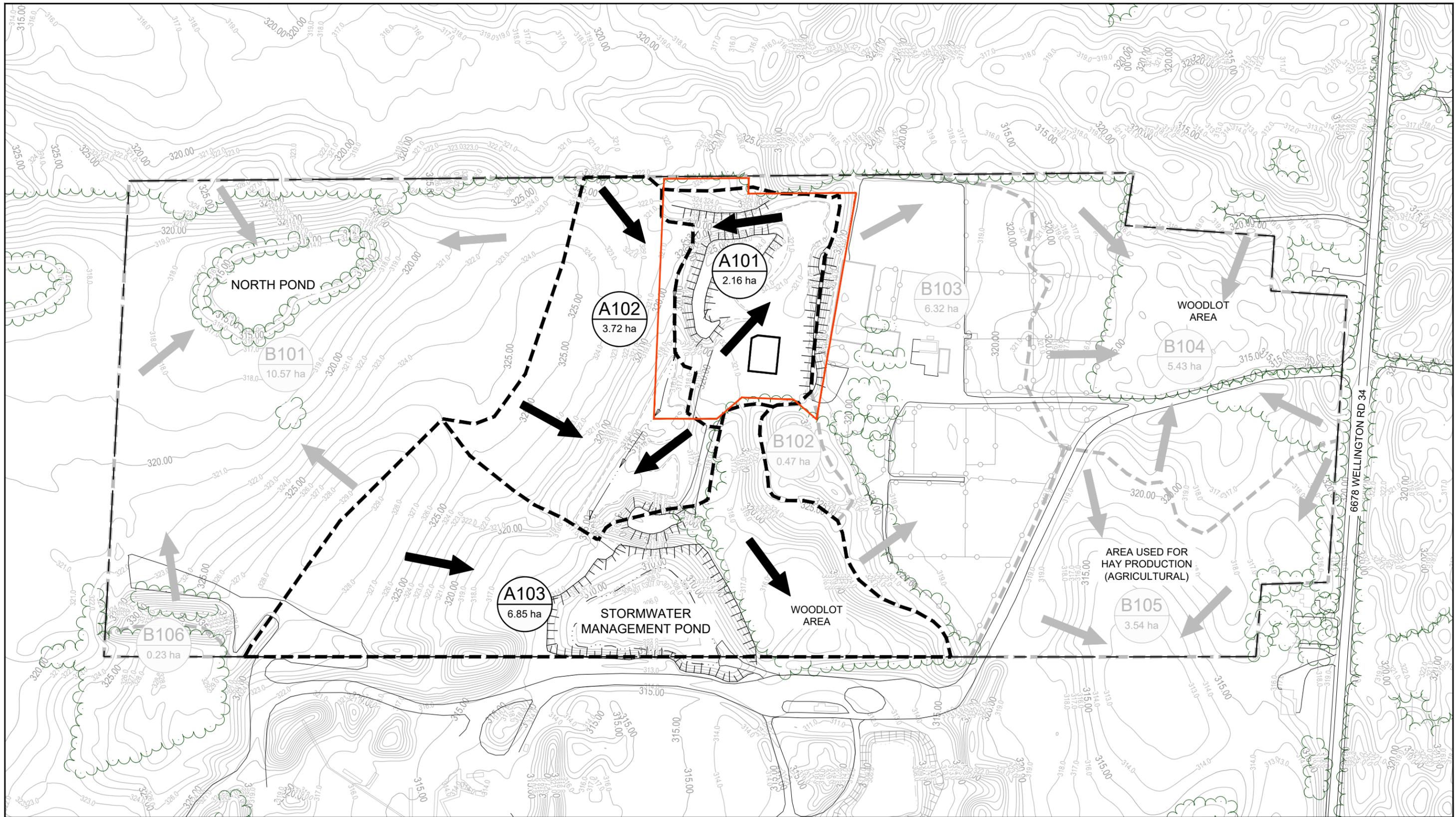


2374868 ONTARIO INC.  
 6678 WELLINGTON RD 34  
 TOWNSHIP OF PUSLINCH, ON

Project No. 11210029  
 Revision No. -  
 Date Feb 1, 2021

**SITE LAYOUT**

**FIGURE 2**



**LEGEND**

- SITE OPERATION CATCHMENT BOUNDARY
- CATCHMENT BOUNDARY
- A101 CATCHMENT ID
- 2.16 ha CATCHMENT AREA
- PROPERTY BOUNDARY
- SITE/OPERATIONS BOUNDARY
- ➔ DIRECTION OF SURFACE WATER FLOW



2374868 ONTARIO INC.  
 STORMWATER MANAGEMENT PLAN  
 EXISTING CONDITIONS  
 CATCHMENT DELINEATION

11210029-01

Dec 17, 2020

**FIGURE 3**

# Tables





**Table 1**  
**Pond Surface Water Analytical Data (May to November 2020)**  
**Stormwater Management Plan**  
**2374868 Ontario Inc.**  
**Wellington County, Ontario**

Sample ID: Report No. Sample Date:	W-11210029-28052020-CD002	W-11210029-040620-AS-004	W-11210029-20200611-CD-006	W11210029-20200618-8	W-11210029-20200625-10	W-11210029-20200716-16	W-11210029-20200806-22	W-11210029-20200827-28	W-11210029-20200903-30	
	L2453062-1 May 28 2020	L2456339-1 June 4 2020	L2459298-1 June 11 2020	L2465490 June 18 2020	L2468205-1 June 25 2020	L2475470-1 July 16 2020	L2484852-1 August 6 2020	L2495218 August 27 2020	L2498566-1 September 3 2020	
<b>Table 2</b>	<b>PWQO/</b>									
<b>Standards 2</b>	<b>IPWQO 3</b>									
<b>2011</b>	<b>1999</b>	<b>Units</b>								
<b>Hydrocarbons (Water)</b>										
F1 (C6-C10)	750	µg/L	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100	<100	<100	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370	<370	<370	<370	<370	<370
<b>Semi-Volatile Organics (Water)</b>										
Biphenyl	0.5	0.2	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
4-Chloroaniline	10		µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	200	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)eth	120		µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2-Chlorophenol	8.9		µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	0.6	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-Dichlorophenol	20	0.2	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Diethylphthalate	38		µg/L	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethylphthalate	38		µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	8	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	10	µg/L	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	5	4	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	6	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5		µg/L	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57	<0.57
Bis(2-ethylhexyl)phthalat	10		µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Pentachlorophenol	30	0.5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Phenol	890	5	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	70	0.5	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	18	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	18	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
<b>Polychlorinated Biphenyls (Water)</b>										
Aroclor 1242			µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1248			µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1254			µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Aroclor 1260			µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total PCBs	3	0.001	µg/L	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
<b>Aggregate Organics (Water)</b>										
BOD			µg/L	4100	<3000	<3000				
<b>Physical Tests (Water)</b>										
pH			pH units	8.23	8.46	8.16				
Total Suspended Solids			µg/L	12800	4600	22600				
<b>Anions and Nutrients (Water)</b>										
Phosphorus, Total			µg/L	36.5	25.7	51.6	35.4	4.5	7.0	7.0
<b>Organic / Inorganic Carbon (Water)</b>										
Total Organic Carbon			µg/L	5730	4830	7240				
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>										
Acenaphthene	4.1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	2.4		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01		µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	0.1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	0.2		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	0.41		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	120		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2		µg/L	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	3.2		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	3.2		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Naphthalene	11		µg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	4.1		µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

**Notes:**

- (1) Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.
- (2) Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.
- (3) PWQO=Provincial Water Quality Objective, MECP, February 1999  
IPWQO=Interim Provincial Water Quality Objective, MECP, February 1999
- (4) The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75
- (5) The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100
- (6) The IPWQO for lead is 0.005 mg/L when the hardness as CaCO3 (mg/L) is >80
- (\*) The PWQO is for Dissolved Metals
- No data or Standard available.
- ND Not detected at the associated detection limit (DL).
- µg/L microgram/liter
- cfu /ml colony forming units/milliliter
- Concentration greater then referenced 2011 Table 2 Criteria.

**Table 1**  
**Pond Surface Water Analytical Data (May to November 2020)**  
**Stormwater Management Plan**  
**2374868 Ontario Inc.**  
**Wellington County, Ontario**

Sample ID: Report No. Sample Date:	W-11210029-20200910-32	W-11210029-20200917-34	W-11210029-20200924-36	W-11210029-20201001-38	W-11210029-20201008-40	W-11210029-20201015-42	W-11210029-20201022-44	W-11210029-20201029-46	W-11210029-20201105- 48	W-11210029-20201112-50	W-11210029-20201119-52	W-11210029-20201126-54
	L2501541-1 September 10 2020	L2504779-1 September 17 2020	L2507865-1 September 24 2020	L2511128-1 October 1 2020	L2514428-1 October 8 2020	L2517112-1 October 15 2020	L2520323-1 October 22 2020	L2523350-1 October 29 2020	L2526411-1 November 5 2020	L2528910-1 November 12 2020	L2531509-1 November 19 2020	L2534021-1 November 26 2020
<b>Table 2</b>												
<b>Standards <sup>2</sup></b>												
<b>PWQO/ IPWQO <sup>3</sup></b>												
<b>2011</b>												
<b>1999</b>												
<b>Units</b>												
<b>Hydrocarbons (Water)</b>												
F1 (C6-C10)	750											
F1-BTEX												
F2 (C10-C16)	150											
F2-Naphth												
F3 (C16-C34)	500											
F3-PAH												
F4 (C34-C50)	500											
Total Hydrocarbons (C6-C50)												
<b>Semi-Volatile Organics (Water)</b>												
Biphenyl	0.5	0.2										
4-Chloroaniline	10											
Bis(2-chloroethyl)ether	5	200										
Bis(2-chloroisopropyl)eth	120											
2-Chlorophenol	8.9											
3,3'-Dichlorobenzidine	0.5	0.6										
2,4-Dichlorophenol	20	0.2										
Diethylphthalate	38											
Dimethylphthalate	38											
2,4-Dimethylphenol	59	8										
2,4-Dinitrophenol	10	10										
2,4-Dinitrotoluene	5	4										
2,6-Dinitrotoluene	5	6										
2,4+2,6-Dinitrotoluene	5											
Bis(2-ethylhexyl)phthalat	10											
Pentachlorophenol	30	0.5										
Phenol	890	5										
1,2,4-Trichlorobenzene	70	0.5										
2,4,5-Trichlorophenol	8.9	18										
2,4,6-Trichlorophenol	2	18										
<b>Polychlorinated Biphenyls (Water)</b>												
Aroclor 1242												
Aroclor 1248												
Aroclor 1254												
Aroclor 1260												
Total PCBs	3	0.001										
<b>Aggregate Organics (Water)</b>												
BOD												
<b>Physical Tests (Water)</b>												
pH												
Total Suspended Solids												
<b>Anions and Nutrients (Water)</b>												
Phosphorus, Total												
Organic / Inorganic Carbon (Water)												
Total Organic Carbon												
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>												
Acenaphthene	4.1											
Acenaphthylene	1											
Anthracene	2.4											
Benzo(a)anthracene	1											
Benzo(a)pyrene	0.01											
Benzo(b)fluoranthene	0.1											
Benzo(g,h,i)perylene	0.2											
Benzo(k)fluoranthene	0.1											
Chrysene	0.1											
Dibenzo(ah)anthracene	0.2											
Fluoranthene	0.41											
Fluorene	120											
Indeno(1,2,3-cd)pyrene	0.2											
1+2-Methylnaphthalenes	3.2											
1-Methylnaphthalene	3.2											
2-Methylnaphthalene	3.2											
Naphthalene	11											
Phenanthrene	1											
Pyrene	4.1											

Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water : monthly basis from January 2017 to December 2019.

Full Depth Generic Site Condition Standards in a Potable Ground Water Cor provided in the Table 2 of the MECP document entitled "Soil, Ground Water Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

PWQO=Provincial Water Quality Objective, MECP, February 1999  
 IPWQO=Interim Provincial Water Quality Objective, MECP, February 1999  
 The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is  
 The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is  
 The IPWQO for lead is 0.005 mg/L when the hardness as CaCO3 (mg/L) is :  
 The PWQO is for Dissolved Metals  
 No data or Standard available.  
 Not detected at the associated detection limit (DL).  
 microgram/liter  
 colony forming units/milliliter  
 concentration greater than referenced 2011 Table 2 Criteria.

**Summary of Water Supply A Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b>	<b>Water Supply A Zone</b>	<b>Water Supply A Zone</b>	<b>Water Supply A Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200702-12</b>	<b>W-11210029-20200723-18</b>	<b>W-11210029-20200813-24</b>
<b>Report No.</b>	<b>L2468705-1</b>	<b>L2478867-1</b>	<b>L2488954-1</b>
<b>Sample Date:</b>	<b>July 2 2020</b>	<b>July 23 2020</b>	<b>August 13 2020</b>

**Table 2  
Standards <sup>2</sup>**

	<b>2011</b>	<b>Units</b>			
<b>Metals</b>					
Aluminum	--	µg/L	<5.0	<5.0	19.2
Antimony	6	µg/L	<0.1	<0.1	<0.1
Arsenic	25	µg/L	5.17	2.24	3.64
Barium	1000	µg/L	49.5	50.6	77.9
Beryllium (4)	4	µg/L	<0.1	<0.1	<0.1
Bismuth	--	µg/L	<0.05	<0.05	<0.05
Boron (total)	5000	µg/L	<10.0	<10.0	14
Cadmium (5)	2.7	µg/L	<0.005	<0.005	<0.005
Calcium	--	µg/L	70600	68300	48500
Cesium	--	µg/L	<0.01	<0.01	<0.01
Chromium	50	µg/L	<0.5	<0.5	<0.5
Chromium, Hexavalent	25	µg/L	<0.5	<0.5	<0.5
Cobalt	3.8	µg/L	0.11	<0.1	<0.1
Copper	87	µg/L	<0.5	4	<0.5
Iron	--	µg/L	400	22	244
Lead (6)	10	µg/L	0.227	0.268	0.083
Lithium	--	µg/L	3.4	3.9	3.2
Magnesium	--	µg/L	32600	31800	25600
Manganese	--	µg/L	10.8	7.64	8.13
Mercury	0.29	µg/L	<0.005	<0.005	<0.005
Molybdenum	70	µg/L	0.559	0.632	0.655
Nickel	100	µg/L	1.7	0.86	<0.5
Phosphorus	--	µg/L	<50.0	<50.0	<50.0
Potassium	--	µg/L	978	996	979
Rubidium	--	µg/L	<0.2	0.21	0.35
Selenium	10	µg/L	<0.05	<0.05	<0.05
Silicon	--	µg/L	8890	9290	7300
Silver	1.5	µg/L	<0.05	<0.05	<0.05
Sodium	490000	µg/L	7790	7510	5750
Strontium	--	µg/L	148	146	348
Sulfur	--	µg/L	20200	20100	7710
Tellurium	--	µg/L	<0.2	<0.2	<0.2
Thallium	2.0	µg/L	<0.01	<0.01	<0.01
Thorium	--	µg/L	<0.1	<0.1	<0.1
Tin	--	µg/L	<0.1	<0.1	<0.1
Titanium	--	µg/L	<0.3	<0.3	0.62
Tungsten	--	µg/L	<0.1	<0.1	<0.1
Uranium	20.0	µg/L	0.252	0.296	0.383
Vanadium	6.2	µg/L	<0.5	<0.5	<0.5
Zinc	1100	µg/L	5.4	5.0	<3.0
Zirconium	--	µg/L	<0.2	<0.2	<0.2
Total Plate Count	--	cfu/mL			
E. coli	--	cfu/100 mL			

**Summary of Water Supply A Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b>	<b>Water Supply A Zone</b>	<b>Water Supply A Zone</b>	<b>Water Supply A Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200702-12</b>	<b>W-11210029-20200723-18</b>	<b>W-11210029-20200813-24</b>
<b>Report No.</b>	<b>L2468705-1</b>	<b>L2478867-1</b>	<b>L2488954-1</b>
<b>Sample Date:</b>	<b>July 2 2020</b>	<b>July 23 2020</b>	<b>August 13 2020</b>

**Table 2  
Standards <sup>2</sup>**

	<b>2011</b>	<b>Units</b>			
<b><u>Volatile Organic Compounds</u></b>					
Acetone	2700	µg/L	<30	<30	<30
Benzene	5	µg/L	<0.50	<0.50	<0.50
Bromodichloromethane	16	µg/L	<2.0	<2.0	<2.0
Bromoform	25	µg/L	<5.0	<5.0	<5.0
Bromomethane	0.89	µg/L	<0.50	<0.50	<0.50
Carbon tetrachloride	0.79	µg/L	<0.20	<0.20	<0.20
Chlorobenzene	30	µg/L	<0.50	<0.50	<0.50
Dibromochloromethane	25	µg/L	<2.0	<2.0	<2.0
Chloroform	2.4	µg/L	<1.0	<1.0	<1.0
1,2-Dibromoethane		µg/L	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	3	µg/L	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	59	µg/L	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	1	µg/L	<0.50	<0.50	<0.50
Dichlorodifluoromethane	590	µg/L	<2.0	<2.0	<2.0
1,1-Dichloroethane	5	µg/L	<0.50	<0.50	<0.50
1,2-Dichloroethane	1.6	µg/L	<0.50	<0.50	<0.50
1,1-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Methylene Chloride	50	µg/L	<5.0	<5.0	<5.0
1,2-Dichloropropane	5	µg/L	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	0.5	µg/L	<0.50	<0.50	<0.50
Ethylbenzene	2.4	µg/L	<0.50	<0.50	<0.50
n-Hexane	51	µg/L	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	1800	µg/L	<20	<20	<20
Methyl Isobutyl Ketone	640	µg/L	<20	<20	<20
MTBE	15	µg/L	<2.0	<2.0	<2.0
Styrene	5.4	µg/L	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	1.1	µg/L	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	1	µg/L	<0.50	<0.50	<0.50
Tetrachloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Toluene	24	µg/L	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	200	µg/L	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	4.7	µg/L	<0.50	<0.50	<0.50
Trichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Trichlorofluoromethane	150	µg/L	<5.0	<5.0	<5.0
Vinyl chloride	0.5	µg/L	<0.50	<0.50	<0.50
o-Xylene		µg/L	<0.30	<0.30	<0.30
m+p-Xylenes		µg/L	<0.40	<0.40	<0.40
Xylenes (Total)	300	µg/L	<0.50	<0.50	<0.50

**Summary of Water Supply A Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b> Water Supply A Zone	Water Supply A Zone	Water Supply A Zone
<b>Sample ID:</b> W-11210029-20200702-12	W-11210029-20200723-18	W-11210029-20200813-24
<b>Report No.:</b> L2468705-1	L2478867-1	L2488954-1
<b>Sample Date:</b> July 2 2020	July 23 2020	August 13 2020

**Table 2  
Standards <sup>2</sup>**

	2011	Units			
<b><u>Hydrocarbons</u></b>					
F1 (C6-C10)	750	µg/L	<25	<25	<25
F1-BTEX		µg/L	<25	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100	<100
F2-Naphth		µg/L	<100	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250	<250
F3-PAH		µg/L	<250	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370	<370
<b><u>Semi-Volatile Organics</u></b>					
Biphenyl	0.5	µg/L	<0.40	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40	<0.40
2-Chlorophenol	8.9	µg/L	<0.30	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40	<0.40
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30	<0.30
Diethylphthalate	38	µg/L	<0.20	<0.20	<0.20
Dimethylphthalate	38	µg/L	<0.20	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<2.0	<2.0	<2.0
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.57	<0.57	<0.57
Bis(2-ethylhexyl)phthalate	10	µg/L	<2.0	<2.0	<2.0
Pentachlorophenol	30	µg/L	<0.50	<0.50	<0.50
Phenol	890	µg/L	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20	<0.20
<b><u>Polychlorinated Biphenyls</u></b>					
Aroclor 1242		µg/L	<0.020	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020	<0.020
Total PCBs	3	µg/L	<0.040	<0.040	<0.040
<b><u>Aggregate Organics</u></b>					
BOD		µg/L			
<b><u>Physical Tests</u></b>					
pH		pH units			
Total Suspended Solids		µg/L			
<b><u>Anions and Nutrients</u></b>					
Phosphorus, Total		µg/L	5.6	<3.0	8.2
<b><u>Organic / Inorganic Carbon</u></b>					
Total Organic Carbon		µg/L			

**Summary of Water Supply A Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

Location:	Water Supply A Zone	Water Supply A Zone	Water Supply A Zone
Sample ID:	W-11210029-20200702-12	W-11210029-20200723-18	W-11210029-20200813-24
Report No.	L2468705-1	L2478867-1	L2488954-1
Sample Date:	July 2 2020	July 23 2020	August 13 2020

**Table 2  
Standards <sup>2</sup>**

	2011	Units			
<b><u>Polycyclic Aromatic Hydrocarbons</u></b>					
Acenaphthene	4.1	µg/L	<0.020	<0.020	<0.020
Acenaphthylene	1	µg/L	<0.020	<0.020	<0.020
Anthracene	2.4	µg/L	<0.020	<0.020	<0.020
Benzo(a)anthracene	1	µg/L	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01	µg/L	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2	µg/L	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020
Chrysene	0.1	µg/L	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	0.2	µg/L	<0.020	<0.020	<0.020
Fluoranthene	0.41	µg/L	<0.020	<0.020	<0.020
Fluorene	120	µg/L	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2	µg/L	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2	µg/L	<0.028	<0.028	<0.028
1-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020
2-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020
Naphthalene	11	µg/L	<0.050	<0.050	<0.050
Phenanthrene	1	µg/L	<0.020	<0.020	<0.020
Pyrene	4.1	µg/L	<0.020	<0.020	<0.020

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

**Summary of Water Supply EXI Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200709-14</b>	<b>W-11210029-20200730-20</b>	<b>W-11210029-20200813-26</b>
<b>Report No.:</b>	<b>L2472292-1</b>	<b>L2482453-1</b>	<b>L2491984</b>
<b>Sample Date:</b>	<b>July 9 2020</b>	<b>July 30 2020</b>	<b>August 20 2020</b>

**Table 2  
Standards<sup>2</sup>  
2011**

		<b>Units</b>			
<b><u>Metals</u></b>					
Aluminum	--	µg/L	6.6	8.0	<5.0
Antimony	6	µg/L	<0.1	<0.1	<0.1
Arsenic	25	µg/L	5.8	3.62	2.80
Barium	1000	µg/L	65.3	70.5	49.2
Beryllium (4)	4	µg/L	<0.1	<0.1	<0.1
Bismuth	--	µg/L	<0.05	<0.05	<0.05
Boron (total)	5000	µg/L	14	14.0	<10
Cadmium (5)	2.7	µg/L	<0.005	<0.005	<0.005
Calcium	--	µg/L	46600	47800	68200
Cesium	--	µg/L	<0.01	<0.01	<0.01
Chromium	50	µg/L	<0.5	<0.5	<0.5
Chromium, Hexavalent	25	µg/L	<0.5	<0.5	<0.5
Cobalt	3.8	µg/L	<0.1	<0.1	<0.1
Copper	87	µg/L	<0.5	<0.5	2.22
Iron	--	µg/L	281	265	79
Lead (6)	10	µg/L	<0.05	<0.05	0.166
Lithium	--	µg/L	2.6	3.6	4.5
Magnesium	--	µg/L	27300	26600	34100
Manganese	--	µg/L	9.31	7.61	9.68
Mercury	0.29	µg/L	<0.005	<0.005	<0.005
Molybdenum	70	µg/L	0.703	0.668	0.589
Nickel	100	µg/L	<0.5	<0.5	<0.5
Phosphorus	--	µg/L	<50.0	<50.0	<50
Potassium	--	µg/L	995	991	937
Rubidium	--	µg/L	0.34	0.38	<0.2
Selenium	10	µg/L	<0.05	<0.05	<0.05
Silicon	--	µg/L	7600	7430	8950
Silver	1.5	µg/L	<0.05	<0.05	<0.05
Sodium	490000	µg/L	5880	5970	7880
Strontium	--	µg/L	322	356	147
Sulfur	--	µg/L	7150	8040	20400
Tellurium	--	µg/L	<0.2	<0.2	<0.2
Thallium	2.0	µg/L	<0.01	<0.01	<0.01
Thorium	--	µg/L	<0.1	<0.1	<0.1
Tin	--	µg/L	<0.1	<0.1	<0.1
Titanium	--	µg/L	<0.3	<0.3	<0.3
Tungsten	--	µg/L	<0.1	<0.1	<0.1
Uranium	20.0	µg/L	0.59	0.397	0.228
Vanadium	6.2	µg/L	<0.5	<0.5	<0.5
Zinc	1100	µg/L	<3.0	<3.0	4.1
Zirconium	--	µg/L	<0.2	<0.2	<0.2
Total Plate Count	--	cfu/mL			
E. coli	--	cfu/100 mL			

**Summary of Water Supply EXI Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200709-14</b>	<b>W-11210029-20200730-20</b>	<b>W-11210029-20200813-26</b>
<b>Report No.:</b>	<b>L2472292-1</b>	<b>L2482453-1</b>	<b>L2491984</b>
<b>Sample Date:</b>	<b>July 9 2020</b>	<b>July 30 2020</b>	<b>August 20 2020</b>

**Table 2  
Standards<sup>2</sup>  
2011**

		<b>Units</b>			
<b><u>Volatile Organic Compounds</u></b>					
Acetone	2700	µg/L	<30	<30	<30
Benzene	5	µg/L	<0.50	<0.50	<0.50
Bromodichloromethane	16	µg/L	<2.0	<2.0	<2.0
Bromoform	25	µg/L	<5.0	<5.0	<5.0
Bromomethane	0.89	µg/L	<0.50	<0.50	<0.50
Carbon tetrachloride	0.79	µg/L	<0.20	<0.20	<0.20
Chlorobenzene	30	µg/L	<0.50	<0.50	<0.50
Dibromochloromethane	25	µg/L	<2.0	<2.0	<2.0
Chloroform	2.4	µg/L	<1.0	<1.0	<1.0
1,2-Dibromoethane		µg/L	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	3	µg/L	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	59	µg/L	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	1	µg/L	<0.50	<0.50	<0.50
Dichlorodifluoromethane	590	µg/L	<2.0	<2.0	<2.0
1,1-Dichloroethane	5	µg/L	<0.50	<0.50	<0.50
1,2-Dichloroethane	1.6	µg/L	<0.50	<0.50	<0.50
1,1-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Methylene Chloride	50	µg/L	<5.0	<5.0	<5.0
1,2-Dichloropropane	5	µg/L	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	0.5	µg/L	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	0.5	µg/L	<0.50	<0.50	<0.50
Ethylbenzene	2.4	µg/L	<0.50	<0.50	<0.50
n-Hexane	51	µg/L	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	1800	µg/L	<20	<20	<20
Methyl Isobutyl Ketone	640	µg/L	<20	<20	<20
MTBE	15	µg/L	<2.0	<2.0	<2.0
Styrene	5.4	µg/L	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	1.1	µg/L	<0.50	<0.50	<0.50
1,1,1,2,2-Tetrachloroethane	1	µg/L	<0.50	<0.50	<0.50
Tetrachloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Toluene	24	µg/L	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	200	µg/L	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	4.7	µg/L	<0.50	<0.50	<0.50
Trichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50
Trichlorofluoromethane	150	µg/L	<5.0	<5.0	<5.0
Vinyl chloride	0.5	µg/L	<0.50	<0.50	<0.50
o-Xylene		µg/L	<0.30	<0.30	<0.30
m+p-Xylenes		µg/L	<0.40	<0.40	<0.40
Xylenes (Total)	300	µg/L	<0.50	<0.50	<0.50

**Summary of Water Supply EXI Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

<b>Location:</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>	<b>Water Supply EXI Zone</b>
<b>Sample ID:</b>	<b>W-11210029-20200709-14</b>	<b>W-11210029-20200730-20</b>	<b>W-11210029-20200813-26</b>
<b>Report No.:</b>	<b>L2472292-1</b>	<b>L2482453-1</b>	<b>L2491984</b>
<b>Sample Date:</b>	<b>July 9 2020</b>	<b>July 30 2020</b>	<b>August 20 2020</b>

**Table 2  
Standards<sup>2</sup>  
2011**

	<b>Units</b>			
<b><u>Hydrocarbons</u></b>				
F1 (C6-C10)	750	µg/L	<25	<25
F1-BTEX		µg/L	<25	<25
F2 (C10-C16)	150	µg/L	<100	<100
F2-Naphth		µg/L	<100	<100
F3 (C16-C34)	500	µg/L	<250	<250
F3-PAH		µg/L	<250	<250
F4 (C34-C50)	500	µg/L	<250	<250
Total Hydrocarbons (C6-C50)		µg/L	<370	<370
<b><u>Semi-Volatile Organics</u></b>				
Biphenyl	0.5	µg/L	<0.40	<0.40
4-Chloroaniline	10	µg/L	<0.40	<0.40
Bis(2-chloroethyl)ether	5	µg/L	<0.40	<0.40
Bis(2-chloroisopropyl)ether	120	µg/L	<0.40	<0.40
2-Chlorophenol	8.9	µg/L	<0.30	<0.30
3,3'-Dichlorobenzidine	0.5	µg/L	<0.40	<0.40
2,4-Dichlorophenol	20	µg/L	<0.30	<0.30
Diethylphthalate	38	µg/L	<0.20	0.25
Dimethylphthalate	38	µg/L	<0.20	<0.20
2,4-Dimethylphenol	59	µg/L	<0.50	<0.50
2,4-Dinitrophenol	10	µg/L	<2.0	<1.0
2,4-Dinitrotoluene	5	µg/L	<0.40	<0.40
2,6-Dinitrotoluene	5	µg/L	<0.40	<0.40
2,4+2,6-Dinitrotoluene	5	µg/L	<0.57	<0.57
Bis(2-ethylhexyl)phthalate	10	µg/L	<2.0	<2.0
Pentachlorophenol	30	µg/L	<0.50	<0.50
Phenol	890	µg/L	<0.50	<0.50
1,2,4-Trichlorobenzene	70	µg/L	<0.40	<0.40
2,4,5-Trichlorophenol	8.9	µg/L	<0.20	<0.20
2,4,6-Trichlorophenol	2	µg/L	<0.20	<0.20
<b><u>Polychlorinated Biphenyls</u></b>				
Aroclor 1242		µg/L	<0.020	<0.020
Aroclor 1248		µg/L	<0.020	<0.020
Aroclor 1254		µg/L	<0.020	<0.020
Aroclor 1260		µg/L	<0.020	<0.020
Total PCBs	3	µg/L	<0.040	<0.040
<b><u>Aggregate Organics</u></b>				
BOD		µg/L		
<b><u>Physical Tests</u></b>				
pH		pH units		
Total Suspended Solids		µg/L		
<b><u>Anions and Nutrients</u></b>				
Phosphorus, Total		µg/L	<3.0	3.4
<b><u>Organic / Inorganic Carbon</u></b>				
Total Organic Carbon		µg/L		3.8

**Summary of Water Supply EXI Zone Groundwater Quality  
(July and August 2020)  
Stormwater Management Plan  
2374868 Ontario Inc.  
Township of Puslinch**

Location:	Water Supply EXI Zone	Water Supply EXI Zone	Water Supply EXI Zone
Sample ID:	W-11210029-20200709-14	W-11210029-20200730-20	W-11210029-20200813-26
Report No.:	L2472292-1	L2482453-1	L2491984
Sample Date:	July 9 2020	July 30 2020	August 20 2020

**Table 2  
Standards<sup>2</sup>  
2011                      Units**

**Polycyclic Aromatic Hydrocarbons**

Acenaphthene	4.1	µg/L	<0.020	<0.020	<0.020
Acenaphthylene	1	µg/L	<0.020	<0.020	<0.020
Anthracene	2.4	µg/L	<0.020	<0.020	<0.020
Benzo(a)anthracene	1	µg/L	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.01	µg/L	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2	µg/L	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.1	µg/L	<0.020	<0.020	<0.020
Chrysene	0.1	µg/L	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	0.2	µg/L	<0.020	<0.020	<0.020
Fluoranthene	0.41	µg/L	<0.020	<0.020	<0.020
Fluorene	120	µg/L	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2	µg/L	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	3.2	µg/L	<0.028	<0.028	<0.028
1-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020
2-Methylnaphthalene	3.2	µg/L	<0.020	<0.020	<0.020
Naphthalene	11	µg/L	<0.050	<0.050	<0.050
Phenanthrene	1	µg/L	<0.020	<0.020	<0.020
Pyrene	4.1	µg/L	<0.020	<0.020	<0.020

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

**Table 3**

**Design Storms - Intensity Duration Frequency Parameters  
Stormwater Management Plan  
2374868 Ontario Inc.  
Wellington County, Ontario**

<b>Return Period</b>	<b>Storm Type</b>	<b>Rainfall Depth 1 (mm)</b>	<b>Duration (hr)</b>
2-Year	SCS Type II	60.1	24
5-Year	SCS Type II	79.4	24
10-Year	SCS Type II	92.1	24
25-Year	SCS Type II	108.0	24
50-Year	SCS Type II	120.0	24
100-Year	SCS Type II	131.7	24

1. Rainfall depth obtained from the Ontario Ministry of Transportation, IDF Curve Lookup tool, Retrieved: December 15, 2020

Table 4

**Hydrologic Modelling Catchment Parameters - Existing Conditions**  
**Stormwater Management Plan**  
**2374868 Ontario Inc.**  
**Wellington County, Ontario**

**Existing Conditions**

Subcatchment ID	Area	Width	Flow Length	Slope	Imperviousness	Manning' n		Depression Storage		Infiltration (Horton)	
						Imperv.	Perv.	Imperv.	Perv.	Max	Min
	ha	m	m	%	%	(-)	(-)	mm	mm	(mm/hr)	(mm/hr)
A101	2.16	114	190	0.6	3.3	0.013	0.24	2.5	5.0	76.2	10.92
A102	3.72	248	150	4.4	0	0.013	0.24	2.5	5.0	76.2	10.92
A103	6.85	236	290	7.7	0	0.013	0.24	2.5	5.0	76.2	10.92
<b>Total</b>	<b>12.73</b>										

**Peak Flow Summary - Existing Conditions  
Stormwater Management Plan  
2374868 Ontario Inc.  
Wellington County, Ontario**

<b>Existing Conditions</b>		<b>Peak Flow</b>				
<b>Subcatchment ID</b>	<b>24 hour SCS Type II Storm</b>					
	<b>2-year</b>	<b>5-year</b>	<b>10-year</b>	<b>25-year</b>	<b>50-year</b>	<b>100-year</b>
	<i>(m<sup>3</sup>/s)</i>	<i>(m<sup>3</sup>/s)</i>	<i>(m<sup>3</sup>/s)</i>	<i>(m<sup>3</sup>/s)</i>	<i>(m<sup>3</sup>/s)</i>	<i>(m<sup>3</sup>/s)</i>
A101	0.03	0.06	0.09	0.13	0.15	0.19
A102	0.09	0.24	0.35	0.48	0.59	0.71
A103	0.11	0.32	0.47	0.66	0.82	1.00
<b>On-Site SWM Pond</b>	0.19	0.56	0.83	1.18	1.46	1.79

**Runoff Volume Summary - Existing Conditions  
Stormwater Management Plan  
2374868 Ontario Inc.  
Wellington County, Ontario**

<b>Existing Conditions</b>		<b>Runoff Volume</b>				
<b>Subcatchment ID</b>	<b>24 hour SCS Type II Storm</b>					
	<b>2-year</b>	<b>5-year</b>	<b>10-year</b>	<b>25-year</b>	<b>50-year</b>	<b>100-year</b>
	<i>(m<sup>3</sup>)</i>	<i>(m<sup>3</sup>)</i>	<i>(m<sup>3</sup>)</i>	<i>(m<sup>3</sup>)</i>	<i>(m<sup>3</sup>)</i>	<i>(m<sup>3</sup>)</i>
A101	80	210	320	470	580	710
A102	140	470	690	970	1190	1420
A103	210	750	1150	1650	2040	2470
<b>On-Site SWM Pond</b>	430	1430	2160	3090	3810	4600

Table 7

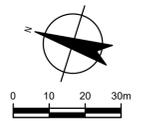
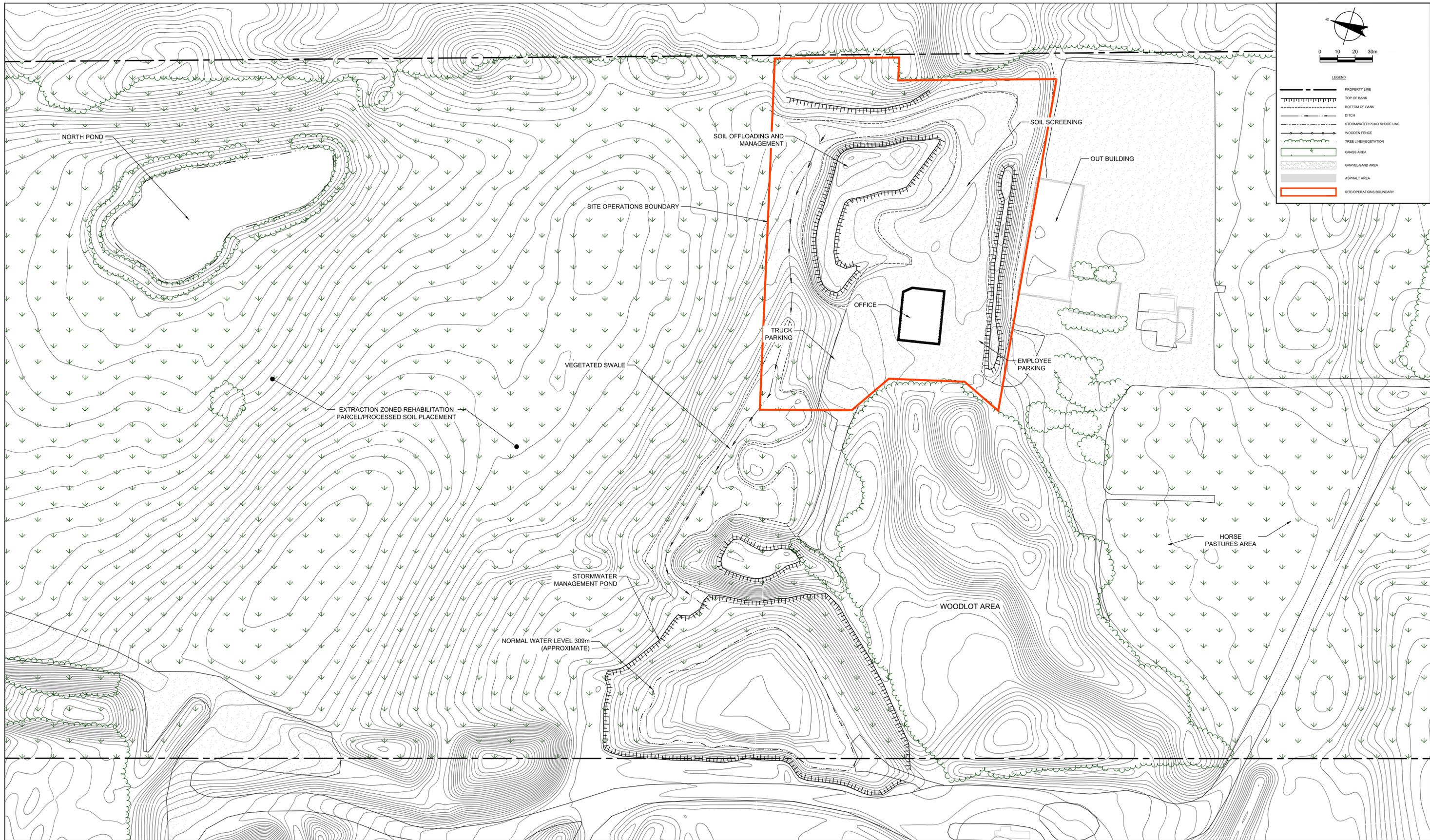
**Stormwater Management Pond Stage-Area-Volume - Existing Conditions**  
**Stormwater Management Plan**  
**2374868 Ontario Inc.**  
**Wellington County, Ontario**

**Stormwater Management Pond**

	<u>Elevation</u> <i>(m asl)</i>	<u>Depth</u> <i>(m)</i>	<u>Area</u> <i>(m<sup>2</sup>)</i>	<u>Total Volume</u> <i>(m<sup>3</sup>)</i>	<u>Storm Event Level</u> <i>(m asl)</i>	
<b>Bottom of Pond</b>	306.00	0.00	558	-	<b>309.08</b> 2-year SCS Type II 24h storm	
	306.25	0.25	1613	271	<b>309.24</b> 5-year SCS Type II 24h storm	
	306.50	0.50	2054	730	<b>309.35</b> 10-year SCS Type II 24h storm	
	306.75	0.75	2377	1,284	<b>309.49</b> 25-year SCS Type II 24h storm	
	307.00	1.00	2680	1,916	<b>309.59</b> 50-year SCS Type II 24h storm	
	307.25	1.25	2962	2,621	<b>309.69</b> 100-year SCS Type II 24h storm	
	307.50	1.50	3228	3,395		
	307.75	1.75	3505	4,236		
	308.00	2.00	3797	5,149		
	308.25	2.25	4136	6,141		
	308.50	2.50	4540	7,225		
	308.75	2.75	5009	8,419		
	<b>Permanent Pool</b>	309.00	3.00	5543	9,738	
		309.25	3.25	6257	11,213	
309.50		3.50	7019	12,872		
309.75		3.75	7452	14,681		
310.00		4.00	7910	16,601		
310.25		4.25	8257	18,622		
310.50		4.50	8613	20,731		
310.75		4.75	8938	22,925		
311.00		5.00	9271	25,201		
311.25		5.25	9614	27,562		
311.50		5.50	9964	30,009		
311.75		5.75	10341	32,547		
<b>Top of Pond</b>	312.50	6.50	11574	40,755		
	312.75	6.75	12369	43,748		

Total Storage (in cubic meters):	<b>43,748</b>
----------------------------------	---------------

# Drawings



**LEGEND**

	PROPERTY LINE
	TOP OF BANK
	BOTTOM OF BANK
	DITCH
	STORMWATER POND SHORE LINE
	WOODEN FENCE
	TREE LINE/VEGETATION
	GRASS AREA
	GRAVEL/SAND AREA
	ASPHALT AREA
	SITE OPERATIONS BOUNDARY

1	ISSUED FOR PERMITTING	BS	DS	MAR 22, 2022
No.	Issue	Drawn	Approved	Date

MAP PROJECTION: TRANSVERSE MERCATOR  
 HORIZONTAL DATUM: NORTH AMERICAN 1983  
 GRID: NAD 1983 UTM ZONE 17N  
 TOPOGRAPHIC ELEVATION:  
 (NAD83 CSRS 2010 UTM: CGVD2013)

SOURCE BASE INFORMATION FROM ONTARIO MINISTRY OF AGRICULTURE, FOOD AND RURAL AFFAIRS (OMAFRA) LIDAR DTM 2018

Bar is 20mm on original size drawing  
 0 20mm

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Drawn	B. SUSERSKI	Designer	N. PATEL
Drafting Check	M. WOLFER	Design Check	D. SINGARAJA
Project Manager	A. SOUTAR	Date	3/22/2022
This document shall not be used for construction unless signed and sealed for construction.		Scale	1:1000

Client	2374868 ONTARIO INC.
Project	STORMWATER MANAGEMENT REPORT
Title	OPERATIONS EXISTING CONDITIONS SITE PLAN
Project No.	11210029-01
Original Size	ANSI D
Sheet No.	C-01
Sheet	1 of 1



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# **Appendix E**

**Aggregate Resources Act (ARA)**

**Policy A.R. 6.00.03**

	<i>Subject:</i> <b>Importation of Inert Fill for the Purpose of Rehabilitation</b>	<i>Policy No.:</i> <b>A.R. 6.00.03</b>	<i>New:</i> <b>No</b>
<i>Compiled by – Branch:</i> <b>Lands &amp; Waters</b>	<i>Section:</i> <b>Aggregate &amp; Petroleum Resources</b>	<i>Date Revised:</i> <b>April 14, 2008</b>	

### **Guiding Principle**

***Historically, legislation has allowed the practice of importing inert material (e.g. topsoil, overburden) for the purpose of rehabilitation (i.e. to create required slopes), where there was insufficient topsoil/overburden existing on the site. This practice is allowed to continue, provided that the site plan allows its use. In situations where the site plan is silent (i.e. importation activity not specifically addressed), a minor site plan amendment is required to allow the activity to occur.***

### **Policy**

The management of inert fill to be brought onto a particular site is governed by Regulation 347 of the *Environmental Protection Act* (EPA), which defines inert as earth or rock fill or waste of a similar nature that contains no putrescible material or soluble or decomposable chemical substance. If the results from a bulk analysis meet the criteria in Table 1 of the Ministry of the Environment’s (MOE) “Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the *Environmental Protection Act*”, as amended, the material is considered as “inert fill”. This material may be used for sloping and/or backfilling purposes provided that the site plan allows its use. However, alternative criteria may be acceptable on a case-by-case basis with prior approval. If the material meets the definition of inert fill, no Certificate of Approval (C of A) is required from the MOE for disposing of the material.

For the purposes of pit/quarry rehabilitation, the soil quality standards for sodium adsorption ratio (SAR) and electrical conductivity (EC) specified in Tables 1, 2, and 3 under Part XV.1 of the EPA are intended to ensure good plant growth. Since plant growth is affected primarily by surface soil, the soil standards document does not include SAR and EC standards for subsurface soil (i.e. Tables 4 and 5 in the soil quality standards). Subsurface soil means soil that is more than 1.5 metres beneath the soil surface. Consequently, there is no need to apply the SAR and EC standards in Table 1, or any other table, for soil that is being deposited as a subsurface soil. The subsurface would be defined based on the final grade after rehabilitation.

**Note:** In situations where there is an existing condition on a site plan requiring the licensee/permittee to meet Table 1 criteria for imported fill being used for rehabilitation purposes, the licensee/permittee may request that the condition be modified to reflect the above discussion regarding SAR and EC criteria. The condition is to be modified through a minor site plan amendment to add Condition 2 in the Sample Wording for Site Plan Conditions (see below).

In 1990, the regulations under the ARA allowed the importation of material without requiring a site plan amendment where material was insufficient on the site. No further consent from the Ministry of Natural Resources was required. Consequently, many site plans remained silent on the importation of material. In 1997, the regulations were changed; this provision was removed and replaced by site plan standards within the Aggregate Resources of Ontario Provincial

Standards. Specifically, site plans for new applications must provide details regarding rehabilitation including whether inert material will be used to facilitate rehabilitation. For new applications, the operational plan must ensure, where possible, that sufficient materials are available on-site for rehabilitation and address how slopes and final elevations are to be achieved upon completion of extraction activities.

If the site plan does not address the importation of material and the licensee/permittee wishes to bring material on-site, provided that there is insufficient topsoil and/or overburden to create the necessary slopes as defined on the site plan, a minor amendment should be approved to allow this activity. The onus is on the licensee/permittee to demonstrate to MNR that material is lacking on the site to facilitate rehabilitation.

If the site plan has been approved to backfill the entire site or a portion of the site to the original grade, the licensee/permittee has the authority, provided that the material meets Table 1 (with the exceptions for SAR and EC criteria as described above) and proper monitoring or sampling of truck loads or the source occurs. However, alternative criteria may be acceptable on a case-by-case basis with prior approval.

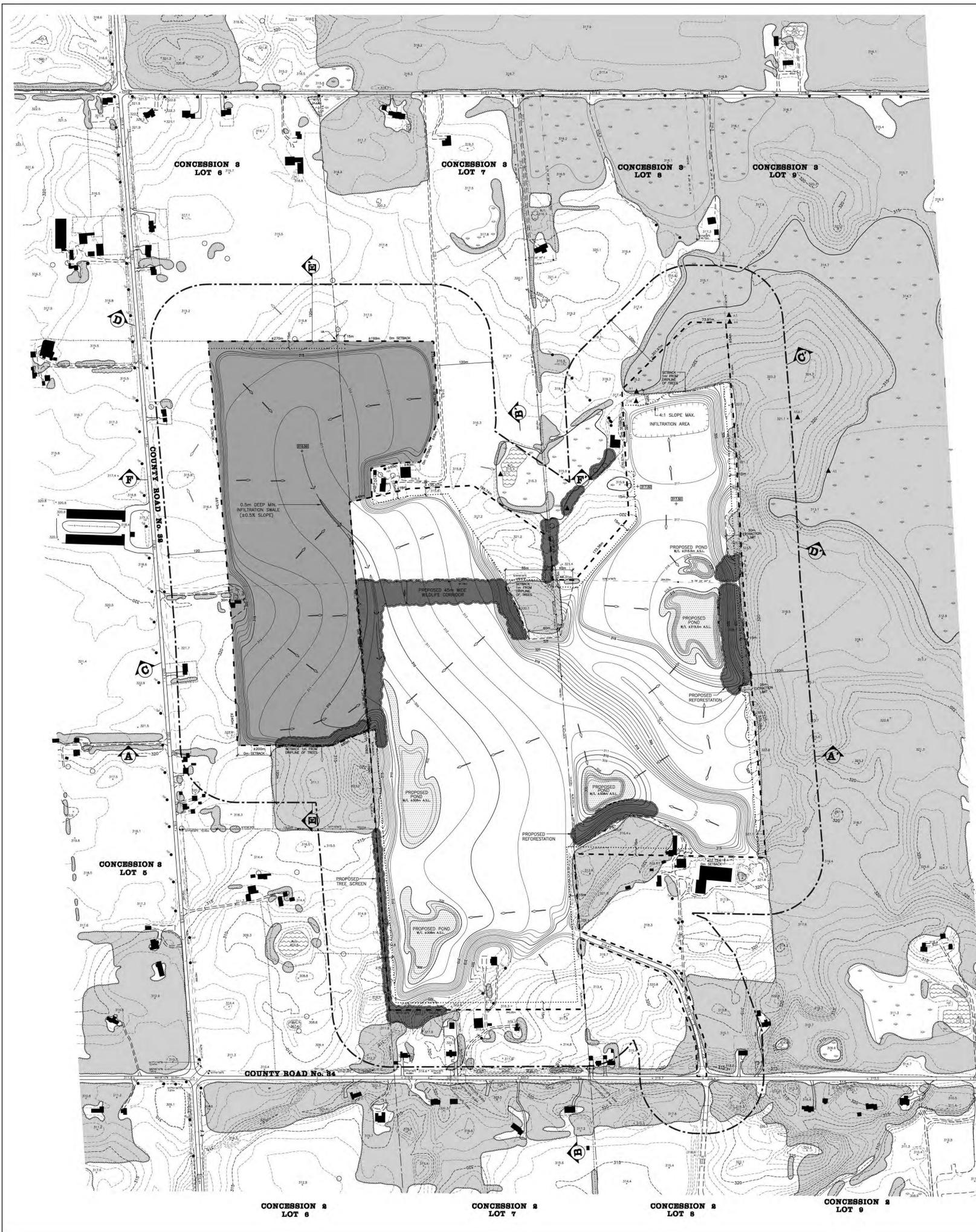
If a licensee/permittee has no prior approval and wishes to backfill the entire site or a portion of the site to the original grade, this change in rehabilitation should be processed as a major site plan amendment (see A.R. 2.03.00 and A.R. 4.04.00). The importation of material to facilitate rehabilitation must be described on the site plan.

#### **Sample Wording for Site Plan Conditions**

1. Clean inert fill (e.g. topsoil, overburden) may be imported to facilitate pit/quarry rehabilitation. Only sufficient material to create a 3:1 / 2:1 (horizontal: vertical) grade may be imported. At the request of MNR, the licensee/permittee will conduct random sampling of the imported material to ensure that it meets the Ministry of the Environment's (MOE) criteria under Table 1 of MOE's "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the *Environmental Protection Act*". Sampling results will be provided to MNR upon request.
2. Notwithstanding Condition 1, where the imported material is not being placed within 1.5 metres of the surface, the criteria under Table 1 for sodium adsorption ratio and electrical conductivity do not have to be met.

OR

3. Clean inert fill may be imported to facilitate the establishment of 3:1 / 2:1 (horizontal: vertical) slopes on the pit/quarry faces. The licensee/permittee must ensure that the material is tested at the source, before it is deposited on-site, to ensure that the material meets the Ministry of the Environment's (MOE) criteria under Table 1 of MOE's Soils, Ground Water and Sediment Standards for use under Part XV.1 of the *Environmental Protection Act*. Sampling results will be provided to MNR upon request.
4. Notwithstanding Condition 1, where the imported material is not being placed within 1.5 metres of the surface, the criteria under Table 1 for sodium adsorption ratio and electrical conductivity do not have to be met.



### LEGEND

- BOUNDARY OF EXISTING LICENCE AREA
- - - BOUNDARY OF LICENCE EXTENSION
- ..... REGULATORY SETBACK LINE
- LIMIT OF EXTRACTION
- 120m BOUNDARY LINE
- PROPERTY LINE
- CONCESSION/ LOT LINE

- EXISTING VEGETATION
- EXISTING SURFACE WATER
- 5m CONTOUR LINE
- 1m CONTOUR LINE
- SPOT ELEVATION
- PROPOSED 5m CONTOUR LINE
- PROPOSED 1m CONTOUR LINE
- PROPOSED SPOT ELEVATION
- PROPOSED VEGETATION
- PROPOSED POND
- BUILDING
- EXISTING HYDRO POLE
- RAILWAY
- GATE
- DIRECTION OF SURFACE WATER DRAINAGE
- SMALL STREAM, AGRICULTURAL DITCH/ SWALE
- FENCE
- PIEZOMETER

### NOTES

- TOPOGRAPHIC INFORMATION WAS PREPARED THROUGH (AIR PHOTO INTERPRETATION BY PHOTOMAP AIR SURVEYS, LIMITED, TORONTO ON, DATED FEBRUARY 4, 1997, WITH GROUND CONTROL PROVIDED BY VAN HARTEN SURVEYING LTD. GEODESIC ELEVATIONS ARE REFERENCED TO THE CORNER OF COUNTY ROADS 34 AND 52. INFORMATION UPDATED BY BASE MAPPING COMPANY APRIL, 2002 THROUGH AIR PHOTO INTERPRETATION (CIVIC LICENSE # 2001).
- REFER TO DRAWING 1 OF 5 FOR EXISTING FEATURES.  
REFER TO DRAWING 2 OF 5 FOR OPERATIONS PLAN, PHASING DIAGRAMS AND NOTES.  
REFER TO DRAWING 3 OF 5 FOR TECHNICAL RECOMMENDATIONS AND DETAILS.  
REFER TO DRAWING 4 OF 5 FOR SECTIONS.  
REFER TO DRAWING 5 OF 5 FOR REHABILITATION PLAN AND NOTES.
- REHABILITATION OF THE PROPERTY INCLUDES THE CREATION OF FOUR PONDS, FORESTED CORRIDORS, AGRICULTURAL LAND AND WILDLIFE HABITAT.
- AREA CALCULATIONS
 

	EXISTING LICENCE	LICENCE EXTENSION	TOTAL
AREA OF LICENCE TO BE REHABILITATED	168.16 Ha	327.59 Ha	495.75 Ha
AREA OF LICENCE TO BE REHABILITATED TO AGRICULTURAL LAND	155.81 Ha	327.59 Ha	483.40 Ha
AREA OF LICENCE TO BE REHABILITATED TO PONDS (PONDS NOT TO EXCEED 8.22 Ha)	4.75 Ha	-	4.75 Ha
AREA OF LICENCE TO BE REHABILITATED TO FORESTED CORRIDORS AND WILDLIFE HABITAT	8.70 Ha	10.32 Ha	19.02 Ha
THREE PLANTINGS OUTSIDE OF LICENCE BOUNDARIES	-	-	10.89 Ha
- REHABILITATION OF SLOPES SHALL BE BY USING OVERBURDEN AND TOPSOIL FROM WITHIN THE LICENCED BOUNDARY. OVERBURDEN ON SIDE SLOPES AND RECREATIONAL AREAS SHALL BE A MINIMUM OF 200mm THICK AND TOPSOIL SHALL BE A MINIMUM OF 150mm THICK. SIDESLOPES AND RECREATIONAL AREAS SHALL BE SEEDING WITH THE FOLLOWING AT A RATE OF 125 KG/Ha:
 

10% BUCKWHEAT	10% TALL FESCUE
10% ALFALFA	10% CHEERING RED FESCUE
10% WHITE CLOVER	10% PERENNIAL RYE
10% ANNUAL RYE	

 PLEASE REFER TO DRAWING 3 OF 5, DETAILS, FOR MORE INFORMATION ON BACKFILLING AND CREATION OF REHABILITATED SLOPES.
- AGRICULTURAL AREA MAY BE REHABILITATED AS FOLLOWS:
  - DEEP RIPPING TO ELIMINATE COMPACTION
  - SPREADING OVERBURDEN AND ROUGH GRADING
  - REMOVAL OF STONES LARGER THAN 100mm
  - SPREADING A MINIMUM OF 200mm OF TOPSOIL AND FINE GRAING
  - UPON COMPLETION OF THE TOPSOIL INSTALLATION AND FINE GRADING THE LAND OWNER SHALL SEED AREAS TO A CROP APPROPRIATE TO THEIR INDIVIDUAL AGRICULTURAL OPERATIONS.
  - TOPSOIL OR OVERBURDEN (SERT MATERIAL) MAY BE IMPORTED TO IMPROVE REHABILITATION BY AUGMENTING TOPSOIL THICKNESS OR BY MAKING SIDE SLOPES GENTLER
- REHABILITATION OF PONDS SHALL INCLUDE SHALLOW AREAS FOR WEED GROWTH AND PRODUCTIVITY, AND DEEP CELLS TO CREATE COLD WATER ZONES.  
UNDERWATER HABITAT ENHANCEMENT WILL USE LOGS, STUMPS, AND WASTE ROCK REFER TO SHORELINE HABITAT DETAIL DRAWING 3 OF 5, DETAILS. THE PONDS WILL BE SEEDING WITH SUBMERGED AND EMERGENT VEGETATION IN SHALLOW AREAS.
- ALL SURFACE DRAINAGE WILL BE DIRECTED TOWARDS THE PONDS OR INFILTRATION AREAS, THERE WILL BE NO OFFSITE SURFACE DRAINAGE.
- THE FOLLOWING VEGETATION WILL BE PLANTED ON SIDE SLOPES:
  - WOODY VEGETATION: PLANTED IN CLUSTERS AS SHOWN SHALL INCLUDE:
    - 3 YEAR OLD SEEDLINGS - WHITE PINE, RED PINE, WHITE CEDAR & LARCH
    - 10mm CALIPER, #1.5m HIGH - BALSAM POPLAR, BLACK ASH, SILVER MAPLE, WILLOW & BLACK CHERRY
    - 3 YEAR OLD PLANTS, SPACED AT 2.1m (7ft) O.C. - DOGWOOD, SLMAC AND ALDER
  - WEEDBEDS/EMERGENT VEGETATION: -SEEDING WITHIN THE SHALLOW ZONE (0 TO 0.5m DEEP)
    - NARROWLEAF CATALPA, SWEET FLAG AND NORTHERN ARROWHEAD.
  - SUBMERGED VEGETATION: -SEEDING WITHIN THE DEEP WATER ZONE (0.5 TO 1.0m DEEP)
    - NORTHERN WATERLILY, COYONIA AND BLUNTLEAF PONDWEED.
- ALL VEGETATION PLANTED DURING THE OPERATION OF THIS LICENCE WILL BE MAINTAINED IN A HEALTHY VIGOROUS GROWING CONDITION. DEAD PLANTS WITHIN THE TREE SCREEN WILL BE REPLACED WITHIN TWO YEARS. PLANT SPECIES AND SPACING ARE SUBJECT TO MODIFICATION DUE TO AVAILABILITY AND SITE CONDITIONS.
- ALL BUILDINGS, EQUIPMENT AND MACHINERY ASSOCIATED WITH THE EXTRACTION OPERATIONS WILL BE REMOVED UPON COMPLETION OF EXTRACTION. RESIDENTIAL AND FARM BUILDINGS AND FARMING EQUIPMENT WILL REMAIN.
- A PIEZOMETER SHALL BE INSTALLED DURING PHASE "A" OPERATIONS (AS SHOWN) AT ±319m a.s.l. FINAL REHABILITATED GRADE IN THE ADJACENT EXTRACTION AREA SHALL BE A MINIMUM OF 0.5m ABOVE THE ESTABLISHED WATER TABLE (EXTRACTION AREA).
- IT IS ANTICIPATED THAT THE PIEZOMETER ELEVATIONS ACROSS THE EXISTING LICENCE AND CONCESSION AREA WILL REMAIN RELATIVELY UNCHANGED. INFORMATION WAS OBTAINED FROM HYDROLOGICAL ASSESSMENTS COMPLETED BY TERRACON INVESTIGATIONS DATED AUGUST 1997, MAY 4, 1998 AND MAY 20, 1998 AND BY BLACKBURN HYDROLOGIST INC. DECEMBER 2002.

NO.	DATE	REVISIONS	OWNER	H.A.	D.M.A.K.	NO.	DATE	REVISIONS	OWNER	H.A.	D.M.A.K.
2.	MAR. '03	AS PER OWNER COMMENTS									
1.	FEB. '03	AS PER OWNER COMMENTS									

**Pre Licence Review**      **Site Plan Amendments**

**Harrington and Hoyle Ltd.**  
 LANDSCAPE ARCHITECTS  
 91 Anderson Avenue, Unit #2  
 Markham, Ontario, L6E 1A5  
 Telephone: (905) 294-8282  
 Fax: (905) 294-7823  
 Office in Markham and Cambridge

**Project Name**  
**CAPITAL CAPITAL PAVING INC.**  
**Wellington Pit #5 and Extension**  
**Licence Number 20085**  
 PART LOTS 6, 7 & 8, CONCESSION 8  
 TOWNSHIP OF PUSLUNCH, WELLINGTON COUNTY

**Scale**  
 1:3000  
 0 10 20 30 40 50 60 70 80 90 100 110 120m

**Drawing Status**  
**PRELIMINARY FOR DISCUSSION**

**Drawn** Checked Issue Date Project Number  
**R.M. G.D.H./ B.J.**                **02-06**

**Drawing Title**      **Drawing Number**  
**REHABILITATION PLAN**      **5 OF 5**

FILE NAME: 02-06-COMP-00085-5.DWG  
 PLOT DATE: MARCH 20, 2003

# **Appendix F**

## **Tracking Record Form**







# **Appendix G**

**Inspection and Maintenance Form**

**WEEKLY INSPECTION FORM**  
**SOIL AND SURFACE WATER MANAGEMENT**  
**PLAN 2374868 Ontario Inc**  
**6678 Wellington Road 34, Cambridge, Ontario**

**Inspection Date/Time:**

**Weather:**  
**Site Conditions:**

	Item	Condition Acceptable (Y/N)?	Corrective Action Required (Y/N)?	Comments and Corrective Action (What, Date, Time)
<b>General</b>				
1.	Site Security - Any trespasses; Cameras in good working order?			
2.	Site - Roadways, parking areas, and swales are adequately stabilized and soil or debris has not accumulated?			
3.	Site Nuisances - Wind blown litter at a minimum, no odour or dust concerns, mud not tracked onto public roads, no issues with vector and vermin?			
<b>Soil Stockpile Areas</b>				
4.	Stockpiled materials are managed to prevent significant erosion and sediment runoff?			
5.	Stockpiles are separated to allow sampling?			
<b>Surface Water &amp; Drainage</b>				
6.	Surface water is controlled and drains into applicable pond or swales (i.e., no overflow to other areas of the Site)? If not, explain:			
7.	Vegetative swales and pond are in good condition, no significant erosion and no significant build up of sediment or debris? If not, explain:			
8.	There are no signs of petroleum or chemical sheens, spills, or releases on surface water? If evidence, explain and report immediately:			
<b>Noise</b>				
9.	No major issues?			
<b>Dust</b>				
10.	No major issues?			

**Inspection completed by:**

**Signature:**

**Title:**

# **Appendix H**

**Training Form**



# **Appendix I**

## **Environmental Emergency and Contingency Plan**

# Environmental Emergency and Contingency Plan

## 2374868 Ontario Inc.

### 1. Environmental Emergency and Contingency Plan

Environmental Emergency and Contingency Plan (E2C) outlines the prevention of, preparedness for, response to, and recovery from an environmental emergency. The E2C Plan will be described in this section of the report. A copy of this report will be provided to the local municipality and the local fire department.

The E2C Plan contains a notification protocol with names and telephone numbers of person to be contacted, including persons responsible for the Site, the MECP's District Office and Spills Action Centre, the local municipal Fire Department, the local Municipality, the local Medical Officer of Health, and the Ministry of Labour. Their associated phone numbers are as follows:

Fire, Police, Ambulance	911 or 0
Owner of Facility, Frank Ertl	519 658 5023
MECP Spills Action Centre (SAC)	1 800 268 6060
Municipality of Waterloo	519 575 4400
Medical Officer of Health- Public Health Waterloo	519 575 4608
Ministry of Labour	416 326 7600

The E2C Plan will also provide an organized set of procedures for responding to unexpected Site Conditions.

Operators working at the site have a cellular phone to use in the event of an emergency. There is an air horn located on site, which would be used to signal an emergency to staff.

#### 1.1 Spills

As per the above, the Facility will accept only hydrovac liquid soil. If liquid soil is inadvertently released at the Site outside of the Soil Management Area, then the material is vacuumed up and/or excavated and placed in the Soil Management Area.

Vehicle and earth moving equipment may occasionally have fuel and oil spills. These types of spills are expected to be infrequent, involve only small quantities and be readily contained and cleaned up. Fuel and oil material spills, upsets, and fires should be reported to the MECP's Spill Action Centre or local Fire Department.

A spill kit will be available on site at all time. It will be located in an area accessible to all staff members. The spill kits in the building will be inspected as part of the monthly health and safety inspection. Missing, lost, or used kits will be replaced.

All hydrovac trucks also are equipped with spill kits. A spill kit is available and is located in an area accessible to all staff. The spill kit will be regularly inspected and missing, lost or used kits will be replaced.

## **1.2 Fire**

The building is primarily constructed of concrete and steel materials.

Fire extinguishers will be located at each corner of the building and on every piece of mobile equipment. Fire extinguishers are inspected monthly and recharged annually in accordance with the Ontario Building Code. If a fire in the building cannot be easily extinguished with the available fire extinguishers, the building will be evacuated, and the fire department notified.

The burning of any material at the Site is prohibited. Facility employees will recognize fires by detecting elevated temperatures, smoke, smell and/or open flame. In case of fire the following steps will be taken:

- Move to an isolated area or muster point
- Call 911 or 0
- Sound the fire alarm and attempt to shut down any equipment if possible, to do safety
- Provide First Aid as needed
- Attempt to extinguish the fire if possible, to do safety

## **1.3 Severe Storms**

Severe storms may include intense rainfall, extreme winds, electrical storms, or large snowfalls. Before and during such events, Site operations will be planned to be reduced or cease and personnel will take shelter if the storm is severe enough to cause unsafe conditions.

During storm events employees will stop work if they cannot work safely. Management will advise of additional actions and when it is safe to work again.

## **1.4 Medical Emergencies**

Personnel injury could occur at the Facility. If there is an emergency, first aid will be given onsite by trained staff and the employee transported to a clinic or hospital. An Ambulance can be called at 911.

## **1.5 Closure of Waste Disposal Sites**

Waste that does not meet the criteria of the Site will be directly sent to a licensed MECP disposal or treatment facility. If the designated waste disposal facility is closed, the Facility will make alternate arrangements with another licensed MECP disposal or treatment facility. If an alternate disposal option cannot be found, the material will be offloaded at the job site.

Material that does not meet Table 1 that is currently found on Site will also to a licensed MECP disposal or treatment facility. If the designated facility is closed, the material will remain on Site until the disposal facility is open or an alternate licenses MECP disposal facility will be found.

# **Appendix J**

## **Complaint Procedure Form**

Complaint Procedure Form  
2374868 Ontario Inc.  
6678 Wellington Road 34, Cambridge, Ontario

<b><u>Complainant Information</u></b>	
Date & Time	
Name	
Address	
E-mail	
Phone Number	
<b><u>Complaint Information</u></b>	
Date & Time	
Location	
Complaint Taken By	
Issue or Incident	
Description of Incident	
Corrective Action	



## Loden Ozaki

---

**From:** Dan Puddephatt  
**Sent:** Friday, July 5, 2024 10:56 AM  
**To:** Grande, Pamela (MECP); Armour, Lynnette (MECP)  
**Cc:** Fred Taylor; frankertl@live.com; Ben Kempel  
**Subject:** RE: 11210029- Action Items: Call to discuss questions RE: ECA for Badger Conestoga Inc. - HIA Revision No. 1

Hi there Lynnette and Pamela.

I have found the following formatting errors on Table 4.3 of the HIA (pdf pages 42 to 83):

- Some samples were bordered with a red box when they should not have been. The red box in Table 4.3 indicates that a parameter exceeds the Table 2 Standard; however, there have been no Table 2 Standards exceedances.
- The column listing the units of measurements was not populated
- The column heading indicating Table 2 Standards was above the PWQO values
- The column with the Table 2 Standards was missing a column heading
- There also were four selenium values that had unit conversion errors that have now been corrected

We have corrected this table, accordingly.

There were no changes to the text or interpretation of the results.

I apologize for these errors.

The revised report can be downloaded from the link, below.

<https://ghd.sendthisfile.com/bp7dzPusxmXZOKauk6uh4Uv4>

As always, if you have any questions, please feel free to reach out.

**Dan Puddephatt (he/him) | A GHD Associate**

**M.Sc. P.Geo. (Limited)**

Hydrogeology Practice Leader

### GHD

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D 519 340 3741 M 519 741 7919 F 519 884 0525 E [dan.puddephatt@ghd.com](mailto:dan.puddephatt@ghd.com)

**GHD FIRST Emergency Spill Hotline +1 800 679 9082**

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Connect



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---

**From:** Dan Puddephatt

**Sent:** Tuesday, June 25, 2024 4:12 PM

**To:** 'Grande, Pamela (MECP)' <Pamela.Grande@ontario.ca>

**Cc:** Armour, Lynnette (MECP) <Lynnette.Armour@ontario.ca>; Fred Taylor <Fred.Taylor@ghd.com>; frankertl@live.com; Ben Kempel <Ben.Kempel@ghd.com>

**Subject:** 11210029- Action Items: Call to discuss questions RE: ECA for Badger Conestoga Inc. - HIA Revision No. 1

Hi there Pamela and Lynnette.

I hope you are doing well.

As discussed last week, please see the attached Proposed Trigger Response Plan. During our call, Fred mentioned that our clients have received ECAs at comparable hydrovac locations. I have attached two example ECAs in a zipped folder that I have attached. ECA No. A-500-1188155825 is for the same owner/operator as 2374868 Ontario Inc. (Badger Conestoga Inc., the Applicant). I have also attached the Design and Operations Report, as you requested. I have reduced the file size for transfer. Please let me know if there are any issues with the legibility of figures. I can also use our large-file-transfer for the original, if needed. Please feel free to reach out if you have any questions. All the best.

**Dan Puddephatt (he/him) | A GHD Associate**  
**M.Sc. P.Geo. (Limited)**  
Hydrogeology Practice Leader - Waterloo

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D 519 340 3741 M 519 741 7919 F 519 884 0525 E [dan.puddephatt@ghd.com](mailto:dan.puddephatt@ghd.com)

**GHD FIRST Emergency Spill Hotline +1 800 679 9082**

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# Hydrogeological Impact Assessment Revision No. 2

**2374868 Ontario Inc.**

Badger Conestoga Inc.

31 March 2025

→ **The Power of Commitment**



<b>Project name</b>		Badger 2374868 Ont Inc-Permitting					
<b>Document title</b>		Hydrogeological Impact Assessment Revision No. 2   2374868 Ontario Inc.					
<b>Project number</b>		11210029-RPT-12					
<b>File name</b>		11210029-RPT-12-Hydrogeological Update 2025.docx					
<b>Status Code</b>	<b>Revision</b>	<b>Author</b>	<b>Reviewer</b>		<b>Approved for issue</b>		
			<b>Name</b>	<b>Signature</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
S4		Keegan Cleghorn  Loden Ozaki	Ben Kempel  Dan Puddephatt		Fred Taylor		March 31, 2025

**GHD Limited**

Contact: Ben Kempel, Science Leader | GHD

455 Phillip Street, Unit 100A

Waterloo, Ontario N2L 3X2, Canada

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# 1. Introduction

GHD was retained by 2374868 Ontario Inc. that operates under the name Badger Conestoga Inc. (Badger, the Applicant) to update a Hydrogeological Impact Assessment (HIA) that was previously prepared by GHD Limited (GHD) in July 2024 to support an application for an Environmental Compliance Approval (ECA) (Waste Processing). Following the submission of the HIA, the Ministry of Environment, Conservation and Parks (MECP) issued an ECA for Waste Processing for the Site under the ECA No. A-500-4277838045 and dated October 10, 2024. ECA No. A-500-4277838045 is presented in Appendix A. This update to the HIA is to present the environmental monitoring data and associated interpretations of that data for the previous year (2024) and historical data.

Badger operates a hydro-vacuuming (hydrovac) business on a portion of Lot 8, Concession 3 in Wellington County and consists of a 40 hectare property (the Property). The Property Boundary and Site/Operations Boundary are presented on a Site Location map on Figure 1.1. During pre-consultation for the ECA, the MECP requested that an HIA be completed for MECP's review prior to the application being submitted. GHD originally prepared and submitted an HIA to MECP in December 2020. The MECP provided review and comments on the HIA in a letter dated January 25, 2021 (MECP, 2021). On behalf of the Applicant, GHD provided responses to the MECP comments in a letter dated April 21, 2021 (GHD, 2021a). Based on the acceptance of the response to comments, MECP indicated that the ECA application could then be submitted, and the application was submitted in December 2021 (GHD, 2021b). Since that time, the Applicant has continued to conduct routine soil, surface water, and groundwater monitoring. The Applicant also has completed additional groundwater investigations. This HIA (Revision No. 2) has been prepared to update the July 2024 HIA (Revision No. 1) with the results of the additional groundwater and surface water investigations and provide up-to-date descriptions of the Site hydrogeological setting; and groundwater, and surface water quality conditions.

The HIA was undertaken through review of publicly available information and direct investigation of the Site through borehole advancement, monitoring well installations, static water level measurements, and groundwater quality sampling. Surface water quality from samples collected by the Applicant have also been reviewed to support the interpretations provided herein. This report includes a summary of the Site geological/hydrogeological conditions including the results of groundwater and surface water quality monitoring undertaken to date. A summary of the findings including conclusions concerning the suitability of the Site for hydrovac operations is included in Section 6. The recommended water monitoring and reporting program is described in Section 5.

## 1.1 Background

The Property is currently divided into two land use zones with the southern one third of the Property zoned as Agricultural (A) and the northern two thirds of the Property zoned as Extractive Industrial (EXI). The Site, which is located within the Property, is located on an approximate 31,000 square metre (m<sup>2</sup>) portion of the EXI zoned parcel and includes the operations necessary to support the hydrovac operations. A property zoning map with Site operational areas and monitoring network is provided with the Site Plan on Figure 1.2.

The Site receives a slurry of soil mixed with water (liquid soil) from hydrovac trucks operating at various sites throughout Southern Ontario. The water used for off-Site hydrovac operations is supplied by an on-Site well or municipal connections at locations near utility clearances by the hydrovac trucks. The hydrovac trucks collect the soil from utility, municipal, and commercial sites to ensure that utility strikes and damage do not occur to existing underground infrastructure during intrusive work. Clean liquid soils that are returned to the Site are placed in a stockpile area where the water drains off via gravity to the stormwater management pond. The dry soils are sampled for chemical analyses in accordance with current Excess Soil/similar hydrovac Waste ECA provisions and practice to confirm they are acceptable for use at receiving sites.

No hydrovac operations are conducted at sites with known soil or groundwater contaminants. Trucks which have inadvertently come in contact with suspected contaminated soils<sup>1</sup> are directly sent to an MECP-approved treatment or disposal facility and only return to the Site after all potentially contaminated liquid soils are removed.

## 1.2 Purpose of this report

The purpose of this report is to provide an update to the HIA, which was prepared by GHD in July of 2024. This report focuses on the refined and expanded understanding of hydrogeological conditions at the Site including additional data collected from ongoing groundwater and surface water monitoring programs and downgradient monitoring wells installed in 2023.

## 1.3 Limitations

*This report has been prepared by GHD for Badger Conestoga Inc. and may only be used and relied on by Badger Conestoga Inc. for the purpose agreed between GHD and Badger Conestoga Inc. as set out in section 1.2 of this report.*

*GHD otherwise disclaims responsibility to any person other than Badger Conestoga Inc. arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.*

*The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.*

*The opinions, conclusions, and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.*

*The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 1.4 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.*

### Accessibility of documents

*If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.*

*The opinions, conclusions and any recommendations in this report are based on information obtained from, and testing undertaken at or in connection with, specific sample points. Site conditions at other parts of the site may be different from the site conditions found at the specific sample points.*

*Investigations undertaken in respect of this report are constrained by the particular site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant site features and conditions may have been identified in this report.*

## 1.4 Assumptions

In accordance with the purpose presented in Section 1.2, this HIA Revision No. 2 provides an update to the previous HIA completed in April 2024. The key assumptions on which this HIA update is based includes:

- Data supplied by, or obtained from external sources are correct and accurate and reasonably suitable for the HIA
- Third party laboratory data was analyzed in accordance with their protocols and standard operating procedures (SOPs)

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<sup>1</sup> This can be determined by methods that include acquisition of new site information, visual inspection, and/or identification of odours indicative of potential contamination

## 2. Hydrogeological Assessment Requirements, Objectives and Scope

### 2.1 Requirements and Objectives

The MECP typically requires that certain types of Waste ECA applicants complete an HIA in support of ECA applications to evaluate the potential impact to groundwater resources (i.e., the Groundwater Impact Assessment requirement of the ECA application process). The MECP also requires that the guide to applying for an ECA under Part C: Supporting Documentation and Technical Requirements, Section 9 – Supporting Documentation (the ECA Guidance) be followed for the application and required assessments.

For ECAs, there is a requirement to assess the impacts of the current works or proposed works to the environment, including groundwater resources. Subsection 4.10.4 of the ECA Guidance describes the scope of work for an Environmental Impact Analysis, including a groundwater (hydrogeological) impact assessment. Subsection 5.4 describes the minimum requirements of the Hydrogeological Report (herein referred to as the HIA Report). Subsection 5.4 indicates that at a minimum the HIA must include:

- A description of site topography and drainage (see Sections 3.2.2 and 3.2.3, respectively)
- Soil characteristics and site stratigraphy (see Section 3.3)
- Groundwater conditions and flow (see Sections 4.1.1 and 3.4.1)
- An assessment of the potential impacts of leachate from the waste on the groundwater and surface water on areas of potential impact (see Section 4)

The Township of Puslinch is not serviced by Municipal water supply. Nearby residents rely on groundwater wells for potable drinking water supply. Therefore, the Applicant has completed an HIA considering the liquid soil (waste) processing and stormwater management operations at the Site and the potential for impact to groundwater receptors.

Soil, surface water, and groundwater sampling results have previously and continue to demonstrate that the Site operations have not impacted groundwater resources. Notwithstanding these findings, the Applicant has agreed to complete this HIA Revision No. 2 with expanded hydrogeological, groundwater, and surface water testing results to support the ECA application. This HIA, as defined by MECP requirements, includes the following components:

- A summary of the Site geological/hydrogeological conditions
- Depth to the water table
- Groundwater flow direction
- Hydraulic conductivity of the water table deposits
- Hydraulic gradients along and across the water table
- Identification of downgradient private water wells on-Site and off-Site
- Assessment of the potential for impact to groundwater receptors

The HIA was also completed considering the available Wellington County guidelines and Source Water Protection Plans.

### 2.2 Scope

The HIA's main purpose was to investigate the shallowest groundwater regime (first water-bearing unit or water table) around and downgradient of the Site operations because this is the groundwater bearing unit that would be most vulnerable to potential impacts from Site operations. It has been previously demonstrated that the deep groundwater supplies are not being impacted from Site operations because the two deep on-Site water supply wells (APW1 and AGW1) historically have demonstrated no evidence of Site-related impact.

To satisfy the requirements of the HIA the following additional tasks were completed as part of the scope:

- Installation of two additional monitoring wells, MW4-23 and MW5-23, downgradient of Site operations in June 2023 (MW4-23 and MW5-23). The wells were installed to depths between 14.94 metres (m) and 15.24 m below ground surface (bgs) to screen the water table (shallowest groundwater regime). MW4 23 and MW5 23 are located in suitable locations to detect potential impacts from Site activities in the unlikely situation that contaminating mass infiltrates into the water table aquifer and migrates beyond the Site/Operations area. Each monitoring well was constructed with a 3 m long, 5.1 cm diameter PVC well screen with a silica sand pack around the screen interval. The annular space above the sand pack was filled with bentonite and the well was completed with a lockable, above ground protective casing.
- Horizontal and vertical survey of eight monitoring wells in August 2023. The wells were surveyed for vertical control with respect to elevation in units of metres (m) above mean sea level (m AMSL).
- Hydraulic monitoring to establish the depth to the groundwater table and to calculate static groundwater elevations for the purpose of calculating hydraulic gradients and estimating groundwater flow directions.
- Collection of 10 rounds of groundwater samples (November 2020 to October 2024) at available<sup>2</sup> monitoring locations during that time. The groundwater samples were analyzed for selected general chemistry, metals, VOCs, SVOCs/PAHs, Petroleum Hydrocarbons (F1 to F4), and oil and grease.
- Hydraulic conductivity was estimated by completing single well response tests (slug tests) in three monitoring wells.
- A desktop review and limited physical confirmation of a private well survey was completed in September 2020.
- Preparation of an HIA Revision No. 1 Report to document the geological and hydrogeological conditions and water quality with the ultimate purpose of evaluating potential impacts and risk to nearby groundwater users.
- Preparation of an HIA Revision No. 2 Report to document updates to the understanding of geological and hydrogeological conditions and water quality with the ultimate purpose of evaluating potential impacts and risk to nearby groundwater users.

### **3. Summary of the Regional Setting, Hydrological, Geological, and Hydrogeological Conditions**

A review of the regional setting, hydrological, geological, hydrogeological, and groundwater quality conditions was conducted for the HIA. The details of the regional setting, hydrological, geological, hydrogeological, and groundwater quality conditions are presented in GHD (2020) and *Stormwater Management Plan* (GHD, 2022). The findings from these reports have been supplemented with key data obtained from provincial agencies, government and regulatory bodies, and Site-specific investigations, all of which are summarized, below.

#### **3.1 Regional Setting**

The Site is located on Wellington Road 34, east of Wellington Road 32, and north of Highway 401, in Wellington County (see Figure 1.1).

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<sup>2</sup> For example, when there has been sufficient water in the well to complete sampling

Two water supply wells exist on the Property. One supply well (Applicant's Well or APW1) is located in the EX1-zoned portion of the Property, which is primarily used to fill up hydrovac trucks with water for operations, when needed<sup>3</sup>. The second well (Agricultural Well or AGW1) is located in the Agricultural-zoned portion of the property.

The Property is primarily used for agricultural, including the agricultural-zoned parcel and the EX-1 zoned parcel which is undergoing rehabilitation in accordance with an MNRF-approved Rehabilitation Plan. The surrounding area is rural with small settlements, agricultural land, and an existing aggregate extraction operation immediately to the west of the Property (Capital Paving property).

The regional policy setting and physiographic, geological, and hydrogeological conditions near the Site are presented in the following sections.

### 3.1.1 Regional Policy Setting

The County of Wellington Official Plan (County of Wellington, 2024) is a legal document that provides direction on how lands are to be used within the County of Wellington (the County), which includes the Township. The official plan (OP) provides policy direction on several key considerations for assessing potential hydrogeological impacts that are the primary interest of this HIA. These are described in more detail in the following sections.

#### **Greenlands System**

The Greenlands System is a composite of many natural heritage features, flood prone areas, and hazardous lands. The Greenlands System is intended to address the interactions between natural heritage features and groundwater, surface water, and land areas. Figure 3.1 shows the Greenlands System features near the Site. These include the Oil Well Bog Little Tract Area of Natural and Scientific Interest (ANSI) east of the Site and wetlands located east and north of the Site. These ANSI and wetlands are greenlands and core greenlands, respectively, under the County OP (see, for example, Schedule B7 of the OP).

#### **Water Resources Policy Direction**

The County's OP notes that groundwater resources are not confined to the Greenland system and that these resources need to be protected as an essential resource to ensure that operations do not result in any of the following:

- Negative impacts on groundwater recharge or discharge
- Impairment of groundwater or surface water quality
- Negative impacts on municipal groundwater supply

The County has implemented a Policy Direction with the stated purpose of promoting public health, maintaining urban and rural water supplies, agriculture production, and maintenance of the Greenland System.

#### **Source Water Protection**

Some aquifers are identified as highly vulnerable [highly vulnerable aquifers (HVAs)] so that specific policy protections can be implemented to protect municipal groundwater supply. HVAs are specified based on factors that include depth to the aquifer, hydraulic conductivity, and the composition of the aquifer. The Grand River Conservation Authority (GRCA) provides information delineating HVAs through the Grand River Information Network (GRIN), based on the technical studies prepared for the Sourcewater Protection Plan. The Site is not situated upon an HVA. Figure 3.2 shows the location of the nearest highly vulnerable aquifer, which is situated approximately 700 m south of the Site/Operations boundary.

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<sup>3</sup> As described in Section 1.1 water used for off-Site hydrovac operations can be supplied by municipal connections at locations near the utility clearances by hydrovac trucks.

Within the County, other vulnerable areas can include the following:

- Surface water intake protection zones (IPZs),
- Wellhead protection areas (WHPAs), and
- Issue contributing areas (ICAs)

There are no surface water intakes near the Site and therefore no IPZs. The other two vulnerable areas within the county are defined and described, as follows.

WHPAs are the land areas around wellheads that contribute to the groundwater flow system that supplies groundwater to a municipal supply well. These land areas are categorized based on the imminence of a potential threat and are defined as follows:

- **WHPA-A:** is a 100 m radius around the wellhead
- **WHPA-B:** is the land area outside of WHPA-A that can contribute water and potential contamination to the wellhead within 2 years (i.e., 2-year time of travel)
- **WHPA-C:** is the land area outside of WHPA-B that can contribute water and potential contamination to the wellhead within 5 years (i.e., 5-year time of travel)
- **WHPA-D:** is the land area outside of WHPA-C that can contribute water and potential contamination to the wellhead within 25 years (i.e., 25-year time of travel)
- **WHPA-E:** is the vulnerable area of groundwater supply that is under direct influence of surface water and is calculated based on a two hour travel time of surface water to the wellhead

Figure 3.2 shows the locations of WHPAs near the Site. As illustrated on Figure 3.2, the Site is situated in WHPA-Ds. As described in the OP, significant drinking water threat policies are applicable to WHPAs-A, -B, -C, and -E. There are no significant drinking water threat policies in the Grand River Source Protection Plan [Lake Erie Source Protection Committee (LERSPC), 2022] that are associated with WHPA-Ds.

ICAs are areas within vulnerable areas, such as WHPAs, where existing or trending concentrations of a contaminating parameter or pathogen at a municipal well would result in the deterioration of the quality of water for use as a source of drinking water. Figure 3.3 shows the ICAs in the Township, reproduced from Schedule C7 of the OP (County of Wellington, 2024). Figure 3.3 shows that the Site is not located in an ICA.

## Paris and Galt Moraine Policy Area

Figure 3.3 shows that the Site is situated in the Paris Galt Moraine Policy Area. The policies associated with the Paris Galt Moraine Policy Area are intended to protect the processes and features of the moraine to maintain, and where possible, restore and enhance groundwater and surface water resources; and promote stewardship activities on the moraine that maintain, restore, and enhance groundwater and surface water resources. The processes and features of the moraine include:

- Groundwater recharge,
- Groundwater storage,
- Surface water detention,
- Groundwater potential,
- Baseflow to streams,
- Springs, and
- Watershed divides for groundwater and surface water

The manner in which the OP prescribes the maintenance of these processes and features is through the following policy direction.

Large-scale development proposals (i.e., intensive recreation, mineral aggregate operations, new rural employment area designations, and urban boundary expansions) must demonstrate that groundwater and surface water functions will be maintained, and where possible, restored and enhanced.

Small-scale development proposals that do not rely on significant site alterations are not required to demonstrate protection of the moraines. Where planning approvals for small-scale developments are needed, best practices for alteration will be required to reduce or eliminate cut and fill activities that would fill in land surface depressions. The Site is not filling land surface depressions.

Agriculture is an accepted and supported use of land under the Paris and Galt Moraine Policy Area policy directions.

## 3.2 Hydrological Conditions

The hydrological conditions of the Site are affected by regional physiography, topography, and surface water features. The following sections provide brief overviews of the regional physiography, topography, and surface water features.

### 3.2.1 Physiographic Conditions

The regional physiography and distribution of unconsolidated sediments are mostly the result of glacial and deglacial activity that took place in the late Wisconsinan substage of the Pleistocene Epoch, which ended approximately 10,000 years ago (Chapman and Putnam, 1984). The glacial and deglacial activity in this area have created subsurface conditions that can be very variable over short distances.

The most prominent glacial features in the area are till moraines and spillways, as shown on Figure 3.4. The Property is located within a till moraine surrounded by spillways. The regional till moraines are classified as part of the Horseshoe Moraines physiographic region, and in particular the Paris and Galt moraines (Chapman and Putnam, 1984). The Paris and Galt moraine region stretches approximately 130 kilometres (km) from Caledon to Lake Erie, is upwards of 11 km in width, and has relief of upwards of 30 m. The moraines are surficial ridges that provide topographic relief for the headwaters of many streams within the Credit River and Grand River watersheds (Russell et al., 2013).

### 3.2.2 Topographic Conditions

The regional topography around the Site is characterized as rolling to hummocky with localized hills and valleys and ranges from approximately 310 to 330 m AMSL (MNRF NRVIS, 2015). Topography near the Site is presented on Figure 1.1, which shows ridges and depressions near the Site. Regionally, enclosed topographic depressions often support ponds and wetlands. There is a northward trending ridge that approximately aligns with the north half of the eastern property boundary. This ridge directs surface water runoff in towards the Site/operations boundary and away from the Oil Well Bog Little Tract ANSI providing a surface water divide between the two areas.

### 3.2.3 Surface Water Conditions

The regional area is near Irish Creek which is in the Grand River watershed (WESA, 2005). The Grand River watershed is ultimately part of the Lake Erie drainage basin. The Grand River is located approximately 5 km west of the Site. The Site is within an area of low runoff potential as shown on Figure 3.5. The location of Irish Creek is shown on Figures 3.5 and 3.6. It is about 300 m southeast of the southern part of the Property and about 600 m southeast of the Site operations at its closest point.

Drainage of precipitation from the Site is primarily via infiltration into the groundwater flow system with little surface water runoff. Due to the prevalence of sand and gravel deposits in the shallow overburden and a depth to groundwater of 6 to 11 m or greater, precipitation readily infiltrates into the ground. This observation is consistent with reports from Site operations staff. Surface water that does not infiltrate will either evapotranspire or runoff along the Site drainage features.

The Site area drainage patterns and storm water management (SWM) features are presented on Figure 3.7. These features consist of a vegetated swale (with an approximate surface area of 1,700 m<sup>2</sup>) and SWM pond west of the Site/operations boundary. The eastern portion of the Site (i.e., Catchment A101) discharges overland towards the vegetated swale and runoff is conveyed to the SWM pond. The remaining area, Catchment A103, discharges directly via sheet flow into the SWM pond. The on-Site SWM pond is considered to be a wet pond with normal water levels at approximately 309 m AMSL. There are no direct point source discharges of stormwater or outfalls from the Site to off-Site areas.

The property drainage outside of the Site/operations boundary is not connected to the Site drainage features. The majority of the Property drains via sheet flow either to a second pond located in the northern area of the Property, or to lower lying areas of the Property. There are no direct point source discharges of stormwater or outfalls from the Property to off-Site areas. There is some minor sheet flow runoff from the Property at the perimeter Property boundaries.

GHD (2022) determined that the on-Site stormwater features have sufficient capacity to capture, convey, and mitigate the stormwater runoff from the operational areas, including additional areas served by the on-Site stormwater features.

## 3.3 Geological Conditions

### 3.3.1 Surficial Geology

The regional surficial geology is dominated by extensive ice-contact stratified deposits, surrounded by silty to sandy till, organic and gravel deposits as shown on Figure 3.8. Regionally, the overburden deposits are reported to be approximately 40 m in thickness (Miller, 1979).

The ice-contact stratified deposits consist of a mixture of sand, gravel, silt, sandy silt, and some clay/silt layers/seams. Beneath the ice-contact stratified deposits there are fine-grained deposits. These deposits are classified regionally as various drifts and tills which in turn are overlain by sand and gravel on top of the bedrock in places (Bajc and Shirota, 2007).

Near the Site, the surficial geology was characterized by evaluating the stratigraphic data from borehole logs and monitoring well data prepared in support of the HIA (MW01-20, MW02-20, MW03-20, MW4-23, MW5-23). The stratigraphic and instrumentation logs are provided in Appendix C. Other available data; MECP water well records for the two on-Site water supply wells AGW1 and APW1 and downgradient domestic supply wells 6702340, 6702342, 6704048, 6704353, 6708332, 6709690, 6712051, 6712758, 6714928, 6715336, 7106164, 7262884, 7262885, and 7357993; were also used to supplement the understanding of geological conditions. The locations of the downgradient domestic supply wells are presented on Figure 3.9. The MECP water well records are provided in Appendix B. The MECP water well records show that there is a 1 m to 17.5 m thick clay or silt layer between 5.5 m below ground surface (m bgs) and 32 m bgs.

The borehole/monitoring well stratigraphic data for the eight monitoring wells and the stratigraphic data from the two existing water supply wells within the Property were used to prepare three geological cross-sections: A-A' (northeast-southwest - through the Site/operations area), B-B' (northeast-southwest - through the southern portion of the property), and C-C' (west-east downgradient of the operations).

The locations of the geological cross-sections are shown on Figure 3.10. The Site geological cross sections are presented on Figures 3.11 to 3.13.

As illustrated on Figures 3.11 through 3.13, the geological conditions consist primarily of coarse-grained overburden deposits (sand and/or gravel) with some localized areas of finer grained materials (silt and clay). Bedrock was not encountered in the borehole locations investigated for the purposes of this HIA. The estimated depth to bedrock at each of the locations investigated is indicated on Figures 3.11 through 3.13 based on top of bedrock mapping provided by the Ontario Geologic Survey (Gao et al., 2006) and ground surface elevations taken from Site-specific survey data.

### 3.3.2 Bedrock Geology

Regionally bedrock is at an elevation of approximately 285 to 295 m AMSL, or approximately 40 m below ground surface (bgs) (Miller et al. 1979) (Karrow, 1987). The bedrock is the Guelph Formation, as shown on Figure 3.14.

The Guelph Formation is an Upper Silurian-aged, massive and thick-bedded brown and grey limestone/dolostone and trends to the northwest and has a gentle dip to the southwest (Armstrong and Dodge, 2007).

## 3.4 Hydrogeological Conditions

### 3.4.1 Aquifers and Hydrogeological Properties

For the purposes of the HIA, the aquifer units are simplified into three major units including, in descending stratigraphic order: an upper water table aquifer, a deeper permeable sand and gravel aquifer, and a bedrock aquifer. The hydraulic properties of these aquifers near the Site are summarized as follows:

#### 3.4.1.1 Upper Water Table Aquifer

An upper water-bearing unit/unconfined aquifer/water table aquifer composed primarily of ice contact stratified sand, gravel, silt, and silty sand deposits exists at the Site. This aquifer is not locally significant in terms of water supply due to low yields. This water table unit is found at depths between 6 mbgs (near MW03-20) and 15 m bgs (near BH219).

Groundwater elevation information was prepared for the water table unit using hydraulic monitoring data collected between October 5, 2022 and October 25, 2024 (see Table 3.1). The groundwater elevation contours and depths to groundwater at individual well locations are shown on Figure 3.15 to 3.18 for February, May, August, and October 2024, respectively. As shown on these figures, groundwater generally flows to the west and south-southwest from a high at MW03-20 to downgradient locations at MW05-23 and MW04-23. The water table elevations range from approximately 317 m AMSL to 307 m AMSL and the average horizontal hydraulic gradient is 0.02 metres of head loss per metre along the groundwater flow path (m/m).

The hydraulic conductivity values of the ice-contact stratified deposits, which comprise the water table unit are variable, as summarized in Table 3.2. The hydraulic conductivity ranges between  $2.4 \times 10^{-5}$  centimetres per second (cm/s) [0.02 metres per day (m/day)] to  $9.1 \times 10^{-3}$  cm/s (7.9 m/day) based on single well response test (SWRT) data collected on December 1, 2020, from monitoring wells MW1-20, MW2-20, and MW3-20.

SWRTs were completed by inducing displacement of the water level in the monitoring well and measuring the rate at which the water level recovered. The change in water levels during the tests was monitored at regular intervals both manually and electronically using datalogging pressure transducers. Hydraulic conductivity estimates were calculated from time-displacement data using the Aqtesolv™ software package and the Bouwer-Rice solution for unconfined aquifers. The Bouwer-Rice solution is based on an empirical relationship describing the water level response in an unconfined aquifer due to the injection or withdrawal of water (or other displacement method) from a well. The solution calculates the hydraulic conductivity of an unconfined aquifer based on time-displacement relationship measured during SWRTs.

The Aqtesolv™ solution outputs are provided in Appendix D. The geometric mean hydraulic conductivity is  $5.8 \times 10^{-4}$  cm/sec (0.5 m/day).

Groundwater flow velocities can be estimated based on Equation 3.1, below:

$$V_{GW} = \frac{K_i}{n_e} \quad \text{Equation 3.1}$$

Where:

$V_{GW}$  Is the groundwater velocity in units of m/day

$K$  Is the geometric mean hydraulic conductivity in units of m/day

$i$  Is the hydraulic gradient and is specified as 0.02 m/m

$n_e$  Is the effective porosity and can be estimated as 0.3 cubic metres of drainable aquifer per cubic metre of bulk aquifer volume ( $m^3/m^3$  or unitless), which is consistent with sandy deposits (Johnson, 1967).

Based on Equation 3.1 and the Site-specific hydrogeological parameters groundwater near the Site flows at an average rate of 0.033 m/day (12 m/year) towards the southwest.

### **3.4.1.2 Deeper Permeable Sand and Gravel Aquifer**

A deeper permeable sand and gravel aquifer under confined to semi-confined conditions is locally present in some downgradient areas and it is separated from the unconfined water table unit by an aquitard(s) comprised of clay and silt deposits. This deeper aquifer is a more significant source of water supply and the nearby downgradient domestic private wells use this aquifer for water supply (see, for example, Appendix B).

### **3.4.1.3 Bedrock Aquifer**

A bedrock aquifer underlies the overburden. The primary bedrock aquifer near the Site is located within the Guelph Formation and has a relatively high permeability and generally good groundwater yielding capacity. The top of the bedrock surface is at an elevation of approximately 285 to 295 m AMSL (Gao et al., 2006).

The Guelph Formation is a regional aquifer which is used by municipal wells in the City of Guelph and City of Cambridge for water supply.

## **3.4.2 Water Balance**

As described in Section 3.1.1, the Paris and Galt Moraine Policy area intends to preserve the processes and features of the moraine, which include, groundwater recharge, groundwater storage, surface water detention, groundwater potential, baseflow to streams, springs, and watershed divides for groundwater and surface water. This section outlines these processes and features as they relate to the Site and demonstrates how they are preserved by Site operations.

The following sections describe the components of a Site water balance based on an accounting of groundwater sources and sinks, where a groundwater source is any feature that contributes groundwater to the groundwater flow system and a groundwater sink is any feature that removes groundwater from the groundwater flow system. Each of these are described in detail in the following sections. In addition to the groundwater major sources and sinks, there also are groundwater/surface water interactions near the surface water features. As described in Section 3.2.3 there are ponds in low lying areas in the northern portion of the Site and a SWM feature west of the Site/Operations Area. These surface water features will exchange water with the underlying water bearing unit.

### **3.4.2.1 Groundwater Sources**

Near the Site/Operations Area there are three major sources of groundwater including infiltration of precipitation contributing recharge, infiltration of drained water from hydrovac trucks, and inflow from upgradient locations. These three classes of groundwater sources are discussed in greater detail in the following sections.

#### **3.4.2.1.1 Recharge through Infiltration of Precipitation**

Groundwater near the Site receives recharge from precipitation that occurs at a long-term average rate of 923 millimetres per year (mm/year) (Matrix Solutions, Inc., 2017). The amount of precipitation reaching the groundwater table is typically considered to range from approximately 10 to 40 percent of the average annual precipitation (Arnold et al., 2000; and Rushton and Ward, 1979). Figure 3.19 shows the distribution of recharge rates

near the Property based on information obtained from the GRCA (2016). Figure 3.19 shows that the average recharge volume is 28 m<sup>3</sup>/day over the Site/Operations Area and 386 m<sup>3</sup>/day over the Property Boundary. Area-weighted average recharge rates over the Site/Operations Area and Property Boundary are 380 mm/year and 357 mm/year, respectively. Substantial recharge events typically follow substantial snow melt events in the spring and during wet seasons in the fall.

### 3.4.2.1.2 Recharge through Infiltration of Hydrovac Truck Drained Water

When returning to the property, each of the Badger hydrovac trucks carry a maximum of approximately 12 cubic metres (m<sup>3</sup>) of soil and water<sup>4</sup>. On average there can be anywhere between 50 percent to 80 percent water in the load coming back to the property. There is an average of 20 trucks per day returning to the property operating five days per week. The average total volume of water being drained can be estimated by Equation 3.2, below:

$$AR_T = \frac{V_B \times f_W \times N_T \times 5 \frac{\text{days}}{\text{week}} \times 52 \frac{\text{weeks}}{\text{year}}}{365 \frac{\text{days}}{\text{year}}} \quad \text{Equation 3.2}$$

Where:

AR<sub>T</sub> Is the hydrovac truck water application rate to the land surface (m<sup>3</sup>/day)

V<sub>B</sub> Is the maximum bulk volume of soil and water carried by each hydrovac truck (12 m<sup>3</sup>)

f<sub>w</sub> Is the fraction of bulk truck load volume composed of water and can range from 0.5 m<sup>3</sup> of water per m<sup>3</sup> of bulk volume of soil and water (m<sup>3</sup>/m<sup>3</sup>) to 0.8 m<sup>3</sup>/m<sup>3</sup>

N<sub>T</sub> Is the average number of trucks returning to the property each day (20 trucks)

Based on the results of Equation 3.2 there is an average of 85.5 m<sup>3</sup>/day and 136.8 m<sup>3</sup>/day of water applied to the land surface in the Site/Operations Area. Of that water, none will runoff off-Site; some will evaporate, and the rest will infiltrate and recharge the underlying upper water-bearing unit/unconfined aquifer/water table aquifer. Evaporation occurs at variable rates that are dependent on the time of year. Environment and Climate Change Canada (2023) publish 1981 to 2010 monthly pan-evaporation normals for the Waterloo Wellington Airport (climate station identification number 6149387) (LaZerte and Albers, 2018) and these are reproduced, below. It should be noted that the majority of the area where water is discharged from truck unloading is unvegetated. Therefore, as transpiration is expected to be minimal, this component has been ignored for the purpose of this water balance.

*Waterloo Wellington Airport 1981 to 2010 Mean Daily Pan Evaporation Rates*

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Evaporation (mm/day)	--	--	--	--	4.2	4.9	4.9	4	2.8	1.7	--	--

When full, the vegetated swale has an approximate surface area of 1,700 m<sup>2</sup>. The average daily loss of water to evaporation is calculated as follows:

$$ER_T = SA \times ER \quad \text{Equation 3.3}$$

<sup>4</sup> As described previously, the water used for off-Site hydrovac operations is supplied by an on-Site well or municipal connections at locations near utility clearances by the hydrovac trucks. The trucks collect soil from utility, municipal, and commercial sites to ensure that utility strikes and damage do not occur to existing underground infrastructure during intrusive work. No hydrovac operations are conducted at sites with known soil or groundwater contaminants.

Where:

ER<sub>T</sub> Is the average total evaporation rate from the vegetated swale in units of m<sup>3</sup>/day

SA Is the surface area of the swale and is approximately 1,700 m<sup>2</sup>

ER Is the annual average evaporation rate in units of m/day and is calculated as:

$$ER = \frac{(ER_{\text{May}} + ER_{\text{Jul}} + ER_{\text{Aug}} + ER_{\text{Oct}}) \times 31 \text{ days} + (ER_{\text{Jun}} + ER_{\text{Sept}}) \times 30 \text{ days}}{365 \frac{\text{days}}{\text{year}}} \quad \text{Equation 3.4}$$

Where:

ER<sub>month</sub> Is the daily evaporation rate in units of m/day (note the units in the above table are mm/day)

Based on Equations 3.3 and 3.4 the average daily evaporative loss is approximately 3.2 m<sup>3</sup>/day. The remaining water from the trucks infiltrates into the underlying upper water-bearing unit/unconfined aquifer/water table aquifer at a total rate ranging from 82.3 m<sup>3</sup> to 133.6 m<sup>3</sup>/day.

### 3.4.2.1.3 Inflow from Upgradient Locations

Near the Site, groundwater inflow from upgradient locations is a major source of groundwater. The parameter value Q<sub>0</sub> represents the groundwater flux from upgradient locations (Haitjema, 1995) and is calculated using the following equation:

$$Q_0 = KiB \quad \text{Equation 3.5}$$

Where:

Q<sub>0</sub> Is the groundwater flux through the upper water-bearing unit/unconfined aquifer/water table aquifer and has units of m<sup>2</sup>/day.

K Is the hydraulic conductivity of the upper water-bearing unit/unconfined aquifer/water table aquifer and is specified as 0.5 m/day.

i Is the hydraulic gradient and is estimated as 0.02 m/m.

B is the saturated thickness of the upper water-bearing unit/unconfined aquifer/water table aquifer. Near the Site monitoring wells BH213 and BH219 intercepted the bottom of the upper water-bearing unit/unconfined aquifer/water table aquifer marked by the clay or silt layer at the bottom of this deposit (see Section 3.3.1). BH213 and BH219 contact the clay or silt layer at 22 m bgs and 15.2 m bgs, respectively. Depths to groundwater range from 11.16 m bgs to 11.3 m bgs and 14.21 m bgs to 14.44 m bgs at BH213 and BH219, respectively. Based on these observations, the saturated thickness near the Site ranges from approximately 0.76 m to 10.8 m.

From Equation 3.5 the groundwater flux from upgradient locations ranges from 7.6 × 10<sup>-3</sup> m<sup>2</sup>/day to 0.11 m<sup>2</sup>/day. That is to say that for every 1 m cross-section of water-bearing unit there is 7.6 × 10<sup>-3</sup> m<sup>3</sup>/day to 0.11 m<sup>3</sup>/day of flow from upgradient locations. As described in Section 3.4.1.1 groundwater flows from the northeast towards the southwest. The cross-sectional areas across the Site/Operations Area and the larger Property Area are approximately 238 m and 1,100 m, respectively. The estimated inflow from upgradient locations is between 1.8 m<sup>3</sup>/day and 26 m<sup>3</sup>/day near the Site/Operations Area and between 8.4 m<sup>3</sup>/day and 121 m<sup>3</sup>/day near the Property Area.

As the saturated thickness and hydraulic gradients vary throughout the seasons the inflow rates also will vary.

### 3.4.2.2 Groundwater Sinks

A groundwater sink is any feature that removes groundwater from the groundwater flow system. Near the Site there are two major classes of groundwater sink and includes discharge to water supply wells and discharge to downgradient locations. These classes are described in greater detail in the following sections.

### 3.4.2.2.1 Discharge to Water Supply Wells

Water use within the area is limited to private wells for domestic, agricultural, and industrial use. There is little urban development and no municipal water supply wells within the immediate area.

Most of the private wells are screened either in the deep overburden and more commonly in the bedrock.

The Property is located within a medium intrinsic vulnerability area and within WHPA-Ds for the Hespeler and Pinebush well fields in Cambridge as shown on Figure 3.2. These two well fields obtain water supplies from the Guelph Formation (bedrock aquifer).

Near the Site groundwater is pumped by the two deep on-Site water supply wells APW1 and AGW1. These wells never pump more than a combined 50 m<sup>3</sup>/day [50,000 Litres per day (L/day)] because much of the water for the hydrovac operations are obtained from municipal connections at locations near utility clearances.

### 3.4.2.2.2 Discharge to Downgradient Locations

Groundwater near the Site discharges to downgradient locations southwest of the Site/Operations Area. The rate of groundwater discharge can be estimated as the difference between groundwater sources and the other groundwater sinks. The sum of the groundwater sources are summarized, below.

Groundwater Sources	Site/Operations Area	Property
Recharge through Infiltration of Precipitation (m <sup>3</sup> /day)	28	386
Recharge through Infiltration of Hydrovac Truck Drained Water (m <sup>3</sup> /day)	82.3 to 133.6	82.3 to 133.6
Inflow from Upgradient Locations (m <sup>3</sup> /day)	8.4	121
<b>Total (m<sup>3</sup>/day)</b>	<b>118.7 to 170</b>	<b>589.3 to 640.6</b>

Accounting for some days when the on-Site water supply wells are not pumping, discharge to downgradient locations will vary between 68.7 m<sup>3</sup>/day and 170 m<sup>3</sup>/day and between 539.3 m<sup>3</sup>/day and 650.6 m<sup>3</sup>/day downgradient of the Site/Operations Area and the Property Area, respectively. As described above, groundwater flux is proportional to the hydraulic gradient, and saturated thickness.

## 4. Impact Assessment

Badger has implemented a variety of measures and ongoing assessments to ensure no negative impacts occur to nearby receptors. Routine monitoring has been ongoing at the Site since 2020 encompassing hydraulic monitoring, groundwater and surface water quality monitoring, weekly sediment dredging and stockpiling consistent with other imported liquid soil that includes drying and sampling in accordance with accepted MECP/ECA practices. In addition, no hydrovac operations are conducted at sites with known soil or groundwater contaminants and trucks that have inadvertently come into contact with suspected soils, for example, based on information that can include new site information, visual inspection, and/or identification of odours indicative of potential contamination; are directly sent to an MECP-approved treatment or disposal facility and empty trucks only return to the Site after all potentially contaminated liquid soils have been removed.

The purpose of the Impact Assessment presented in this section is to evaluate potential negative impacts associated with the Site operations. The potential for impacts from Site operations is based on potential impacts to groundwater quality at receptors that include private water well users and municipal well fields, and potential impacts on surface water features.

## 4.1 Groundwater Assessment

### 4.1.1 Groundwater Quality

Groundwater samples have been collected from the two active Site water supply wells (APW1 and AGW1 supply wells) since 2014, and more recently on twelve occasions between 2020 and 2024. The groundwater sample analytical results for samples collected between 2020 and 2024 are provided in Table 4.1. The groundwater samples were analyzed for a suite of analytes which included total metals, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH including the F1 to F4 fraction), semi-volatiles/ polycyclic aromatic hydrocarbons/base neutral extractables (SVOCs/PAHs/BNAS). The laboratory analytical certificates for all samples presented in this report are provided in Appendix F.

Table 4.1 provides the MECP Standards for use under Part XV.1 of the Environmental Protection Act Table 2 Standards (Potable Groundwater Condition) (Table 2 Standards) for comparative reference. These are the appropriate Standards against which to compare the sample analytical results as groundwater is used for potable supply locally. As indicated in Table 4.1, there were no exceedances of the Table 2 Standards reported in the samples collected from the on-Site water supply wells between 2020 and 2024.

The groundwater quality results from both supply wells is interpreted to reflect the natural geochemistry of the deep overburden and bedrock aquifers. No VOCs, petroleum hydrocarbons, PCBs, SVOCs/PAHs/BNAs were detected above the laboratory reporting limits (RLs). The laboratory RLs for all compounds were at levels lower than their respective Ontario Drinking Water Quality Standards (ODWQS) and Table 2 Standards<sup>5</sup> except for the October 5, 2022 benzo(a)pyrene sample collected at the AGW1 well, which was 0.044 micrograms per litre (µg/L), above the 0.01 µg/L Table 2 Standard. Measured benzo(a)pyrene concentrations at AGW1 have been below the RSL. No groundwater quality exceedance is anticipated to have occurred during this event.

In addition to the water supply well sampling, groundwater samples have been collected from eight on-Site monitoring wells including MW01-20, MW02-20, MW03-20, MW4-23, MW5-23, BH213, BH214, and BH219 to further support the groundwater quality assessment. Monitoring wells have also been sampled for a suite of analytes which included selected general chemistry, metals, PCBs, VOCs, TPH including the F1 to F4 fraction, and SVOCs/PAHs/BNAS.

Monitoring wells BH213 and BH219 are located in an upgradient position relative to Site operations. Monitoring wells MW03-20, BH214, and MW01-20 are considered to be located in the vicinity of Site operations. MW03-20 is considered a source strength monitoring well in that the highest groundwater concentrations near the Site should be observed in this monitoring well if the source originates from Site operations. Monitoring well MW02-20 is cross gradient from Site operations and MW4-23 and MW5-23 are located downgradient of Site operations.

The analytical results for samples collected from the Site monitoring well network are summarized in Table 4.2. As presented in Table 4.2, all groundwater results are below the Table 2 Standards for all parameters except for: 1) a single result from MW03-20 for benzo(b+j)fluoranthene in the sample collected on April 28, 2023, and 2) from MW4-23 for PHC F3 collected on September 10, 2024. These are described in more detail, below.

Several other PAH parameters were also reported in the samples collected from MW03-20; however, these detections were all reported below their respective Table 2 Standards. It should be noted that several low-level PAH detections were also reported in upgradient well BH219, suggesting that there is another source of low-level PAHs other than Site operations contributing to the pattern of detections at the Site.

#### Benzo(b+j)fluoranthene

The sample collected at MW03-20 was reported as containing a concentration of benzo(b+j)fluoranthene of 0.219 µg/L, which exceeds the Table 2 Standard of 0.1 µg/L. It is important to note that MW03-20 has been sampled on three occasions since the April 2023 sampling event and all subsequent samples were reported as non-detect or a

<sup>5</sup> Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Coarse Textured Soils, as provided in the Table 1 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

concentration below the Table 2 Standard (less than 0.01 and 0.04 µg/L, respectively). The 0.219 µg/L is suspected to be an anomalous result since it has never been detected in any other groundwater or surface water sample at the Site and contaminant mass typically migrates slowly in groundwater.

### **PHC F3**

The September 10, 2024 sample collected at MW4-23 was reported as containing 620 µg/L, which exceeds the Table 2 standard of 500 µg/l. GHD resampled this monitoring well on October 25, 2024, within the 60 day resample period described in the trigger response plan (GHD, 2024), consistent with Condition 28.8 of ECA No. A-500-4277838045. The resampled PHC F3 concentration was below the RL. This exceedance also is suspected to an anomalous result since it has never been detected prior to or following this sample result.

#### **4.1.1.1 Concentration Profiles**

Concentration profiles for chloride, sodium, boron, barium, arsenic, aluminum, copper, iron, manganese, nickel, potassium, and zinc were prepared for the eight monitoring well locations and are presented on Figure 4.1. The concentration profiles show that sodium and chloride have exhibited long-term rising trends leading up to early 2024 at MW1-20. This location is near the hydrovac truck parking area. Historically salt was used to provide traction following truck washing in winter conditions. Salt no longer is used on-Site for this purpose and has been replaced with sand to prevent these elevated concentration conditions. Sodium and chloride concentrations have been decreasing since the early 2024 peaks and these concentrations have never exceeded their respective Table 2 Standards.

Other concentration profiles show long-term decreasing or stable concentration trends with the exceptions of arsenic and aluminum concentrations at MW4-23.

Arsenic concentrations at MW4-23 have increased to concentrations greater than the peak concentrations at the MW3-20 source area well. Arsenic concentrations at MW3-20 are moderately less than the background concentrations measured at BH-213. The arsenic concentration trends observed at MW4-23 do not appear related to Site operations. Arsenic concentrations measured at MW4-23 are below the 0.025 mg/L (25 µg/L) Table 2 standard.

Aluminum concentrations at MW4-23 are periodically greater than peak concentrations measured at the MW3-23 source area well. Average aluminum concentrations at MW3-20 are similar to average concentrations at background well BH-219. The aluminum concentration trends observed at MW4-23 do not appear related to Site operations. There is not Table 2 Standard for aluminum because there is no clear evidence that residual aluminum has any effect on health (MECP, 2003).

#### **4.1.1.2 Environmental and Operational Conditions**

Condition 44.3.3 of ECA No. A 500 4277838045 states:

The written report that covers the period from the date of issuance of the ECA Approval shall include any environmental or operational problems that could negatively impact the natural environment.

During the reporting period, an odour was noticed at monitoring wells MW4-23 and MW5-23 during the August 2024 monitoring event and were described as septic odours. On behalf of Badger, GHD subsequently sampled MW4-23, MW5-23, the potentially affected wells, and MW3-20, the source area well in September and October 2024. These monitoring wells were sampled for a suite of general chemistry parameters to investigate the source of the observed odours.

The analytical results for the supplementary sampling are provided in Table 4.3. To assess potential risk to downgradient groundwater users, the Ontario Drinking Water Quality Standards (DWQS) and Table 2 Standards have been included for comparative reference. There were no exceedances of ODWQS or Table 2 Standards in any of the samples collected during the supplementary sampling events, with the exception of the PHC F3 concentration sampled at MW4-23 and described in Section 4.1.1, above.

Based on a historical review of the Site, the observed odours are interpreted to be associated with a historical septic system, which serviced the former residential dwelling and was located upgradient of MW4-23 and MW5-23. Based on

the water quality results from the supplementary sampling, there does not appear to be any risk to downgradient groundwater users.

## 4.1.2 Private Water Well Use

GHD undertook an online water well survey during August 2020 to identify and understand private water supply near the Site. The results of this survey as well as an MECP well record search were reported in a letter from GHD to Badger dated September 18, 2020. The results of the survey indicated that 7 well records exist for wells located on the Property and that 10 water supply wells are located within 200 m of the Property.

At the time of the September 18, 2020 letter it was determined that a maximum of four of the seven wells identified in the well record search could be located on the Property. A copy of the September 18, 2020 letter is provided in Appendix E. The details of the on and off-Site water supply wells are summarized in Tables 1 and 2 included in the September 18, 2020 letter. As indicated in Table 1 of the letter, two of the four wells located on Site have been abandoned.

Based on Site inspections and discussions with Site staff, there are two water supply wells that are still in existence on the Property: the EX1 (APW1) (well record number 6706720) and the A (AGW1) (well record number 6705884) supply wells. Both of these supply wells are completed within deeper strata. The EX1 supply well obtains groundwater from a deep gravel zone at a depth of 33.8 m bgs. The AGW1 supply well obtains water from the bedrock aquifer from a depth of 24.1 m to a depth of 29.6 m bgs.

There are several water supply wells near the Site that are used for domestic or agricultural purposes since this area is not serviced by municipal water. The supply wells are either within the deep overburden or bedrock aquifers. A recent well records search for the area downgradient of the Property was completed and the wells identified through this search are presented on Figure 3.9. As noted on Figure 3.9, the majority of downgradient water supply wells are located to the southwest of the Site along Wellington Road 34 or on the Capital Paving property. One well is reported to be located approximately 75 m to the east of the Site; however, the location is within a heavily forested area and so the depicted location of the well is suspected to be lot-centric and not representative of the actual well location.

## 4.1.3 Municipal Well Fields

As discussed in Section 3.1.1 of this report, the Property is located within WHPA-Ds and approximately 4.7 km and 3.8 km northeast of the City of Cambridge Pinebush and Hespeler well fields. As described in the OP, significant drinking water threat policies are applicable to WHPAs-A, -B, -C, and -E. There are no significant drinking water threat policies in the Grand River Source Protection Plan (LERSPC, 2022) that are associated with WHPA-Ds.

It is important to note that the bedrock is the main aquifer for both the City of Guelph and City of Cambridge municipal water supply well fields.

## 4.2 Surface Water Assessment

The majority of the stormwater runoff from the Site and the drainage from the soil stockpiles is collected in a vegetated drainage swale that discharges to a stormwater management pond located in the southwest corner of the extractive zoned parcel (to the west of Site operations). There is no outlet from the pond, other than a small diameter emergency overflow culvert that discharges to the west towards the Capital Paving property. Some water from the stormwater management pond is lost through evapotranspiration and the remainder infiltrates to Site groundwater. Site staff have never observed the stormwater management pond overflowing.

The Applicant has implemented a Stormwater Management Plan for a number of years and conducted pond surface water sampling on a weekly basis since 2014. Beginning in May 2020, GHD assisted the Applicant in continuing the weekly sampling with an expanded parameter list. From January 2017 to September 2024, 256 surface water samples were collected. The surface water analytical results were compared to the Table 2 Standards and all samples were reported below the Table 2 Standards for all parameters. The comparison of the SWM pond samples against Table 2

Standards is appropriate as there is no background monitoring location available within the same water body. It is reasonable to conclude that if the surface water quality meets the Table 2 Standards in the SWM Pond, it will continue to meet these standards after it has infiltrated and recharged the underlying aquifer. The surface water analytical results are provided in Table 4.4.

The extensive surface water quality dataset demonstrates that Site operations are not impacting surface water.

### **4.3 Impact Assessment Summary**

The results of the water monitoring program undertaken at the Site demonstrate that there is no evidence of impact to groundwater or surface water quality resulting from Site operations. This observation is particularly important given that the Site has been in operation more than 10 years. The lack of significant effect on water quality in the immediate vicinity of Site operations after more than ten years of operation demonstrates that the practices currently being undertaken at the Site to ensure no negative impacts on the surrounding water resources have been effective over the long term.

On the basis of this hydrogeologic impact assessment it is concluded that the Site hydrogeologic setting is suitable for the current operations, provided that practices related to soil and slurry (liquid soil) importation and handling meet or exceed those practices undertaken in the past.

Notwithstanding, it is recommended that a water quality monitoring program continue to be implemented with annual reporting on the results of monitoring in accordance with the ECA. It is further recommended that trigger level and contingency implementation programs be developed and incorporated into the routine monitoring and reporting. The trigger level program should be designed to provide advance warning of impacts to groundwater quality so that contingency measures can be implemented in a timely manner. An appropriate contingency measure to be considered in the event of Site-related impact to groundwater resources is replacement of downgradient water supply wells with wells completed within a deeper aquifer that is hydraulically isolated from the water table unit.

The following section outlines the recommended monitoring program.

## **5. Proposed Monitoring Program**

It is recommended that potential future impacts to groundwater and surface water quality continue to be monitored by the Monitoring Program which MECP accepted as part of the 2020 HIA. The Monitoring Program includes the following activities:

- Continue the collection of groundwater samples from MW01-20, MW02-20, MW03-20, MW4-23, MW5-23, BH213, BH214, BH219, and the two on-Site water supply wells (AGW1, APW1) at a quarterly frequency for metals, VOCs, PHCF1-F4, SVOCs, and PAHs.
- Collection of surface water samples from the SWM pond once per week for metals, VOCs, PHCF1-F4, SVOCs and PAHs.
- Measurement of static groundwater levels at the eight groundwater monitoring wells (excluding supply wells) quarterly during the groundwater sampling events.

It is also proposed that an annual report on the results of the monitoring program be prepared and provided to MECP and other stakeholders, as required. The annual report should provide monitoring results, laboratory certificates and interpretations. The annual report should also include a comparison of the monitoring results to the trigger level and contingency implementation programs (to be developed) with recommendations concerning modifications to the monitoring or implementation of contingency measures, as appropriate.

## 6. Conclusions

Based on the results of the hydrogeological assessment presented above, the following conclusions are provided:

1. The results of groundwater and surface water monitoring confirm that Site operations conducted have had no significant impact on groundwater or surface water quality.
2. On the basis of past performance, there are no anticipated impacts to groundwater resources from Site operations, provided that environmental practices related to soil and slurry importation and handling meet or exceed those practices undertaken in the past.
3. The groundwater and surface water regimes can be adequately monitored to ensure a timely response to potential degradation in water quality.
4. An appropriate contingency measure to be considered in the event of an impact to groundwater resources from Site-related activities is replacement of downgradient water supplies with wells completed in a deeper aquifer.

## 7. References

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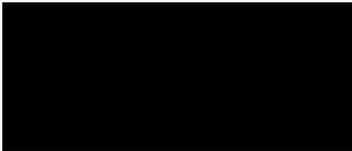
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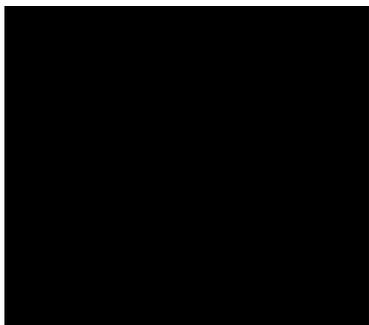
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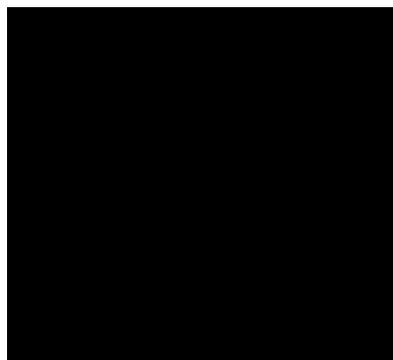
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# Tables



**Table 3.1**  
**Historical Groundwater Elevations**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34  
 Wellington County, ON

Well ID	Y		Top of Riser mASL	Ground Surface mASL	Top of Screen		Bottom of Screen		Oct. 5, 2022		Apr. 28, 2023		Jun. 28, 2023		Aug. 9, 2023		Sept.11, 2023		Nov. 3, 2023		Feb. 23, 2024		May 10, 2024		Aug. 9, 2024		Sept. 10, 2024		Oct. 25, 2024	
	Northing (UTM Zone 17N)	Easting			mbgs	mASL	mbgs	mASL	mbtor	mASL	mbtor	mASL	mbtor	mASL	mbtor	mASL	mbtor	mASL	mbtor	mASL	mbtor	mASL	mbtor	mASL	mbtor	mASL	mbtor	mASL	mbtor	mASL
<b>Badger Daylighting</b>																														
MW1-20	4,810,969	560,292	323.0	322.3	10.70	311.56	13.72	308.54	11.55	311.4	11.31	311.6	11.07	311.9	11.13	311.8	11.23	311.7	11.59	311.4	11.58	311.4	11.12	311.8	10.76	312.2	--	--	11.14	311.8
MW2-20	4,810,970	560,486	320.1	319.5	9.10	310.39	12.19	307.30	8.45	311.7	8.21	311.9	8.04	312.1	8.12	312.0	8.21	311.9	8.49	311.7	8.47	311.7	8.04	312.1	7.75	312.4	--	--	8.14	312.0
MW3-20	4,811,159	560,405	323.2	322.5	11.30	311.22	14.33	308.19	6.87	316.4	6.23	317.0	6.45	316.8	6.65	316.6	6.74	316.5	7.16	316.1	6.64	316.6	6.29	316.9	6.57	316.7	6.49	316.7	6.75	316.5
MW4-23	4,810,764	560,158	320.4	319.5	12.19	307.27	15.24	304.22	--	--	--	--	13.28	307.1	13.27	307.1	13.41	307.0	13.79	306.6	13.83	306.6	13.45	306.9	12.72	307.7	12.72	307.7	13.11	307.3
MW5-23	4,810,735	560,345	319.6	318.8	11.90	306.93	14.94	303.89	--	--	--	--	12.21	307.4	12.24	307.3	12.37	307.2	12.68	306.9	12.63	306.9	12.11	307.5	11.77	307.8	11.90	307.7	12.22	307.3
BH213	4,811,319	560,383	325.8	325.3	20.10	305.15	21.60	303.65	--	--	11.71	314.1	11.69	314.1	11.84	314.0	11.96	313.8	12.22	313.6	12.03	313.8	--	--	11.17	314.6	--	--	11.72	314.1
BH214	4,811,091	560,455	325.4	324.6	8.30	316.26	9.80	314.76	--	--	9.75	315.6	9.97	315.4	10.28	315.1	10.63	314.7	--	--	--	--	--	--	--	--	--	--	--	--
BH219	4,811,723	560,255	331.2	330.2	15.00	315.20	16.50	313.70	--	--	15.00	316.2	15.07	316.1	15.23	316.0	15.35	315.8	15.67	315.5	15.40	315.8	15.06	316.1	15.04	316.2	--	--	15.44	315.8

Notes:

- not monitored
- mASL metres above sea level
- mbgs metres below ground surface
- mbtor metres below top of riser



Table 3.2

**Single Well Response Test Results**  
**2374868 Ontario Inc.**  
**6678 Wellington Road 34**  
**Wellington County, ON**

Location	Test	Solution Method <sup>(2)</sup>	Aquifer Model	Hydraulic Conductivity <sup>(1)</sup> (cm/sec)
MW1-20	Falling Head 1	Bouwer-Rice	Unconfined	$1.3 \times 10^{-4}$
	Rising Head 1	Bouwer-Rice	Unconfined	$3.4 \times 10^{-4}$
	Rising Head 2	Bouwer-Rice	Unconfined	$3.2 \times 10^{-4}$
MW2-20	Falling Head 1	Bouwer-Rice	Unconfined	$3.0 \times 10^{-3}$
	Rising Head 1	Bouwer-Rice	Unconfined	$8.8 \times 10^{-3}$
	Falling Head 2	Bouwer-Rice	Unconfined	$3.4 \times 10^{-3}$
	Rising Head 2	Bouwer-Rice	Unconfined	$9.1 \times 10^{-3}$
MW3-20	Falling Head 1	Bouwer-Rice	Unconfined	$2.5 \times 10^{-5}$
	Rising Head 1	Bouwer-Rice	Unconfined	$2.4 \times 10^{-5}$
<b>Geometric Mean:</b>				$5.8 \times 10^{-4}$

Notes:

- (1) Calculated using AQTESOLV®, Version 4.51, HydroSOLVE, Inc.
- (2) Bouwer, H. and R.C. Rice, 1976. A slug test method for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells, Water Resources Research, vol. 12, no. 3, pp. 423-428.



**Table 4.1**  
**Historical Water Supply Well Data**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34  
 Wellington County, ON

	Location: Sample Date:	AGW1 July 2 2020	AGW1 July 23 2020	AGW1 August 13 2020	AGW1 10/5/2022	AGW1 4/28/2023	AGW1 6/28/2023	AGW1 9/11/2023	AGW1 11/3/2023	AGW1 2/23/2024	AGW1 5/10/2024	AGW1 8/9/2024	AGW1 10/25/2024	APW1 July 9 2020	APW1 July 30 2020	APW1 August 20 2020	
<b>Table 2 Standards<sup>(2)</sup></b>	<b>Units</b>																
<b>Physical Tests</b>																	
Conductivity	--	mS/cm	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
pH	--	pH Units	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Anions and Nutrients</b>																	
Chloride	790	mg/L	--	--	--	15.6	17.9	17.9	18.5	19.1	22.9	22.7	22.7	--	--	--	
Phosphorus, Total		mg/L	0.0056	ND (0.0030)	0.0082	0.086	--	--	--	--	--	--	--	ND (0.0030)	3.4	3.8	
<b>Cyanides</b>																	
Cyanide, Weak Acid Diss	66	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Cyanide, strong acid dissociable (total)	66	µg/L	--	--	--	ND (0.0050)	ND (0.0050)	ND (0.0050)	--	--	--						
<b>Dissolved Metals<sup>(2)</sup></b>																	
Aluminum (dissolved)	--	mg/L	ND (0.005)	ND (0.005)	0.0192	0.0013	ND (0.001)	0.0025	ND (0.001)	ND (0.001)	ND (0.001)	0.0035	ND (0.001)	ND (0.001)	0.0066	0.008	ND (0.005)
Antimony (dissolved)	0.006	mg/L	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)
Arsenic (dissolved)	0.025	mg/L	0.00517	0.00224	0.00364	0.00481	0.00534	0.00481	0.00382	0.00462	0.00263	0.00326	0.00324	0.004	0.0058	0.00362	0.0028
Barium (dissolved)	1	mg/L	0.0495	0.0506	0.0779	0.0588	0.0541	0.0626	0.0471	0.0559	0.0562	0.057	0.0533	0.0573	0.0653	0.0705	0.0492
Beryllium (dissolved)	0.004	mg/L	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0001)	ND (0.0001)	ND (0.0001)					
Bismuth (dissolved)	--	mg/L	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)
Boron (dissolved)	5	mg/L	ND (0.01)	ND (0.01)	0.014	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	0.014	0.014	ND (0.01)					
Cadmium (dissolved)	0.0027	mg/L	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	0.00001	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)
Caesium (dissolved)	--	mg/L	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)
Calcium (dissolved)	--	mg/L	70.6	68.3	48.5	77.6	70.2	75.1	63.4	80	75.3	72.5	72	72.2	ND (0.00001)	ND (0.00001)	ND (0.00001)
Chromium (dissolved)	0.05	mg/L	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
Cobalt (dissolved)	0.0038	mg/L	0.00011	ND (0.0001)	ND (0.0001)	0.00011	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)				
Copper (dissolved)	0.087	mg/L	ND (0.0005)	0.00389	ND (0.0005)	0.00484	0.00204	0.00235	0.00388	0.00185	0.00173	0.00172	0.00098	0.00095	ND (0.0005)	ND (0.0005)	0.00222
Iron (dissolved)	--	mg/L	0.4	0.022	0.244	0.655	0.499	0.567	0.537	0.642	0.519	0.693	0.752	0.913	0.281	0.265	0.079
Lead (dissolved)	0.01	mg/L	0.00023	0.00027	0.00008	0.00018	ND (0.00005)	0.00008	ND (0.00005)	ND (0.00005)	ND (0.00005)	0.00006	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	0.00017
Lithium (dissolved)	--	mg/L	0.0034	0.0039	0.0032	0.0044	0.0042	0.0041	0.0043	0.0044	0.0043	0.004	0.0034	0.0037	0.0026	0.0036	0.0045
Magnesium (dissolved)	--	mg/L	32.6	31.8	25.6	34	36.7	39.2	36.8	40.1	39.9	39.2	35.2	27.3	26.6	34.1	--
Manganese (dissolved)	--	mg/L	0.0108	0.00764	0.00813	0.0157	0.0116	0.0136	0.012	0.0139	0.016	0.0175	0.0184	0.0185	0.00931	0.00761	0.00968
Molybdenum (dissolved)	0.07	mg/L	0.00056	0.00063	0.00066	0.00053	0.0005	0.00045	0.00043	0.00045	0.00048	0.00043	0.00041	0.00042	0.0007	0.00067	0.00059
Nickel (dissolved)	0.1	mg/L	0.0017	0.00086	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)						
Phosphorus (dissolved)	--	mg/L	0.0056	ND (0.003)	0.0082	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)					
Potassium (dissolved)	--	mg/L	0.978	0.996	0.979	1.04	1.06	0.993	1.13	1.02	1.08	1.1	1.04	1.02	0.995	0.991	0.937
Rubidium (dissolved)	--	mg/L	ND (0.0002)	0.00021	0.00035	ND (0.0002)	0.00022	ND (0.0002)	0.00021	ND (0.0002)	0.0002	0.00023	0.0002	0.00021	0.00034	0.00038	ND (0.0002)
Selenium (dissolved)	0.01	mg/L	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)
Silicon (dissolved)	--	mg/L	8.89	9.29	7.3	9.12	9.63	9.27	9.74	9.2	9.76	9.58	8.84	8.55	7.6	7.43	8.95
Silver (dissolved)	0.0015	mg/L	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00005)	ND (0.00005)	ND (0.00005)					
Sodium (dissolved)	490	mg/L	7.79	7.51	5.75	7.36	7.49	7.8	7.35	7.98	7.66	7.76	7.88	5.97	7.88	7.88	--
Strontium (dissolved)	--	mg/L	0.148	0.146	0.348	0.15	0.138	0.138	0.122	0.144	0.143	0.141	0.137	0.144	0.322	0.356	0.147
Sulfur (dissolved)	--	mg/L	20.2	20.1	7.71	--	--	--	--	--	--	--	--	14.7	7.15	8.04	20.4
Tellurium (dissolved)	--	mg/L	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)
Thallium (dissolved)	0.002	mg/L	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)
Thorium (dissolved)	--	mg/L	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)
Tin (dissolved)	--	mg/L	ND (0.0001)	ND (0.0001)	ND (0.0001)	0.0001	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)				
Titanium (dissolved)	--	mg/L	ND (0.0003)	ND (0.0003)	0.00062	ND (0.0003)	ND (0.0004)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)					
Tungsten (dissolved)	--	mg/L	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)
Uranium (dissolved)	0.02	mg/L	0.00025	0.0003	0.00038	0.00023	0.00019	0.0002	0.00016	0.00019	0.00019	0.00019	0.00017	0.00018	0.00059	0.0004	0.00023
Vanadium (dissolved)	0.0062	mg/L	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
Zinc (dissolved)	1.1	mg/L	0.0054	0.005	0.0066	0.009	0.0052	0.0191	0.0273	0.0148	0.0279	0.0279	0.0342	ND (0.003)	ND (0.003)	0.0041	--
Zirconium (dissolved)	--	mg/L	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)					
<b>Aggregate Organics</b>																	
Oil and Grease, Total	--	mg/L	--	--	--	ND (5.0)	ND (5.0)	ND (5.0)	--	--	--	--					
Animal/Veg Oil & Grease	--	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mineral Oil and Grease	--	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Table 4.1  
Historical Water Supply Well Data  
2374868 Ontario Inc.  
6678 Wellington Road 34  
Wellington County, ON

		Location: Sample Date:	AGW1 July 2 2020	AGW1 July 23 2020	AGW1 August 13 2020	AGW1 10/5/2022	AGW1 4/28/2023	AGW1 6/28/2023	AGW1 9/11/2023	AGW1 11/3/2023	AGW1 2/23/2024	AGW1 5/10/2024	AGW1 8/9/2024	AGW1 10/25/2024	APW1 July 9 2020	APW1 July 30 2020	APW1 August 20 2020
<b>Table 2 Standards<sup>(2)</sup></b>																	
<b>Units</b>																	
<b>Volatile Organic Compounds</b>																	
Acetone	2700	µg/L	ND (30)	ND (30)	ND (30)	ND (20)	ND (20)	ND (20)	ND (30)	ND (30)	ND (30)						
Benzene	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Bromodichloromethane	16	µg/L	ND (2.0)	ND (2.0)	ND (2.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (2.0)	ND (2.0)	ND (2.0)						
Bromoform	25	µg/L	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Bromomethane (Methyl bromide)	0.89	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Carbon tetrachloride	0.79	µg/L	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
Chlorobenzene	30	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Dibromochloromethane	25	µg/L	ND (2.0)	ND (2.0)	ND (2.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (2.0)	ND (2.0)	ND (2.0)						
Chloroform (Trichloromethane)	2.4	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.0)	ND (1.0)	ND (1.0)						
1,2-Dibromoethane (Ethylene dibromide)		µg/L	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
1,2-Dichlorobenzene	3	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,3-Dichlorobenzene	59	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,4-Dichlorobenzene	1	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Dichlorodifluoromethane (CFC-12)	590	µg/L	ND (2.0)	ND (2.0)	ND (2.0)	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.0)	ND (2.0)	ND (2.0)						
1,1-Dichloroethane	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,2-Dichloroethane	1.6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,1-Dichloroethene	1.6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
cis-1,2-Dichloroethene	1.6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
trans-1,2-Dichloroethene	1.6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Methylene Chloride	50	µg/L	ND (5.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (5.0)	ND (5.0)	ND (5.0)						
1,2-Dichloropropane	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene	0.5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
cis-1,3-Dichloropropene	0.5	µg/L	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)
trans-1,3-Dichloropropene	0.5	µg/L	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)
Ethylbenzene	2.4	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Hexane	51	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
2-Butanone (Methyl ethyl ketone) (MEK)	1800	µg/L	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	640	µg/L	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)
Methyl tert butyl ether (MTBE)	15	µg/L	ND (2.0)	ND (2.0)	ND (2.0)	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.0)	ND (2.0)	ND (2.0)						
Styrene	5.4	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,1,1,2-Tetrachloroethane	1.1	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,1,2,2-Tetrachloroethane	1	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Tetrachloroethene	1.6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Toluene	24	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,1,1-Trichloroethane	200	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,1,2-Trichloroethane	4.7	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Trichloroethene	1.6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Trichlorofluoromethane (CFC-11)	150	µg/L	ND (5.0)	ND (5.0)	ND (5.0)	ND (0.50)	ND (0.50)	ND (0.50)	ND (5.0)	ND (5.0)	ND (5.0)						
Vinyl chloride	0.5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
m&p-Xylenes	--	µg/L	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)
o-Xylene	--	µg/L	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)
Xylenes (Total)	300	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
<b>Hydrocarbons</b>																	
Petroleum hydrocarbons F1 (C6-C10)	750	µg/L	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
Petroleum hydrocarbons F2 (C10-C16)	150	µg/L	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Petroleum hydrocarbons F2 minus Naphthalene	--	µg/L	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Petroleum hydrocarbons F3 (C16-C34)	500	µg/L	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)
Petroleum hydrocarbons F3 minus PAH	--	µg/L	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)
Petroleum hydrocarbons F4 (C34-C50)	500	µg/L	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)
Petroleum hydrocarbons F1 minus BTEX	--	µg/L	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
Total Petroleum Hydrocarbons (C6-C50)	--	µg/L	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)
<b>Phthalate Esters</b>																	
Diethyl phthalate	38	µg/L	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
Dimethyl phthalate	38	µg/L	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
bis(2-Ethylhexyl)phthalate (DEHP)	10	µg/L	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (0.60)	ND (0.60)	ND (0.60)	ND (2.0)	ND (2.0)	ND (2.0)



Table 4.1  
Historical Water Supply Well Data  
2374868 Ontario Inc.  
6678 Wellington Road 34  
Wellington County, ON

	Location: Sample Date:	AGW1 July 2 2020	AGW1 July 23 2020	AGW1 August 13 2020	AGW1 10/5/2022	AGW1 4/28/2023	AGW1 6/28/2023	AGW1 9/11/2023	AGW1 11/3/2023	AGW1 2/23/2024	AGW1 5/10/2024	AGW1 8/9/2024	AGW1 10/25/2024	APW1 July 9 2020	APW1 July 30 2020	APW1 August 20 2020
<b>Table 2 Standards<sup>(2)</sup></b>		<b>Units</b>														
<b>Semi-Volatile Organics</b>																
Biphenyl (1,1-Biphenyl)	0.5 µg/L	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.40)	ND (0.40)	ND (0.40)
Bis(2-chloroethyl)ether	10 µg/L	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	0.5 µg/L	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)
4-Chloroaniline	5 µg/L	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)
3,3'-Dichlorobenzidine	5 µg/L	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)
2,4-Dinitrotoluene	70 µg/L	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)
2,6-Dinitrotoluene	120 µg/L	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)
1,2,4-Trichlorobenzene	5 µg/L	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)
2,4-Dinitrotoluene/2,6-Dinitrotoluene	5 µg/L	ND (0.57)	ND (0.57)	ND (0.57)	ND (0.6)	ND (0.60)	ND (0.60)	ND (0.60)	ND (0.57)	ND (0.57)	ND (0.57)					
<b>Chlorinated Phenolics</b>																
2-Chlorophenol	8.9 µg/L	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)
2,4-Dichlorophenol	20 µg/L	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.30)	ND (0.30)	ND (0.30)
Pentachlorophenol	30 µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
2,4,5-Trichlorophenol	8.9 µg/L	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
2,4,6-Trichlorophenol	2 µg/L	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
<b>Non-Chlorinated Phenolics</b>																
2,4-Dimethylphenol	59 µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
2,4-Dinitrophenol	10 µg/L	ND (1.0)	ND (2.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (2.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Phenol	890 µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
<b>Polycyclic Aromatic Hydrocarbons</b>																
Acenaphthene	4.1 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.020)	ND (0.020)					
Acenaphthylene	1 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.020)	ND (0.020)					
Anthracene	2.4 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.020)	ND (0.020)					
Benzo(a)anthracene	1 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.020)	ND (0.020)					
Benzo(a)pyrene	0.01 µg/L	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.010)	ND (0.010)	ND (0.010)					
Benzo(b)fluoranthene/Benzo(j)fluoranthene	0.1 µg/L	--	--	--	ND (0.10)	ND (0.010)	ND (0.010)	ND (0.010)	--	--	--					
Benzo(g,h,i)perylene	0.2 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.020)	ND (0.020)					
Benzo(k)fluoranthene	0.1 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.10)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.020)	ND (0.020)					
Chrysene	0.1 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.10)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.020)	ND (0.020)					
Dibenz(a,h)anthracene	0.2 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.20)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.020)	ND (0.020)	ND (0.020)					
Fluoranthene	0.41 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.020)	ND (0.020)					
Fluorene	120 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.020)	ND (0.020)					
Indeno(1,2,3-cd)pyrene	0.2 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.020)	ND (0.020)					
1-Methylnaphthalene	3.2 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.40)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.020)	ND (0.020)					
2-Methylnaphthalene	3.2 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.40)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.020)	ND (0.020)					
Naphthalene	11 µg/L	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.20)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)					
Phenanthrene	1 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.20)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)					
Pyrene	4.1 µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.020)	ND (0.020)	ND (0.020)					
1-Methylnaphthalene/2-Methylnaphthalene	3.2 µg/L	ND (0.028)	ND (0.028)	ND (0.028)	ND (0.6)	ND (0.015)	ND (0.015)	ND (0.015)	ND (0.028)	ND (0.028)	ND (0.028)					

Notes:

(1) Ontario Drinking Water Quality Standards (ODWQS), MECP, dated June 2006 and updated periodically.

(2) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Coarse Textured Soils, as provided in the Table 1 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

(3) Metals concentrations in 2020 are total µg/L

J Micrograms per litre.

J+ Estimated concentration.

ND or < Not detected at the associated reporting limit (RL).

3.36 Exceedance of Standards.

ND (0.044) Detection limit exceeds standards



**Table 4.1**  
**Historical Water Supply Well Data**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34  
 Wellington County, ON

	Location: Sample Date:	APW1 10/6/2022	APW1 4/28/2023	APW1 6/28/2023	APW1 9/11/2023	APW1 11/3/2023	APW1 2/23/2024	APW1 5/10/2024	APW1 8/9/2024	APW1 10/25/2024	
<b>Table 2 Standards<sup>(2)</sup></b>		<b>Units</b>									
<b>Physical Tests</b>											
Conductivity	--	mS/cm	--	--	--	--	--	--	--	--	
pH	--	pH Units	--	--	--	--	--	--	--	--	
<b>Anions and Nutrients</b>											
Chloride	790	mg/L	3.76	4.28	5.1	4.72	6.17	5.34	4.82	5.29	4.73
Phosphorus, Total		mg/L	ND (0.050)	--	--	--	--	--	--	--	--
<b>Cyanides</b>											
Cyanide, Weak Acid Diss	66	µg/L	--	--	--	--	--	--	--	--	--
Cyanide, strong acid dissociable (total)	66	µg/L	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)					
<b>Dissolved Metals<sup>(3)</sup></b>											
Aluminum (dissolved)	--	mg/L	0.0018	ND (0.001)	0.0014	ND (0.01)	0.0013	0.0031	0.0011	0.0069	0.0029
Antimony (dissolved)	0.006	mg/L	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)
Arsenic (dissolved)	0.025	mg/L	0.00582	0.00609	0.00469	0.00597	0.00395	0.003	0.00522	0.00459	0.00572
Barium (dissolved)	1	mg/L	0.0737	0.0745	0.0798	0.0723	0.0864	0.0849	0.0838	0.072	0.0714
Beryllium (dissolved)	0.004	mg/L	ND (0.00002)	ND (0.00002)	ND (0.00002)	ND (0.0002)	ND (0.00002)	ND (0.00002)	ND (0.00002)	ND (0.00002)	ND (0.00002)
Bismuth (dissolved)	--	mg/L	ND (0.00005)	ND (0.00005)	ND (0.0005)	ND (0.0005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)
Boron (dissolved)	5	mg/L	0.015	0.012	0.015	ND (0.1)	0.015	0.016	0.013	0.015	0.013
Cadmium (dissolved)	0.0027	mg/L	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00005)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)
Caesium (dissolved)	--	mg/L	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.0001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)
Calcium (dissolved)	--	mg/L	51.5	48.3	50.5	49.9	53.6	50.5	49.2	47	46.1
Chromium (dissolved)	0.05	mg/L	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
Cobalt (dissolved)	0.0038	mg/L	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)
Copper (dissolved)	0.087	mg/L	0.00087	ND (0.0002)	ND (0.0002)	ND (0.002)	0.00025	0.00052	0.00026	0.0005	ND (0.0002)
Iron (dissolved)	--	mg/L	0.193	0.216	0.152	0.246	0.185	0.157	0.196	0.177	0.211
Lead (dissolved)	0.01	mg/L	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.0005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)	ND (0.00005)
Lithium (dissolved)	--	mg/L	0.0037	0.0032	0.0039	ND (0.01)	0.0043	0.0039	0.0032	0.0029	0.0028
Magnesium (dissolved)	--	mg/L	26.4	27.8	28.5	29.6	29	28.7	27.2	30	26.7
Manganese (dissolved)	--	mg/L	0.00758	0.00743	0.00638	0.00737	0.00547	0.00502	0.00704	0.00614	0.00736
Molybdenum (dissolved)	0.07	mg/L	0.0007	0.00069	0.00054	0.00075	0.00053	0.00047	0.00066	0.0006	0.00067
Nickel (dissolved)	0.1	mg/L	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
Phosphorus (dissolved)	--	mg/L	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.5)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Potassium (dissolved)	--	mg/L	1.03	1.01	1	1.14	1.09	1.12	0.988	1.05	1.03
Rubidium (dissolved)	--	mg/L	0.00039	0.00031	0.0004	ND (0.002)	0.00041	0.00045	0.00037	0.0004	0.00036
Selenium (dissolved)	0.01	mg/L	0.00113	0.00024	0.00629	ND (0.0005)	0.00059	ND (0.00005)	0.00016	0.00053	0.0002
Silicon (dissolved)	--	mg/L	7.59	7.65	7.48	7.99	7.51	7.74	7.58	7.61	7.31
Silver (dissolved)	0.0015	mg/L	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.0001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)
Sodium (dissolved)	490	mg/L	6.05	6.12	6.15	6.57	6.68	6.73	6.12	6.5	5.86
Strontium (dissolved)	--	mg/L	0.375	0.304	0.438	0.329	0.504	0.548	0.372	0.43	0.365
Sulfur (dissolved)	--	mg/L	--	--	--	--	--	--	--	--	7.13
Tellurium (dissolved)	--	mg/L	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)
Thallium (dissolved)	0.002	mg/L	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.0001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)	ND (0.00001)
Thorium (dissolved)	--	mg/L	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)
Tin (dissolved)	--	mg/L	0.00011	ND (0.0001)	ND (0.0001)	ND (0.001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)
Titanium (dissolved)	--	mg/L	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)
Tungsten (dissolved)	--	mg/L	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)
Uranium (dissolved)	0.02	mg/L	0.00061	0.0006	0.00041	0.00061	0.00035	0.00027	0.00049	0.00041	0.00052
Vanadium (dissolved)	0.0062	mg/L	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
Zinc (dissolved)	1.1	mg/L	0.0012	0.0011	ND (0.001)	ND (0.01)	0.0014	0.0013	0.0015	ND (0.001)	ND (0.001)
Zirconium (dissolved)	--	mg/L	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)
<b>Aggregate Organics</b>											
Oil and Grease, Total	--	mg/L	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)					
Animal/Veg Oil & Grease	--	mg/L	--	--	--	--	--	--	--	--	--
Mineral Oil and Grease	--	mg/L	--	--	--	--	--	--	--	--	--



**Table 4.1**  
**Historical Water Supply Well Data**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34  
 Wellington County, ON

		Location:	APW1	APW1	APW1	APW1	APW1	APW1	APW1	APW1	APW1
		Sample Date:	10/6/2022	4/28/2023	6/28/2023	9/11/2023	11/3/2023	2/23/2024	5/10/2024	8/9/2024	10/25/2024
<b>Table 2 Standards<sup>(2)</sup></b>			<b>Units</b>								
<b>Volatile Organic Compounds</b>											
Acetone	2700	µg/L	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)
Benzene	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Bromodichloromethane	16	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Bromoforn	25	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Bromomethane (Methyl bromide)	0.89	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Carbon tetrachloride	0.79	µg/L	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
Chlorobenzene	30	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Dibromochloromethane	25	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Chloroform (Trichloromethane)	2.4	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,2-Dibromoethane (Ethylene dibromide)		µg/L	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
1,2-Dichlorobenzene	3	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,3-Dichlorobenzene	59	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,4-Dichlorobenzene	1	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Dichlorodifluoromethane (CFC-12)	590	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,1-Dichloroethane	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,2-Dichloroethane	1.6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,1-Dichloroethene	1.6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
cis-1,2-Dichloroethene	1.6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
trans-1,2-Dichloroethene	1.6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Methylene Chloride	50	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichloropropane	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
cis-1,3-Dichloropropene/trans-1,3-Dichloropropene	0.5	µg/L	ND (0.5)	ND (0.50)							
cis-1,3-Dichloropropene	0.5	µg/L	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)
trans-1,3-Dichloropropene	0.5	µg/L	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)
Ethylbenzene	2.4	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Hexane	51	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
2-Butanone (Methyl ethyl ketone) (MEK)	1800	µg/L	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	640	µg/L	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)
Methyl tert butyl ether (MTBE)	15	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Styrene	5.4	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,1,1,2-Tetrachloroethane	1.1	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,1,2,2-Tetrachloroethane	1	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Tetrachloroethene	1.6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Toluene	24	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,1,1-Trichloroethane	200	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,1,2-Trichloroethane	4.7	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Trichloroethene	1.6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Trichlorofluoromethane (CFC-11)	150	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Vinyl chloride	0.5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
m&p-Xylenes	--	µg/L	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)	ND (0.40)
o-Xylene	--	µg/L	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)
Xylenes (Total)	300	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
<b>Hydrocarbons</b>											
Petroleum hydrocarbons F1 (C6-C10)	750	µg/L	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
Petroleum hydrocarbons F2 (C10-C16)	150	µg/L	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Petroleum hydrocarbons F2 minus Naphthalene	--	µg/L	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Petroleum hydrocarbons F3 (C16-C34)	500	µg/L	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)
Petroleum hydrocarbons F3 minus PAH	--	µg/L	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)
Petroleum hydrocarbons F4 (C34-C50)	500	µg/L	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)
Petroleum hydrocarbons F1 minus BTEX	--	µg/L	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
Total Petroleum Hydrocarbons (C6-C50)	--	µg/L	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)	ND (370)
<b>Phthalate Esters</b>											
Diethyl phthalate	38	µg/L	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
Dimethyl phthalate	38	µg/L	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
bis(2-Ethylhexyl)phthalate (DEHP)	10	µg/L	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (0.60)	ND (0.60)	ND (0.60)



Table 4.1  
Historical Water Supply Well Data  
2374868 Ontario Inc.  
6678 Wellington Road 34  
Wellington County, ON

			Location: Sample Date:	APW1 10/6/2022	APW1 4/28/2023	APW1 6/28/2023	APW1 9/11/2023	APW1 11/3/2023	APW1 2/23/2024	APW1 5/10/2024	APW1 8/9/2024	APW1 10/25/2024
<b>Table 2 Standards<sup>(2)</sup></b>			<b>Units</b>									
<b>Semi-Volatile Organics</b>												
Biphenyl (1,1-Biphenyl)	0.5	µg/L		ND (0.40)	ND (0.20)	ND (0.26)	ND (0.20)					
Bis(2-chloroethyl)ether	10	µg/L		ND (0.40)	ND (0.40)	ND (0.40)						
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	0.5	µg/L		ND (0.40)	ND (0.40)	ND (0.40)						
4-Chloroaniline	5	µg/L		ND (0.40)	ND (0.40)	ND (0.40)						
3,3'-Dichlorobenzidine	5	µg/L		ND (0.40)	ND (0.40)	ND (0.40)						
2,4-Dinitrotoluene	70	µg/L		ND (0.40)	ND (0.40)	ND (0.40)						
2,6-Dinitrotoluene	120	µg/L		ND (0.40)	ND (0.40)	ND (0.40)						
1,2,4-Trichlorobenzene	5	µg/L		ND (0.40)	ND (0.40)	ND (0.40)						
2,4-Dinitrotoluene/2,6-Dinitrotoluene	5	µg/L		ND (0.6)	ND (0.60)	ND (0.60)	ND (0.60)					
<b>Chlorinated Phenolics</b>												
2-Chlorophenol	8.9	µg/L		ND (0.30)	ND (0.30)	ND (0.30)						
2,4-Dichlorophenol	20	µg/L		ND (0.30)	ND (0.20)	ND (0.20)	ND (0.20)					
Pentachlorophenol	30	µg/L		ND (0.50)	ND (0.50)	ND (0.50)						
2,4,5-Trichlorophenol	8.9	µg/L		ND (0.20)	ND (0.20)	ND (0.20)						
2,4,6-Trichlorophenol	2	µg/L		ND (0.20)	ND (0.20)	ND (0.20)						
<b>Non-Chlorinated Phenolics</b>												
2,4-Dimethylphenol	59	µg/L		ND (0.50)	ND (0.50)	ND (0.50)						
2,4-Dinitrophenol	10	µg/L		ND (1.0)	ND (1.0)	ND (2.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Phenol	890	µg/L		ND (0.50)	ND (0.50)	ND (0.50)						
<b>Polycyclic Aromatic Hydrocarbons</b>												
Acenaphthene	4.1	µg/L		ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)					
Acenaphthylene	1	µg/L		ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)					
Anthracene	2.4	µg/L		ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)					
Benzo(a)anthracene	1	µg/L		ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)					
Benzo(a)pyrene	0.01	µg/L		ND (0.0050)	ND (0.0050)	ND (0.0050)						
Benzo(b)fluoranthene/Benzo(j)fluoranthene	0.1	µg/L		ND (0.10)	ND (0.010)	ND (0.010)	ND (0.010)					
Benzo(g,h,i)perylene	0.2	µg/L		ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)					
Benzo(k)fluoranthene	0.1	µg/L		ND (0.10)	ND (0.010)	ND (0.010)	ND (0.010)					
Chrysene	0.1	µg/L		ND (0.10)	ND (0.010)	ND (0.010)	ND (0.010)					
Dibenz(a,h)anthracene	0.2	µg/L		ND (0.20)	ND (0.0050)	ND (0.0050)	ND (0.0050)					
Fluoranthene	0.41	µg/L		ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)					
Fluorene	120	µg/L		ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)					
Indeno(1,2,3-cd)pyrene	0.2	µg/L		ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)					
1-Methylnaphthalene	3.2	µg/L		ND (0.40)	ND (0.010)	ND (0.010)	ND (0.010)					
2-Methylnaphthalene	3.2	µg/L		ND (0.40)	ND (0.010)	ND (0.010)	ND (0.010)					
Naphthalene	11	µg/L		ND (0.20)	ND (0.050)	ND (0.050)	ND (0.050)					
Phenanthrene	1	µg/L		ND (0.20)	ND (0.020)	ND (0.020)	ND (0.020)					
Pyrene	4.1	µg/L		ND (0.20)	ND (0.010)	ND (0.010)	ND (0.010)					
1-Methylnaphthalene/2-Methylnaphthalene	3.2	µg/L		ND (0.6)	ND (0.015)	ND (0.015)	ND (0.015)					

- Notes:
- (1) Ontario Drinking Water Quality Standards (ODWQS), MECP, dated June 2006 and updated periodically.
  - (2) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Coarse Textured Soils, as provided in the Table 1 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.
  - (3) Metals concentrations in 2020 are total  
µg/L Micrograms per litre.  
J Estimated concentration.  
J+ Estimated concentration, biased high.  
ND or < Not detected at the associated reporting limit (RL).  
3.36 Exceedance of Standards.  
ND (0.044) Detection limit exceeds standards



Table 4.2

Historical Monitoring Well Data
2374868 Ontario Inc.
6678 Wellington Road 34
Wellington County, ON

Table 2
Standards(2)

Table with 25 columns (Location: BH-213, BH-213, BH-213, BH-213, BH-213, BH-213, BH-213, BH-213, BH-214, BH-214, BH-219, BH-219, BH-219, BH-219, BH-219, BH-219, BH-219, MW1-20, MW1-20, MW1-20, MW1-20, MW1-20, MW1-20) and multiple rows for Physical Tests, Anions and Nutrients, Cyanides, Dissolved Metals, Aggregate Organics, and Volatile Organic Compounds.





Table 4.2  
Historical Monitoring Well Data  
2374868 Ontario Inc.  
6678 Wellington Road 34  
Wellington County, ON

Location:	BH-213	BH-213	BH-213	BH-213	BH-213	BH-213	BH-213	BH-213	BH-214	BH-214	BH-219	BH-219	BH-219	BH-219	BH-219	BH-219	BH-219	BH-219	MW1-20	MW1-20	MW1-20	MW1-20	MW1-20	MW1-20
Sample Date:	4/28/2023	6/29/2023	9/11/2023	11/3/2023	2/23/2024	8/9/2024	10/25/2024	4/28/2023	6/29/2023	4/28/2023	6/29/2023	9/11/2023	11/3/2023	2/23/2024	5/10/2024	8/9/2024	10/25/2024	11/25/2020	12/4/2020	10/5/2022	10/5/2022	4/28/2023	6/28/2023	

Table 2  
Standards<sup>(2)</sup>

Units

**Polycyclic Aromatic Hydrocarbons cont'd**

Compound	Standard (µg/L)	Unit	BH-213 (4/28/2023)	BH-213 (6/29/2023)	BH-213 (9/11/2023)	BH-213 (11/3/2023)	BH-213 (2/23/2024)	BH-213 (8/9/2024)	BH-213 (10/25/2024)	BH-214 (4/28/2023)	BH-214 (6/29/2023)	BH-219 (4/28/2023)	BH-219 (6/29/2023)	BH-219 (9/11/2023)	BH-219 (11/3/2023)	BH-219 (2/23/2024)	BH-219 (5/10/2024)	BH-219 (8/9/2024)	BH-219 (10/25/2024)	MW1-20 (11/25/2020)	MW1-20 (12/4/2020)	MW1-20 (10/5/2022)	MW1-20 (10/5/2022)	MW1-20 (4/28/2023)	MW1-20 (6/28/2023)
Fluoranthene	0.41	µg/L	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)				
Fluorene	120	µg/L	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)				
Indeno(1,2,3-cd)pyrene	0.2	µg/L	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)				
1-Methylnaphthalene	3.2	µg/L	ND (0.010)	ND (0.010)	ND (0.010)	0.031	0.026	0.028	0.010	0.021	0.010	0.019	0.019	0.031	0.018	0.047	ND (0.020)	ND (0.40)	ND (0.40)	0.017	ND (0.010)				
2-Methylnaphthalene	3.2	µg/L	ND (0.010)	ND (0.010)	ND (0.010)	0.040	0.032	0.033	0.013	0.026	0.012	0.024	0.024	0.038	0.022	0.094	ND (0.020)	ND (0.40)	ND (0.40)	0.022	ND (0.010)				
Naphthalene	11	µg/L	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)				
Phenanthrene	1	µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)				
Pyrene	4.1	µg/L	ND (0.010)	ND (0.010)	ND (0.010)	0.012	0.013	0.010	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	0.010	0.013	ND (0.010)	0.096	0.109	ND (0.20)	ND (0.20)	0.018	ND (0.010)				
1-Methylnaphthalene/2-Methylnaphthalene	3.2	µg/L	ND (0.015)	ND (0.015)	ND (0.015)	0.071	0.058	0.061	0.023	0.047	0.022	0.043	0.043	0.069	0.040	0.141	ND (0.028)	ND (0.6)	ND (0.6)	0.039	ND (0.015)				

Notes:

- (1) Ontario Drinking Water Quality Standards (ODWQS), MECP, dated June 2006 and updated periodically.
- (2) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Coarse Textured Soils, as provided in the Table 1 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental

µg/L Micrograms per litre.  
 J Estimated concentration.  
 J+ Estimated concentration, biased high.  
 ND or < Not detected at the associated reporting limit (RL).  
 3.36 Exceedance of Standards.  
 ND (3.36) Detection limit exceeds standards



Table 4.2

Historical Monitoring Well Data
2374868 Ontario Inc.
6678 Wellington Road 34
Wellington County, ON

Table 2
Standards(2)

Table with columns for Location (MW1-20, MW2-20, MW3-20), Sample Date, Units, and various chemical parameters including Physical Tests, Anions and Nutrients, Cyanides, Dissolved Metals, Aggregate Organics, and Volatile Organic Compounds.







Table 4.2

Historical Monitoring Well Data
2374868 Ontario Inc.
6678 Wellington Road 34
Wellington County, ON

Table 2
Standards(2)

Table with columns for Location (MW3-20, MW4-23, MW5-23), Sample Date (10/5/2022, 4/28/2023, 6/29/2023, 9/11/2023, 11/3/2023, 2/23/2024, 5/10/2024, 8/9/2024, 9/10/2024, 10/25/2024, 6/29/2023, 9/11/2023, 11/3/2023, 2/23/2024, 5/10/2024, 8/9/2024, 9/10/2024, 10/25/2024, 6/29/2023), Units, and various chemical categories including Physical Tests, Anions and Nutrients, Cyanides, Dissolved Metals, Aggregate Organics, and Volatile Organic Compounds.









Table 4.2

Historical Monitoring Well Data
2374868 Ontario Inc.
6678 Wellington Road 34
Wellington County, ON

Table with columns: Location (MW5-23), Sample Date (9/11/2023, 11/3/2023, 2/23/2024, 5/10/2024, 8/9/2024, 9/10/2024, 10/25/2024), and 14 Field Blank columns. Rows include Volatile Organic Compounds, Hydrocarbons, Phthalate Esters, Semi-Volatile Organics, Chlorinated Phenolics, Non-Chlorinated Phenolics, and Polycyclic Aromatic Hydrocarbons. A 'Table 2 Standards (2)' box highlights the 'ND (0.88)' value for 4-Chloroaniline.





Table 4.3

Supplementary Sampling Events  
 2374868 Ontario Inc.  
 6678 Wellington Road 34  
 Wellington County, ON

Location:	MW3-20	MW3-20	MW4-23	MW4-23	MW5-23	MW5-23
Sample Date:	9/10/2024	10/25/2024	9/10/2024	10/25/2024	9/10/2024	10/25/2024

General Chemistry	ODWQS <sup>(1)</sup>	Table 2 Standards <sup>(2)</sup>	Units						
				MW3-20	MW3-20	MW4-23	MW4-23	MW5-23	MW5-23
Alkalinity, total (as CaCO <sub>3</sub> )	--	--	mg/L	1230	6540	4700	2640	2530	2220
Ammonia-N	--	--	mg/L	0.0081	0.0242	0.391	0.0193	0.148	0.0211
Biochemical oxygen demand (BOD)	--	--	mg/L	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	3.8
Chloride	--	790	mg/L	9.57	9.61	10.7	11	9.16	6.48
Dissolved organic carbon (DOC) (dissolved)	--	--	mg/L	2.97	2.23	1.85	1.69	2.54	6.85
Hardness	--	--	mg/L	490	454	373	314	283	263
Nitrate (as N)	10.0	--	mg/L	0.864	0.748	1.55	1.78	1.65	1.24
Nitrite (as N)	1.0	--	mg/L	ND (0.010)	ND (0.010)	0.112	ND (0.010)	ND (0.010)	ND (0.010)
Phosphorus	--	--	mg/L	0.69	6.13	7.68	9.4	2.78	9.42
Sulfate	--	--	mg/L	19.9	22.3	16.2	13.5	4.19	4.41
Total kjeldahl nitrogen (TKN)	--	--	mg/L	0.434	0.365	4.77	0.748	0.864	2.85

Notes:

- (1) Ontario Drinking Water Quality Standards (ODWQS), MECP, dated June 2006 and updated periodically.
- (2) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Coarse Textured Soils, as provided in the Table 1 of the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

µg/L Micrograms per litre.  
 J Estimated concentration.  
 J+ Estimated concentration, biased high.  
 ND or < Not detected at the associated reporting limit (RL).  
3.36 Exceedance of Standards.





**Table 4.4**  
**Historical Surface Water Data**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34  
 Wellington County, ON

Sample Date: 1-Jan-2017 1-Feb-2017 1-Mar-2017 1-Apr-2017 1-May-2017 1-Jun-2017 1-Jul-2017 1-Aug-2017 1-Sep-2017 1-Oct-2017 1-Nov-2017 1-Nov-2017 1-Dec-2017 1-Dec-2017 1-Jan-2018 1-Jan-2018 1-Feb-2018 1-Feb-2018 1-Mar-2018 1-Mar-2018 1-Apr-2018 1-Apr-2018 1-May-2018

	Table 2 Standards <sup>(2)</sup>	PWQO Standards <sup>(3)</sup>	Units	1-Jan-2017	1-Feb-2017	1-Mar-2017	1-Apr-2017	1-May-2017	1-Jun-2017	1-Jul-2017	1-Aug-2017	1-Sep-2017	1-Oct-2017	1-Nov-2017	1-Nov-2017	1-Dec-2017	1-Dec-2017	1-Jan-2018	1-Jan-2018	1-Feb-2018	1-Feb-2018	1-Mar-2018	1-Mar-2018	1-Apr-2018	1-Apr-2018	1-May-2018	
<b>Volatile Organic Compounds (Water) cont'd</b>																											
Ethylbenzene	2.4	8	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
n-Hexane	51	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl Ethyl Ketone	1800	400	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl Isobutyl Ketone	640	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTBE	15	200	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	5.4	4	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1,2-Tetrachloroethane	1.1	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	1	70	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	1.6	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	24	0.8	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	200	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	4.7	800	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trichloroethylene	1.6	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane	150	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	0.5	600	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
m+p-Xylenes	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	--	40	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	300	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Hydrocarbons (Water)</b>																											
F1 (C6-C10)	750	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F1-BTEX	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F2 (C10-C16)	150	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F2-Naphth	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F3 (C16-C34)	500	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F3-PAH	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F4 (C34-C50)	500	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Hydrocarbons (C6-C50)	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Semi-Volatile Organics (Water)</b>																											
Diethylphthalate	38	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	38	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	10	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Biphenyl	0.5	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	10	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	0.5	0.6	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	5	4	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	5	6	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	70	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroisopropyl)ether	120	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroethyl)ether	5	200	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4+2,6-Dinitrotoluene	5	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	8.9	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	20	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	30	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	8.9	18	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2	18	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	59	8	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	10	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	890	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Polychlorinated Biphenyls (Water)</b>																											
Aroclor 1242	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	3	0.001	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Aggregate Organics (Water)</b>																											
BOD	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Physical Tests (Water)</b>																											
pH	--	6.5-8.5	pH Units	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Suspended Solids	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Anions and Nutrients (Water)</b>																											
Phosphorus, Total	--	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



**Table 4.4**  
**Historical Surface Water Data**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34  
 Wellington County, ON

Sample Date: 1-Jan-2017 1-Feb-2017 1-Mar-2017 1-Apr-2017 1-May-2017 1-Jun-2017 1-Jul-2017 1-Aug-2017 1-Sep-2017 1-Oct-2017 1-Nov-2017 1-Nov-2017 1-Dec-2017 1-Dec-2017 1-Jan-2018 1-Jan-2018 1-Feb-2018 1-Feb-2018 1-Mar-2018 1-Mar-2018 1-Apr-2018 1-Apr-2018 1-May-2018

	Table 2 Standards <sup>(2)</sup>		Units	Sample Date																							
	Table 2 Standards <sup>(2)</sup>	PWQO Standards <sup>(3)</sup>		1-Jan-2017	1-Feb-2017	1-Mar-2017	1-Apr-2017	1-May-2017	1-Jun-2017	1-Jul-2017	1-Aug-2017	1-Sep-2017	1-Oct-2017	1-Nov-2017	1-Nov-2017	1-Dec-2017	1-Dec-2017	1-Jan-2018	1-Jan-2018	1-Feb-2018	1-Feb-2018	1-Mar-2018	1-Mar-2018	1-Apr-2018	1-Apr-2018	1-May-2018	
<b>Organic / Inorganic Carbon (Water)</b>																											
Total Organic Carbon	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>																											
Acenaphthene	4.1	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	1	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	2.4	0.0008	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	1	0.0004	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.01	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.1	0.0002	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	0.00002	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.1	0.0002	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.1	0.0001	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(ah)anthracene	0.2	0.002	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	0.41	0.0008	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	120	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	0.2	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1+2-Methylnaphthalenes	3.2	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	3.2	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	3.2	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	11	7	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	1	0.03	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	4.1	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Notes:**  
 (1) Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.  
 (2) Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment PWQO=Provincial Water Quality Objective, MECP, February 1999  
 (3) IPWQO= Interim Provincial Water Quality Objective, MECP, February 1999  
 (4) The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75  
 (5) The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100  
 (\*) The PWQO is for Dissolved Metals  
 -- No data or Standard available.  
 ND Not detected at the associated detection limit (DL).  
 µg/L microgram/liter  
 cfu /mL colony forming units/milliliter  
 Concentration greater then referenced 2011 Table 2 Standards.



Table 4.4  
Historical Surface Water Data  
2374868 Ontario Inc.  
6678 Wellington Road 34  
Wellington County, ON

Location: SWP  
Sample Date: 1-May-2018 1-Jun-2018 1-Jun-2018 1-Jul-2018 1-Jul-2018 1-Aug-2018 1-Aug-2018 1-Sep-2018 1-Sep-2018 1-Oct-2018 1-Oct-2018 1-Nov-2018 1-Nov-2018 1-Dec-2018 1-Dec-2018 1-Jan-2019 1-Jan-2019 1-Feb-2019 1-Feb-2019 1-Mar-2019 1-Mar-2019 1-Mar-2019 1-Apr-2019

Table 2 Standards <sup>(2)</sup>	PWQO Standards <sup>(3)</sup>
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Units

Metals	Table 2 Standards <sup>(2)</sup>	PWQO Standards <sup>(3)</sup>	Units	1-May-2018	1-Jun-2018	1-Jun-2018	1-Jul-2018	1-Jul-2018	1-Aug-2018	1-Aug-2018	1-Sep-2018	1-Sep-2018	1-Oct-2018	1-Oct-2018	1-Nov-2018	1-Nov-2018	1-Dec-2018	1-Dec-2018	1-Jan-2019	1-Jan-2019	1-Feb-2019	1-Feb-2019	1-Mar-2019	1-Mar-2019	1-Mar-2019	1-Apr-2019
Aluminum	--	75*	µg/L	48.8	34.8	41.4	40.4	34.6	29.3	39.1	34.4	40.7	45.6	33.8	33.3	20.5	55.3	29.9	48.7	52.6	42.5	43.1	33.5	38.9	19.5	
Antimony	6	20	µg/L	ND(2)																						
Arsenic	25	5	µg/L	ND(2)																						
Barium	1000	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Beryllium (4)	4	1100	µg/L	ND(2)																						
Bismuth	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Boron (total)	5000	200	µg/L	151	176	163	151	177	187	143	152	138	141	172	113	159	120	88	133	91	109	127	102	99	89	
Cadmium (5)	2.7	0.5	µg/L	ND(0.2)																						
Calcium	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Cesium	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Chromium	50	8.9	µg/L	ND(2)																						
Chromium, Hexavalent	25	1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Cobalt	3.8	0.9	µg/L	ND(0.5)																						
Copper	87	5	µg/L	1.42	1.55	1.94	1.94	1.31	2.25	1.53	1.88	1.64	1.34	2.01	2.10	1.67	4.09	2.48	2.45	2.19	1.12	3.47	2.77	1.53	3.33	
Iron	--	300	µg/L	276	212	185	200	157	176	168	219	223	291	266	231	198	165	190	224	187	158	193	213	154	189	
Lead (6)	10	5	µg/L	ND(2)																						
Lithium	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Magnesium	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Manganese	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Mercury	0.29	0.2*	µg/L	ND(0.2)																						
Molybdenum	70	40	µg/L	ND(2)																						
Nickel	100	25	µg/L	ND(2)																						
Phosphorus	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Potassium	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Rubidium	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Selenium	10	100	µg/L	ND(5)																						
Silicon	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Silver	1.5	0.1	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sodium	490000	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Strontium	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sulfur	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Tellurium	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Thallium	2.0	0.3	µg/L	ND(0.2)																						
Thorium	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Tin	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Titanium	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Tungsten	--	30.0	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Uranium	20.0	5.0	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Vanadium	6.2	6.0	µg/L	ND(2)																						
Zinc	1100	20	µg/L	9.9	10.4	11.9	8.8	10.2	12.3	9.5	9.6	7.8	8.9	6.2	10.1	8.8	12.4	10.6	11.4	9.8	12.9	10.4	11.1	9.3	8.5	
Zirconium	--	4	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Total Plate Count	--	--	cfu	200	200	240	120	160	180	100	120	60	250	190	100	160	250	280	220	310	180	200	140	250	200	
E. coli	--	100 cfu/100 mL	cfu/mL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Volatle Organic Compounds (Water)</b>																										
Acetone	2700	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Benzene	5	100	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Bromodichloromethane	16	200	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Bromoform	25	60	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Bromomethane	0.89	0.9	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Carbon tetrachloride	0.79	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Chlorobenzene	30	15	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Chloroform	2.4	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Dibromochloromethane	25	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dibromoethane	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichlorobenzene	3	2.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,3-Dichlorobenzene	59	2.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,4-Dichlorobenzene	1	4	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Dichlorodifluoromethane	590	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,1-Dichloroethane	5	200	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichloroethane	1.6	100	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,1-Dichloroethylene	1.6	40	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
cis-1,2-Dichloroethylene	1.6	200	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
trans-1,2-Dichloroethylene	1.6	200	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Methylene Chloride	50	100	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichloropropane	5	0.7	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,3-Dichloropropene (cis & tra	0.5	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
cis-1,3-Dichloropropene	0.5	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
trans-1,3-Dichloropropene	0.5	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	



**Table 4.4**  
**Historical Surface Water Data**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34  
 Wellington County, ON

Sample Date: 1-May-2018 1-Jun-2018 1-Jun-2018 1-Jul-2018 1-Jul-2018 1-Aug-2018 1-Aug-2018 1-Sep-2018 1-Sep-2018 1-Oct-2018 1-Oct-2018 1-Nov-2018 1-Nov-2018 1-Dec-2018 1-Dec-2018 1-Jan-2019 1-Jan-2019 1-Feb-2019 1-Feb-2019 1-Mar-2019 1-Mar-2019 1-Apr-2019

Table 2 Standards <sup>(2)</sup>		PWQO Standards <sup>(3)</sup>		Units																			
<b>Volatile Organic Compounds (Water) cont'd</b>																							
Ethylbenzene	2.4	8	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
n-Hexane	51	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Methyl Ethyl Ketone	1800	400	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Methyl Isobutyl Ketone	640	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MTBE	15	200	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Styrene	5.4	4	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,1,1,2-Tetrachloroethane	1.1	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,1,2,2-Tetrachloroethane	1	70	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Tetrachloroethylene	1.6	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Toluene	24	0.8	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,1,1-Trichloroethane	200	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,1,2-Trichloroethane	4.7	800	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Trichloroethylene	1.6	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Trichlorofluoromethane	150	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Vinyl chloride	0.5	600	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
m+p-Xylenes	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
o-Xylene	--	40	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Xylenes (Total)	300	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Hydrocarbons (Water)</b>																							
F1 (C6-C10)	750	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
F1-BTEX	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
F2 (C10-C16)	150	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
F2-Naphth	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
F3 (C16-C34)	500	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
F3-PAH	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
F4 (C34-C50)	500	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Total Hydrocarbons (C6-C50)	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Semi-Volatile Organics (Water)</b>																							
Diethylphthalate	38	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Dimethylphthalate	38	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Bis(2-ethylhexyl)phthalate	10	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Biphenyl	0.5	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4-Chloroaniline	10	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3,3'-Dichlorobenzidine	0.5	0.6	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4-Dinitrotoluene	5	4	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,6-Dinitrotoluene	5	6	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,2,4-Trichlorobenzene	70	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Bis(2-chloroisopropyl)ether	120	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Bis(2-chloroethyl)ether	5	200	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4+2,6-Dinitrotoluene	5	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2-Chlorophenol	8.9	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4-Dichlorophenol	20	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Pentachlorophenol	30	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4,5-Trichlorophenol	8.9	18	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4,6-Trichlorophenol	2	18	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4-Dimethylphenol	59	8	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4-Dinitrophenol	10	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Phenol	890	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Polychlorinated Biphenyls (Water)</b>																							
Aroclor 1242	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Aroclor 1248	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Aroclor 1254	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Aroclor 1260	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Total PCBs	3	0.001	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Aggregate Organics (Water)</b>																							
BOD	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Physical Tests (Water)</b>																							
pH	--	6.5-8.5	pH Units	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Total Suspended Solids	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Anions and Nutrients (Water)</b>																							
Phosphorus, Total	--	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	







**Table 4.4**  
**Historical Surface Water Data**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34  
 Wellington County, ON

Sample Date: 1-Apr-2019 1-May-2019 1-May-2019 1-Jun-2019 1-Jun-2019 1-Jul-2019 1-Jul-2019 1-Aug-2019 1-Aug-2019 1-Sep-2019 1-Sep-2019 1-Oct-2019 1-Oct-2019 1-Nov-2019 1-Nov-2019 1-Dec-2019 1-Dec-2019 3-Jan-2020 3-Jan-2020 7-Feb-2020 7-Feb-2020 10-Mar-2020

Table 2 Standards <sup>(2)</sup>		PWQO Standards <sup>(3)</sup>	Units	1-Apr-2019	1-May-2019	1-May-2019	1-Jun-2019	1-Jun-2019	1-Jul-2019	1-Jul-2019	1-Aug-2019	1-Aug-2019	1-Sep-2019	1-Sep-2019	1-Oct-2019	1-Oct-2019	1-Nov-2019	1-Nov-2019	1-Dec-2019	1-Dec-2019	3-Jan-2020	3-Jan-2020	7-Feb-2020	7-Feb-2020	10-Mar-2020		
<b>Volatile Organic Compounds (Water) cont'd</b>																											
Ethylbenzene	2.4	8	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
n-Hexane	51	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Methyl Ethyl Ketone	1800	400	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Methyl Isobutyl Ketone	640	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MTBE	15	200	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Styrene	5.4	4	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,1,1,2-Tetrachloroethane	1.1	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,1,2,2-Tetrachloroethane	1	70	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Tetrachloroethylene	1.6	50	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Toluene	24	0.8	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,1,1-Trichloroethane	200	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,1,2-Trichloroethane	4.7	800	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Trichloroethylene	1.6	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Trichlorofluoromethane	150	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Vinyl chloride	0.5	600	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
m+p-Xylenes	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
o-Xylene	--	40	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Xylenes (Total)	300	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Hydrocarbons (Water)</b>																											
F1 (C6-C10)	750	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
F1-BTEX	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
F2 (C10-C16)	150	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
F2-Naphth	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
F3 (C16-C34)	500	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
F3-PAH	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
F4 (C34-C50)	500	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Total Hydrocarbons (C6-C50)	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Semi-Volatile Organics (Water)</b>																											
Diethylphthalate	38	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Dimethylphthalate	38	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Bis(2-ethylhexyl)phthalate	10	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Biphenyl	0.5	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4-Chloroaniline	10	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3,3'-Dichlorobenzidine	0.5	0.6	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4-Dinitrotoluene	5	4	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,6-Dinitrotoluene	5	6	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,2,4-Trichlorobenzene	70	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Bis(2-chloroisopropyl)ether	120	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Bis(2-chloroethyl)ether	5	200	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4+2,6-Dinitrotoluene	5	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2-Chlorophenol	8.9	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4-Dichlorophenol	20	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Pentachlorophenol	30	0.5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4,5-Trichlorophenol	8.9	18	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4,6-Trichlorophenol	2	18	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4-Dimethylphenol	59	8	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2,4-Dinitrophenol	10	10	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Phenol	890	5	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Polychlorinated Biphenyls (Water)</b>																											
Aroclor 1242	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Aroclor 1248	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Aroclor 1254	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Aroclor 1260	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Total PCBs	3	0.001	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Aggregate Organics (Water)</b>																											
BOD	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Physical Tests (Water)</b>																											
pH	--	6.5-8.5	pH Units	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Total Suspended Solids	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Anions and Nutrients (Water)</b>																											
Phosphorus, Total	--	20	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	



**Table 4.4**  
**Historical Surface Water Data**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34  
 Wellington County, ON

Sample Date: 1-Apr-2019 1-May-2019 1-May-2019 1-Jun-2019 1-Jun-2019 1-Jul-2019 1-Jul-2019 1-Aug-2019 1-Aug-2019 1-Sep-2019 1-Sep-2019 1-Oct-2019 1-Oct-2019 1-Nov-2019 1-Nov-2019 1-Dec-2019 1-Dec-2019 3-Jan-2020 3-Jan-2020 7-Feb-2020 7-Feb-2020 10-Mar-2020

	Table 2 Standards <sup>(2)</sup>		Units	Sample Date																							
	Table 2 Standards <sup>(2)</sup>	PWQO Standards <sup>(3)</sup>		1-Apr-2019	1-May-2019	1-May-2019	1-Jun-2019	1-Jun-2019	1-Jul-2019	1-Jul-2019	1-Aug-2019	1-Aug-2019	1-Sep-2019	1-Sep-2019	1-Oct-2019	1-Oct-2019	1-Nov-2019	1-Nov-2019	1-Dec-2019	1-Dec-2019	3-Jan-2020	3-Jan-2020	7-Feb-2020	7-Feb-2020	10-Mar-2020		
<b>Organic / Inorganic Carbon (Water)</b>																											
Total Organic Carbon	--	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>																											
Acenaphthene	4.1	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Acenaphthylene	1	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Anthracene	2.4	0.0008	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Benzo(a)anthracene	1	0.0004	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Benzo(a)pyrene	0.01	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Benzo(b)fluoranthene	0.1	0.0002	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Benzo(g,h,i)perylene	0.2	0.0002	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Benzo(k)fluoranthene	0.1	0.0002	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Chrysene	0.1	0.0001	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Dibenzo(ah)anthracene	0.2	0.002	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Fluoranthene	0.41	0.0008	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Fluorene	120	0.2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Indeno(1,2,3-cd)pyrene	0.2	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1+2-Methylnaphthalenes	3.2	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1-Methylnaphthalene	3.2	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2-Methylnaphthalene	3.2	2	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Naphthalene	11	7	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Phenanthrene	1	0.03	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Pyrene	4.1	--	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

**Notes:**

(1) Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.

(2) Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment PWQO=Provincial Water Quality Objective, MECP, February 1999

(3) IPWQO= Interim Provincial Water Quality Objective, MECP, February 1999

(4) The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO<sub>3</sub> (mg/L) is >75

(5) The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO<sub>3</sub> (mg/L) is >100

(\*) The PWQO is for Dissolved Metals

-- No data or Standard available.

ND Not detected at the associated detection limit (DL).

µg/L microgram/liter

cfu/mL colony forming units/milliliter

Concentration greater than referenced 2011 Table 2 Standards.



Table 4.4  
Historical Surface Water Data  
2374868 Ontario Inc.  
6678 Wellington Road 34  
Wellington County, ON

Location: SWP  
Sample Date: 10-Mar-2020 3-Apr-2020 3-Apr-2020 28-May-2020 4-Jun-2020 11-Jun-2020 18-Jun-2020 25-Jun-2020 16-Jul-2020 6-Aug-2020 27-Aug-2020 3-Sep-2020 10-Sep-2020 17-Sep-2020 24-Sep-2020 1-Oct-2020 8-Oct-2020 15-Oct-2020 22-Oct-2020 29-Oct-2020 5-Nov-2020 12-Nov-2020 19-Nov-2020 26-Nov-2020

Table 2  
Standards<sup>(2)</sup> PWQO Standards<sup>(3)</sup>

Units

Metals

Table with 26 columns (Metals) and 26 rows (Sample Dates). Columns include Aluminum, Antimony, Arsenic, Barium, Beryllium (4), Bismuth, Boron (total), Cadmium (5), Calcium, Cesium, Chromium, Chromium, Hexavalent, Cobalt, Copper, Iron, Lead (6), Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorus, Potassium, Rubidium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc, Zirconium. Values range from ND to 576.

Total Plate Count -- -- cfu 200 180 250 --  
E. coli -- 100 cfu/100 mL cfu/mL --

Volatile Organic

Table with 26 columns (Compounds) and 26 rows (Sample Dates). Columns include Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon tetrachloride, Chlorobenzene, Chloroform, Dibromochloromethane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, Methylene Chloride, 1,2-Dichloropropane, 1,3-Dichloropropene (cis & tra), cis-1,3-Dichloropropene, trans-1,3-Dichloropropene. Values range from ND to 2700.







Table 4.4  
Historical Surface Water Data  
2374868 Ontario Inc.  
6678 Wellington Road 34  
Wellington County, ON

Location: SWP  
Sample Date: 3-Dec-2020 10-Dec-2020 17-Dec-2020 23-Dec-2020 30-Dec-2020 7-Jan-2021 21-Jan-2021 28-Jan-2021 4-Feb-2021 11-Feb-2021 18-Feb-2021 25-Feb-2021 4-Mar-2021 11-Mar-2021 18-Mar-2021 25-Mar-2021 1-Apr-2021 8-Apr-2021 15-Apr-2021 22-Apr-2021 29-Apr-2021 6-May-2021 13-May-2021 20-May-2021

Table 2  
Standards<sup>(2)</sup> PWQO Standards<sup>(3)</sup>

Units

Metals

Table with 25 columns (Location, Sample Date, and 23 SWP locations) and 25 rows of metal data including Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorus, Potassium, Rubidium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc, and Zirconium.

Table with 25 columns (Location, Sample Date, and 23 SWP locations) and 2 rows of microbiological data: Total Plate Count and E. coli.

Volatile Organic Compounds (Water)

Table with 25 columns (Location, Sample Date, and 23 SWP locations) and 25 rows of volatile organic compound data including Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon tetrachloride, Chlorobenzene, Chloroform, Dibromochloromethane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, Methylene Chloride, 1,2-Dichloropropane, 1,3-Dichloropropene (cis & tra), cis-1,3-Dichloropropene, and trans-1,3-Dichloropropene.







Table 4.4
Historical Surface Water Data
2374868 Ontario Inc.
6678 Wellington Road 34
Wellington County, ON

Table with 23 columns: Location, SWP, SWP. Row 1: Sample Date: 27-May-2021, 3-Jun-2021, 10-Jun-2021, 17-Jun-2021, 24-Jun-2021, 2-Jul-2021, 7-Jul-2021, 15-Jul-2021, 22-Jul-2021, 29-Jul-2021, 12-Aug-2021, 19-Aug-2021, 26-Aug-2021, 2-Sep-2021, 9-Sep-2021, 16-Sep-2021, 23-Sep-2021, 30-Sep-2021, 7-Oct-2021, 14-Oct-2021, 21-Oct-2021, 28-Oct-2021, 4-Nov-2021, 12-Nov-2021.

Table 2 Standards(2) PWQO Standards(3)

Units

Metals

Main data table with 23 columns for sampling dates and 23 rows for various metals (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Chromium Hexavalent, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorus, Potassium, Rubidium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc, Zirconium). Values include detection limits and concentrations in various units.

Total Plate Count E. coli: 100 cfu/100 mL

Volatile Organic Compounds (Water)

Main data table for Volatile Organic Compounds (Water) with 23 columns for sampling dates and 23 rows for various compounds (Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon tetrachloride, Chlorobenzene, Chloroform, Dibromochloromethane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, Methylene Chloride, 1,2-Dichloropropane, 1,3-Dichloropropane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene).



Table 4.4

Historical Surface Water Data
2374868 Ontario Inc.
6678 Wellington Road 34
Wellington County, ON

Sample Date: 27-May-2021 3-Jun-2021 10-Jun-2021 17-Jun-2021 24-Jun-2021 2-Jul-2021 7-Jul-2021 15-Jul-2021 22-Jul-2021 29-Jul-2021 12-Aug-2021 19-Aug-2021 26-Aug-2021 2-Sep-2021 9-Sep-2021 16-Sep-2021 23-Sep-2021 30-Sep-2021 7-Oct-2021 14-Oct-2021 21-Oct-2021 28-Oct-2021 4-Nov-2021 12-Nov-2021

Table 2 Standards(2) PWQO Standards(3)

Units

Volatile Organic

Compounds (Water) cont'd

Table with 27 columns (Compound, Standard, Units, and 26 Sample Dates) for Volatile Organic Compounds including Ethylbenzene, n-Hexane, Methyl Ethyl Ketone, etc.

Hydrocarbons (Water)

Table with 27 columns (Compound, Standard, Units, and 26 Sample Dates) for Hydrocarbons including F1 (C6-C10), F1-BTEX, F2 (C10-C16), etc.

Semi-Volatile Organics (Water)

Table with 27 columns (Compound, Standard, Units, and 26 Sample Dates) for Semi-Volatile Organics including Diethylphthalate, Dimethylphthalate, Bis(2-ethylhexyl)phthalate, etc.

Polychlorinated Biphenyls (Water)

Table with 27 columns (Compound, Standard, Units, and 26 Sample Dates) for Polychlorinated Biphenyls including Aroclor 1242, Aroclor 1248, Aroclor 1254, etc.

Aggregate Organics (Water)

Table with 27 columns (Compound, Standard, Units, and 26 Sample Dates) for Aggregate Organics including BOD.

Physical Tests (Water)

Table with 27 columns (Parameter, Standard, Units, and 26 Sample Dates) for Physical Tests including pH, Total Suspended Solids.

Anions and Nutrients (Water)

Table with 27 columns (Parameter, Standard, Units, and 26 Sample Dates) for Anions and Nutrients including Phosphorus, Total.





Table 4.4  
Historical Surface Water Data  
2374868 Ontario Inc.  
6678 Wellington Road 34  
Wellington County, ON

Location:	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP	SWP
Sample Date:	18-Nov-2021	25-Nov-2021	2-Dec-2021	9-Dec-2021	16-Dec-2021	23-Dec-2021	30-Dec-2021	6-Jan-2022	13-Jan-2022	20-Jan-2022	27-Jan-2022	3-Feb-2022	10-Feb-2022	24-Feb-2022	3-Mar-2022	10-Mar-2022	17-Mar-2022	24-Mar-2022	31-Mar-2022	7-Apr-2022	14-Apr-2022	21-Apr-2022	5-May-2022	12-May-2022	

Table 2 Standards <sup>(2)</sup>	PWQO Standards <sup>(3)</sup>
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Units

Metals

Aluminum	--	75*	µg/L	ND (5)	ND (3)	ND (3)	ND (3)	ND (3)	3.1	ND (3)	9.4	ND (3)	ND (3)	4.4													
Antimony	6	20	µg/L	ND (0.1)																							
Arsenic	25	5	µg/L	2.69	5.9	3.56	2.76	1.16	2.2	1.25	2.6	1.74	1.75	2.05	1.93	1.97	2.38	1.55	1.56	1.57	1.99	1.9	1.82	1.71	1.51	1.16	2.76
Barium	1000	--	µg/L	51.8	51.5	49.1	48.5	49.7	49.1	49.5	51.2	64	51.3	45.7	56	54.2	48.6	53.9	46.7	50.8	50	46.1	49.4	54.6	53.7	62.3	
Beryllium (4)	4	1100	µg/L	ND (0.1)	ND (0.02)																						
Bismuth	--	--	µg/L	ND (0.05)																							
Boron (total)	5000	200	µg/L	ND (10)																							
Cadmium (5)	2.7	0.5	µg/L	ND (0.005)																							
Calcium	--	--	µg/L	ND (0.01)																							
Cesium	--	--	µg/L	73300	70000	64500	66600	68500	71800	69700	73300	72700	75400	66000	77600	69200	75600	74600	70600	75200	74900	67000	73400	72800	75800	71000	79400
Chromium	50	8.9	µg/L	ND (0.5)																							
Chromium, Hexavalent	25	1	µg/L	ND (0.5)																							
Cobalt	3.8	0.9	µg/L	0.12	0.12	ND (0.1)	0.16	ND (0.1)	0.1	0.1	0.15	0.17	0.21	0.2	0.2	ND (0.1)	ND (0.1)	0.16	ND (0.1)	ND (0.1)	ND (0.1)	0.21	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	
Copper	87	5	µg/L	0.65	1.04	0.65	0.65	0.7	0.51	1.53	1.55	3.17	1.83	9.79	3.47	5.83	6.32	7.49	24.4	2.7	5.15	7.46	3.91	7.16	2.42	2.09	2.25
Iron	--	300	µg/L	408	739	412	281	48	295	53	320	170	216	175	154	122	220	115	88	113	138	149	124	76	80	36	379
Lead (6)	10	5	µg/L	0.071	0.108	0.086	0.097	0.134	0.058	0.074	0.127	0.186	0.239	0.373	0.159	0.407	0.161	0.153	0.512	0.076	0.083	0.094	0.088	0.355	0.094	0.07	0.127
Lithium	--	--	µg/L	3.4	3.1	3.2	3.3	3.4	4	3.2	3.9	3.6	3.7	3.3	3.7	4.1	3.7	3.8	4.1	3.7	3.3	3.8	3.7	4.4	3.8	3.2	4.3
Magnesium	--	--	µg/L	32900	34300	31700	34000	33500	35700	36500	34000	35700	34900	33300	35100	35100	35200	35600	34200	37400	33400	31100	36200	35200	36500	35700	35900
Manganese	--	--	µg/L	30.6	26.5	21	19.6	19.6	26.7	22.1	24.6	25.3	28	14.3	14.1	16	13.2	11.3	9.15	11.9	12.3	7.27	10.8	12.7	13.9	14.2	17.9
Mercury	0.29	0.2*	µg/L	ND (0.005)																							
Molybdenum	70	40	µg/L	0.511	0.476	0.498	0.511	0.479	0.495	0.507	0.525	0.543	0.515	0.536	0.502	0.489	0.507	0.454	0.491	0.482	0.491	0.553	0.484	0.487	0.474	0.494	0.477
Nickel	100	25	µg/L	ND (0.5)	0.54	0.87	1.65	1.11	1.36	4.9	3.56	2.28	8.09	4.37	3.05	4.44	1.57	0.94	1.14	1.12	0.95	0.66	0.73				
Phosphorus	--	--	µg/L	ND (3)	6.2	7.8	4.2	ND (3)	4.2	5.2	ND (3)	3.1	ND (3)	3.5	ND (3)	4.4	ND (3)	2.1	ND (2)	ND (3)	ND (3)	3.3	2.2	2.4	ND (20)	2.5	ND (2)
Potassium	--	--	µg/L	1030	967	912	929	901	924	963	1030	1030	1060	993	1100	1000	1080	1020	998	1030	989	912	965	1040	987	959	1090
Rubidium	--	--	µg/L	ND (0.2)	0.2	ND (0.2)	0.2	ND (0.2)	0.2	0.22	ND (0.2)	ND (0.2)	0.23	ND (0.2)	0.2	ND (0.2)	ND (0.2)	0.2									
Selenium	10	100	µg/L	ND (0.05)																							
Silicon	--	--	µg/L	8990	8760	8690	9110	8490	8730	9280	9150	9250	9380	8310	9090	8690	8960	8760	9090	9110	8370	9090	9080	8810	8800	8950	8700
Silver	1.5	0.1	µg/L	ND (0.05)	ND (0.01)	ND (0.01)																					
Sodium	490000	--	µg/L	6810	6990	6970	7030	7030	6850	7410	7070	7470	7510	7160	7730	7370	7550	7470	7450	7440	7190	6750	7590	7860	7520	7470	7830
Strontium	--	--	µg/L	149	149	139	141	136	144	146	151	154	146	136	156	150	146	153	136	150	139	146	148	138	150	144	150
Sulfur	--	--	µg/L	17200	16500	17400	17000	16600	16400	17400	17400	18000	18400	16300	17100	16600	17900	16500	18400	17400	16600	17300	17300	17400	17300	16800	16600
Tellurium	--	--	µg/L	ND (0.2)																							
Thallium	2.0	0.3	µg/L	ND (0.01)	ND (0.01)																						
Thorium	--	--	µg/L	ND (0.1)	ND (0.1)																						
Tin	--	--	µg/L	ND (0.1)	ND (0.1)																						
Titanium	--	--	µg/L	ND (0.3)	ND (0.3)																						
Tungsten	--	30.0	µg/L	ND (0.1)	ND (0.1)																						
Uranium	20.0	5.0	µg/L	0.235	0.225	0.247	0.224	0.214	0.214	0.227	0.223	0.227	0.223	0.227	0.246	0.22	0.248	0.209	0.236	0.226	0.24	0.277	0.221	0.222	0.206	0.206	0.208
Vanadium	6.2	6.0	µg/L	ND (0.5)	ND (0.5)																						
Zinc	1100	20	µg/L	6.9	7.5	6.8	5.7	6.4	6.2	12.3	9.2	19.9	10.4	44.8	16.9	15.6	20.7	21.3	53.4	9.4	10.2	23	14.7	12.1	11.2	8.5	13.2
Zirconium	--	4	µg/L	ND (0.2)	ND (0.2)	ND (0.2)	0.3	ND (0.2)	0.25	0.3	ND (0.2)	0.5	ND (0.2)	0.55	ND (0.2)	ND (0.2)	ND (0.2)										

Total Plate Count	--	--	cfu	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E. coli	--	100 cfu/100 mL	cfu/mL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Volatile Organic Compounds (Water)

Acetone	2700	--	µg/L	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (30)	ND (20)										
Benzene	5	100	µg/L	ND (0.50)	ND																						





Table 4.4  
Historical Surface Water Data  
2374868 Ontario Inc.  
6678 Wellington Road 34  
Wellington County, ON

Sample Date: 18-Nov-2021 25-Nov-2021 2-Dec-2021 9-Dec-2021 16-Dec-2021 23-Dec-2021 30-Dec-2021 6-Jan-2022 13-Jan-2022 20-Jan-2022 27-Jan-2022 3-Feb-2022 10-Feb-2022 24-Feb-2022 3-Mar-2022 10-Mar-2022 17-Mar-2022 24-Mar-2022 31-Mar-2022 7-Apr-2022 14-Apr-2022 21-Apr-2022 5-May-2022 12-May-2022

Table 2 Standards <sup>(2)</sup>	PWQO Standards <sup>(3)</sup>
----------------------------------	-------------------------------

Units

Organic / Inorganic Carbon (Water)

Total Organic Carbon	--	--	µg/L	1530	1480	1610	1610	1800	1400	1260	1460	1620	950	1730	1330	1040	1470	1750	970	830	920	790	1410	1350	1540	970	1390	
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>																												
Acenaphthene	4.1	--	µg/L	ND (0.020)	ND (0.010)																							
Acenaphthylene	1	--	µg/L	ND (0.020)	ND (0.010)																							
Anthracene	2.4	0.0008	µg/L	ND (0.020)	ND (0.010)																							
Benzo(a)anthracene	1	0.0004	µg/L	ND (0.020)	ND (0.010)																							
Benzo(a)pyrene	0.01	--	µg/L	ND (0.010)	ND (0.0050)																							
Benzo(b)fluoranthene	0.1	0.0002	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.2	0.0002	µg/L	ND (0.020)	ND (0.010)																							
Benzo(k)fluoranthene	0.1	0.0002	µg/L	ND (0.020)	ND (0.010)																							
Chrysene	0.1	0.0001	µg/L	ND (0.020)	ND (0.010)																							
Dibenzo(ah)anthracene	0.2	0.002	µg/L	ND (0.020)	ND (0.0050)																							
Fluoranthene	0.41	0.0008	µg/L	ND (0.020)	ND (0.010)																							
Fluorene	120	0.2	µg/L	ND (0.020)	ND (0.010)																							
Indeno(1,2,3-cd)pyrene	0.2	--	µg/L	ND (0.020)	ND (0.010)																							
1+2-Methylnaphthalenes	3.2	--	µg/L	ND (0.028)	ND (0.015)																							
1-Methylnaphthalene	3.2	2	µg/L	ND (0.020)	ND (0.010)																							
2-Methylnaphthalene	3.2	2	µg/L	ND (0.020)	ND (0.010)																							
Naphthalene	11	7	µg/L	ND (0.050)	ND (0.10)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)	ND (0.050)														
Phenanthrene	1	0.03	µg/L	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)																
Pyrene	4.1	--	µg/L	ND (0.020)	ND (0.010)																							

- Notes:**
- (1) Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.
  - (2) Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment PWQO=Provincial Water Quality Objective, MECP, February 1999
  - (3) IPWQO= Interim Provincial Water Quality Objective, MECP, February 1999
  - (4) The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75
  - (5) The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100
  - (\*) The PWQO is for Dissolved Metals
  - No data or Standard available.
  - ND Not detected at the associated detection limit (DL).
  - µg/L microgram/liter
  - cfu /mL colony forming units/milliliter
  - Concentration greater than referenced 2011 Table 2 Standards.



Table 4.4
Historical Surface Water Data
2374868 Ontario Inc.
6678 Wellington Road 34
Wellington County, ON

Location: SWP SWP
Sample Date: 19-May-2022 26-May-2022 2-Jun-2022 9-Jun-2022 16-Jun-2022 23-Jun-2022 30-Jun-2022 7-Jul-2022 14-Jul-2022 21-Jul-2022 28-Jul-2022 11-Aug-2022 18-Aug-2022 25-Aug-2022 1-Sep-2022 8-Sep-2022 15-Sep-2022 22-Sep-2022 29-Sep-2022 6-Oct-2022 20-Oct-2022 27-Oct-2022 3-Nov-2022 10-Nov-2022

Table 2 Standards(2) PWQO Standards(3)

Units

Metals

Table with 25 columns (Metals) and 25 rows (Sample Dates). Includes elements like Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorus, Potassium, Rubidium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc, Zirconium.

Table with 25 columns (Total Plate Count, E. coli) and 25 rows (Sample Dates). Units: cfu, cfu/mL.

Volatile Organic Compounds (Water)

Table with 25 columns (Volatile Organic Compounds) and 25 rows (Sample Dates). Includes compounds like Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon tetrachloride, Chlorobenzene, Chloroform, Dibromochloromethane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, Methylene Chloride, 1,2-Dichloropropane, 1,3-Dichloropropane (cis & tra), cis-1,3-Dichloropropane, trans-1,3-Dichloropropane.



Table 4.4
Historical Surface Water Data
2374868 Ontario Inc.
6678 Wellington Road 34
Wellington County, ON

Sample Date: 19-May-2022 26-May-2022 2-Jun-2022 9-Jun-2022 16-Jun-2022 23-Jun-2022 30-Jun-2022 7-Jul-2022 14-Jul-2022 21-Jul-2022 28-Jul-2022 11-Aug-2022 18-Aug-2022 25-Aug-2022 1-Sep-2022 8-Sep-2022 15-Sep-2022 22-Sep-2022 29-Sep-2022 6-Oct-2022 20-Oct-2022 27-Oct-2022 3-Nov-2022 10-Nov-2022

Table 2 Standards(2) PWQO Standards(3)

Units

Main data table with columns for compound names, standards, units, and 28 sample dates. Categories include Volatile Organic Compounds, Hydrocarbons, Semi-Volatile Organics, Polychlorinated Biphenyls, Aggregate Organics, Physical Tests, and Anions and Nutrients.











Table 4.4
Historical Surface Water Data
2374868 Ontario Inc.
6678 Wellington Road 34
Wellington County, ON

Table with 23 columns: Location, SWP, SWP. Row 1: Sample Date: 15-Jun-2023, 29-Jun-2023, 30-Jun-2023, 6-Jul-2023, 13-Jul-2023, 20-Jul-2023, 27-Jul-2023, 3-Aug-2023, 10-Aug-2023, 17-Aug-2023, 31-Aug-2023, 8-Sep-2023, 21-Sep-2023, 28-Sep-2023, 5-Oct-2023, 20-Oct-2023, 27-Oct-2023, 3-Nov-2023, 10-Nov-2023, 17-Nov-2023, 24-Nov-2023, 1-Dec-2023, 8-Dec-2023, 15-Dec-2023.

Table 2 Standards(2) PWQO Standards(3)

Units

Main data table with 23 columns for sampling dates and 23 columns for results. Rows include Metals (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Chromium Hexavalent, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorus, Potassium, Rubidium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc, Zirconium) and Volatile Organic Compounds (Water) (Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon tetrachloride, Chlorobenzene, Chloroform, Dibromochloromethane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, Methylene Chloride, 1,2-Dichloropropane, 1,3-Dichloropropane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene). Total Plate Count and E. coli are also listed.



Table 4.4
Historical Surface Water Data
2374868 Ontario Inc.
6678 Wellington Road 34
Wellington County, ON

Sample Date: 15-Jun-2023 29-Jun-2023 30-Jun-2023 6-Jul-2023 13-Jul-2023 20-Jul-2023 27-Jul-2023 3-Aug-2023 10-Aug-2023 17-Aug-2023 31-Aug-2023 8-Sep-2023 21-Sep-2023 28-Sep-2023 5-Oct-2023 20-Oct-2023 27-Oct-2023 3-Nov-2023 10-Nov-2023 17-Nov-2023 24-Nov-2023 1-Dec-2023 8-Dec-2023 15-Dec-2023

Table 2 Standards(2) PWQO Standards(3)

Units

Main data table with columns for compound names, standards, and 27 sample dates. Categories include Volatile Organic Compounds (Water), Hydrocarbons (Water), Semi-Volatile Organics (Water), Polychlorinated Biphenyls (Water), Aggregate Organics (Water), Physical Tests (Water), and Anions and Nutrients (Water).



Table 4.4  
Historical Surface Water Data  
2374868 Ontario Inc.  
6678 Wellington Road 34  
Wellington County, ON

Sample Date: 15-Jun-2023 29-Jun-2023 30-Jun-2023 6-Jul-2023 13-Jul-2023 20-Jul-2023 27-Jul-2023 3-Aug-2023 10-Aug-2023 17-Aug-2023 31-Aug-2023 8-Sep-2023 21-Sep-2023 28-Sep-2023 5-Oct-2023 20-Oct-2023 27-Oct-2023 3-Nov-2023 10-Nov-2023 17-Nov-2023 24-Nov-2023 1-Dec-2023 8-Dec-2023 15-Dec-2023

Table 2 Standards <sup>(2)</sup>	PWQO Standards <sup>(3)</sup>
----------------------------------	-------------------------------

Units

Organic / Inorganic Carbon (Water)

Parameter	15-Jun-2023	29-Jun-2023	30-Jun-2023	6-Jul-2023	13-Jul-2023	20-Jul-2023	27-Jul-2023	3-Aug-2023	10-Aug-2023	17-Aug-2023	31-Aug-2023	8-Sep-2023	21-Sep-2023	28-Sep-2023	5-Oct-2023	20-Oct-2023	27-Oct-2023	3-Nov-2023	10-Nov-2023	17-Nov-2023	24-Nov-2023	1-Dec-2023	8-Dec-2023	15-Dec-2023						
Total Organic Carbon	--	--	µg/L	1570	14000	600	1060	750	1010	1170	1410	1270	1350	1270	910	1250	560	1120	1210	1600	920	1170	1500	1150	1320	1350	1470			
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>																														
Acenaphthene	4.1	--	µg/L	ND (0.010)																										
Acenaphthylene	1	--	µg/L	ND (0.010)																										
Anthracene	2.4	0.0008	µg/L	ND (0.010)																										
Benzo(a)anthracene	1	0.0004	µg/L	ND (0.010)																										
Benzo(a)pyrene	0.01	--	µg/L	ND (0.0050)																										
Benzo(b)fluoranthene	0.1	0.0002	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Benzo(g,h,i)perylene	0.2	0.0002	µg/L	ND (0.010)																										
Benzo(k)fluoranthene	0.1	0.0002	µg/L	ND (0.010)																										
Chrysene	0.1	0.0001	µg/L	ND (0.010)																										
Dibenzo(ah)anthracene	0.2	0.0002	µg/L	ND (0.0050)																										
Fluoranthene	0.41	0.0008	µg/L	ND (0.010)																										
Fluorene	120	0.2	µg/L	ND (0.010)																										
Indeno(1,2,3-cd)pyrene	0.2	--	µg/L	ND (0.010)																										
1+2-Methylnaphthalenes	3.2	--	µg/L	ND (0.015)																										
1-Methylnaphthalene	3.2	2	µg/L	ND (0.010)																										
2-Methylnaphthalene	3.2	2	µg/L	ND (0.010)																										
Naphthalene	11	7	µg/L	ND (0.050)																										
Phenanthrene	1	0.03	µg/L	ND (0.020)																										
Pyrene	4.1	--	µg/L	ND (0.010)																										

Notes:

- (1) Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.
- (2) Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment PWQO=Provincial Water Quality Objective, MECP, February 1999
- (3) IPWQO= Interim Provincial Water Quality Objective, MECP, February 1999
- (4) The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75
- (5) The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100
- (\*) The PWQO is for Dissolved Metals
- No data or Standard available.
- ND Not detected at the associated detection limit (DL).
- µg/L microgram/liter
- cfu /mL colony forming units/milliliter
- Concentration greater than referenced 2011 Table 2 Standards.



Table 4.4  
Historical Surface Water Data  
2374868 Ontario Inc.  
6678 Wellington Road 34  
Wellington County, ON

Location: SWP  
Sample Date: 19-Jan-2024 2-Feb-2024 9-Feb-2024 1-Mar-2024 15-Mar-2024 12-Apr-2024 19-Apr-2024 26-Apr-2024 10-May-2024 24-May-2024 31-May-2024 14-Jun-2024 21-Jun-2024 28-Jun-2024 11-Jul-2024 12-Jul-2024 23-Jul-2024 29-Jul-2024 16-Aug-2024 6-Sep-2024 20-Sep-2024

Table 2 Standards<sup>(2)</sup> PWQO Standards<sup>(3)</sup>

Units

Table with columns for chemical names, units, and 22 sample dates. Rows include Metals (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Phosphorus, Potassium, Rubidium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc, Zirconium), Total Plate Count, E. coli, Volatile Organic Compounds (Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon tetrachloride, Chlorobenzene, Chloroform, Dibromochloromethane, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, Methylene Chloride, 1,2-Dichloropropane, 1,3-Dichloropropane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene).



Table 4.4
Historical Surface Water Data
2374868 Ontario Inc.
6678 Wellington Road 34
Wellington County, ON

Sample Date: 19-Jan-2024 2-Feb-2024 9-Feb-2024 1-Mar-2024 15-Mar-2024 12-Apr-2024 19-Apr-2024 26-Apr-2024 10-May-2024 24-May-2024 31-May-2024 14-Jun-2024 21-Jun-2024 28-Jun-2024 11-Jul-2024 12-Jul-2024 23-Jul-2024 29-Jul-2024 16-Aug-2024 6-Sep-2024 20-Sep-2024

Table 2 Standards(2) PWQO Standards(3)

Units

Volatile Organic

Compounds (Water) cont'd

Table with 24 columns (Sample Date) and 23 rows of chemical compounds (Ethylbenzene, n-Hexane, etc.) with values in µg/L.

Hydrocarbons (Water)

Table with 24 columns (Sample Date) and 10 rows of hydrocarbon compounds (F1, F1-BTEX, F2, etc.) with values in µg/L.

Semi-Volatile Organics (Water)

Table with 24 columns (Sample Date) and 28 rows of semi-volatile organic compounds (Diethylphthalate, Dimethylphthalate, etc.) with values in µg/L.

Polychlorinated Biphenyls (Water)

Table with 24 columns (Sample Date) and 5 rows of polychlorinated biphenyl compounds (Aroclor 1242, Aroclor 1248, etc.) with values in µg/L.

Aggregate Organics (Water)

Table with 24 columns (Sample Date) and 1 row for BOD with values in µg/L.

Physical Tests (Water)

Table with 24 columns (Sample Date) and 2 rows for pH and Total Suspended Solids with values in pH Units and µg/L.

Anions and Nutrients (Water)

Table with 24 columns (Sample Date) and 1 row for Phosphorus, Total with values in µg/L.



**Table 4.4**  
**Historical Surface Water Data**  
 2374868 Ontario Inc.  
 6678 Wellington Road 34  
 Wellington County, ON

Sample Date: 19-Jan-2024 2-Feb-2024 9-Feb-2024 1-Mar-2024 15-Mar-2024 12-Apr-2024 19-Apr-2024 26-Apr-2024 10-May-2024 24-May-2024 31-May-2024 14-Jun-2024 21-Jun-2024 28-Jun-2024 11-Jul-2024 12-Jul-2024 23-Jul-2024 29-Jul-2024 16-Aug-2024 6-Sep-2024 20-Sep-2024

	Table 2 Standards <sup>(2)</sup>		PWQO Standards <sup>(3)</sup>		Units																								
						990	1200	1140	1060	520	770	910	800	910	1070	1450	590	870	1050	1200	1010	820	1960	1090	1150	780			
<b>Organic / Inorganic Carbon (Water)</b>																													
Total Organic Carbon	--	--	µg/L		990	1200	1140	1060	520	770	910	800	910	1070	1450	590	870	1050	1200	1010	820	1960	1090	1150	780				
<b>Polycyclic Aromatic Hydrocarbons (Water)</b>																													
Acenaphthene	4.1	--	µg/L	ND (0.010)																									
Acenaphthylene	1	--	µg/L	ND (0.010)																									
Anthracene	2.4	0.0008	µg/L	ND (0.010)																									
Benzo(a)anthracene	1	0.0004	µg/L	ND (0.010)																									
Benzo(a)pyrene	0.01	--	µg/L	ND (0.0050)																									
Benzo(b)fluoranthene	0.1	0.0002	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Benzo(g,h,i)perylene	0.2	0.0002	µg/L	ND (0.010)																									
Benzo(k)fluoranthene	0.1	0.0002	µg/L	ND (0.010)																									
Chrysene	0.1	0.0001	µg/L	ND (0.010)																									
Dibenzo(ah)anthracene	0.2	0.002	µg/L	ND (0.0050)																									
Fluoranthene	0.41	0.0008	µg/L	ND (0.010)																									
Fluorene	120	0.2	µg/L	ND (0.010)																									
Indeno(1,2,3-cd)pyrene	0.2	--	µg/L	ND (0.010)																									
1+2-Methylnaphthalenes	3.2	--	µg/L	ND (0.015)																									
1-Methylnaphthalene	3.2	2	µg/L	ND (0.010)																									
2-Methylnaphthalene	3.2	2	µg/L	ND (0.010)																									
Naphthalene	11	7	µg/L	ND (0.050)																									
Phenanthrene	1	0.03	µg/L	ND (0.020)																									
Pyrene	4.1	--	µg/L	ND (0.010)																									

**Notes:**

(1) Data from Guelph Chemical Laboratories Ltd. (GCL) reports for pond water samples collected by Badger on monthly basis from January 2017 to December 2019.

(2) Full Depth Generic Site Condition Standards in a Potable Ground Water Condition All Types of Property Use, as provided in the Table 2 of the MECP document entitled "Soil, Ground Water and Sediment PWQO=Provincial Water Quality Objective, MECP, February 1999  
IPWQO= Interim Provincial Water Quality Objective, MECP, February 1999

(3) The PWQO for beryllium is 1.1 mg/L when the hardness as CaCO3 (mg/L) is >75

(4) The IPWQO for cadmium is 0.0005 mg/L when the hardness as CaCO3 (mg/L) is >100

(5) The PWQO is for Dissolved Metals

(\*) No data or Standard available.

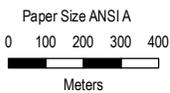
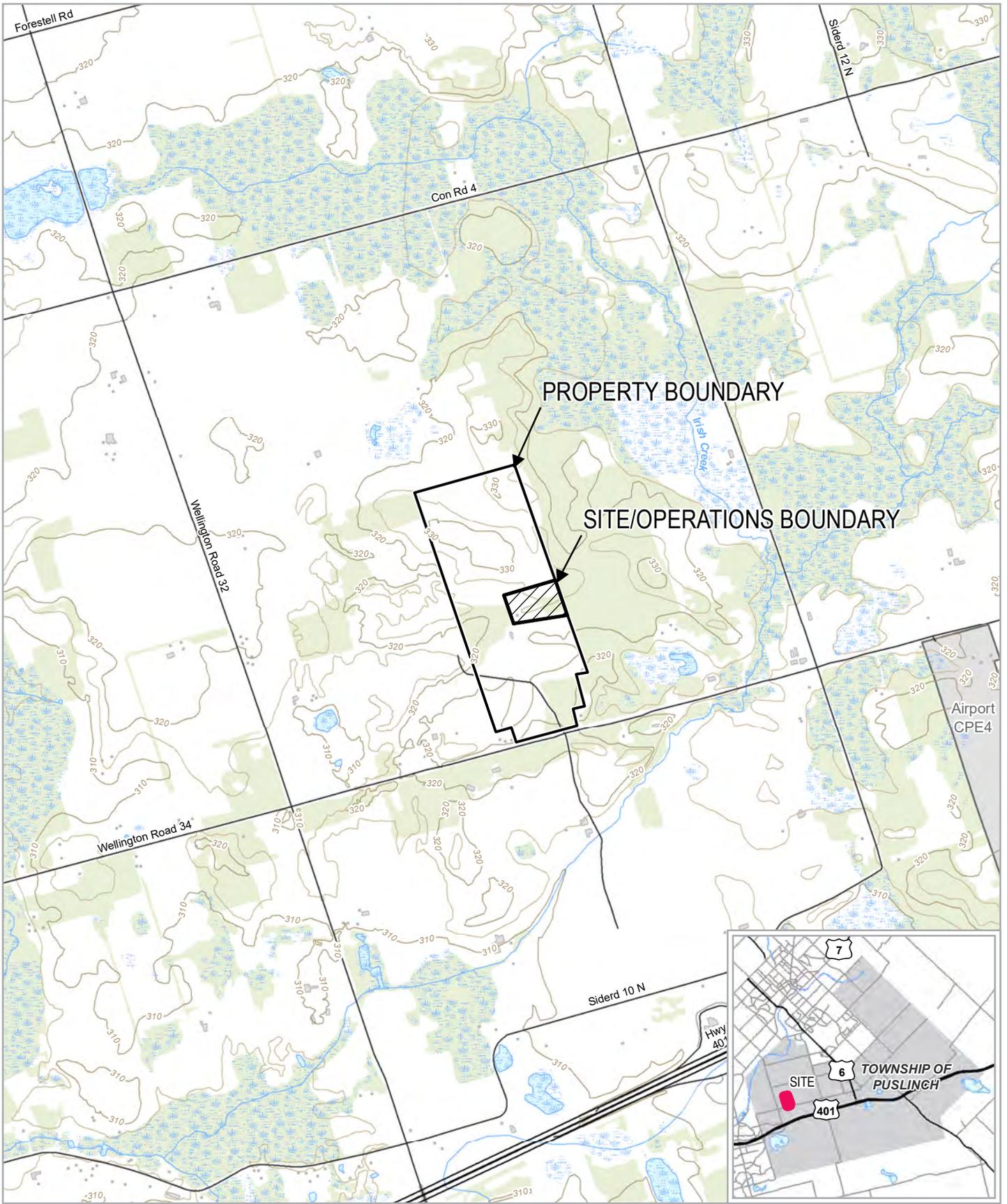
ND Not detected at the associated detection limit (DL).

µg/L microgram/liter

cfu /mL colony forming units/milliliter

Concentration greater than referenced 2011 Table 2 Standards.

# Figures



Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983 CSRS  
 Grid: NAD 1983 CSRS UTM Zone 17N

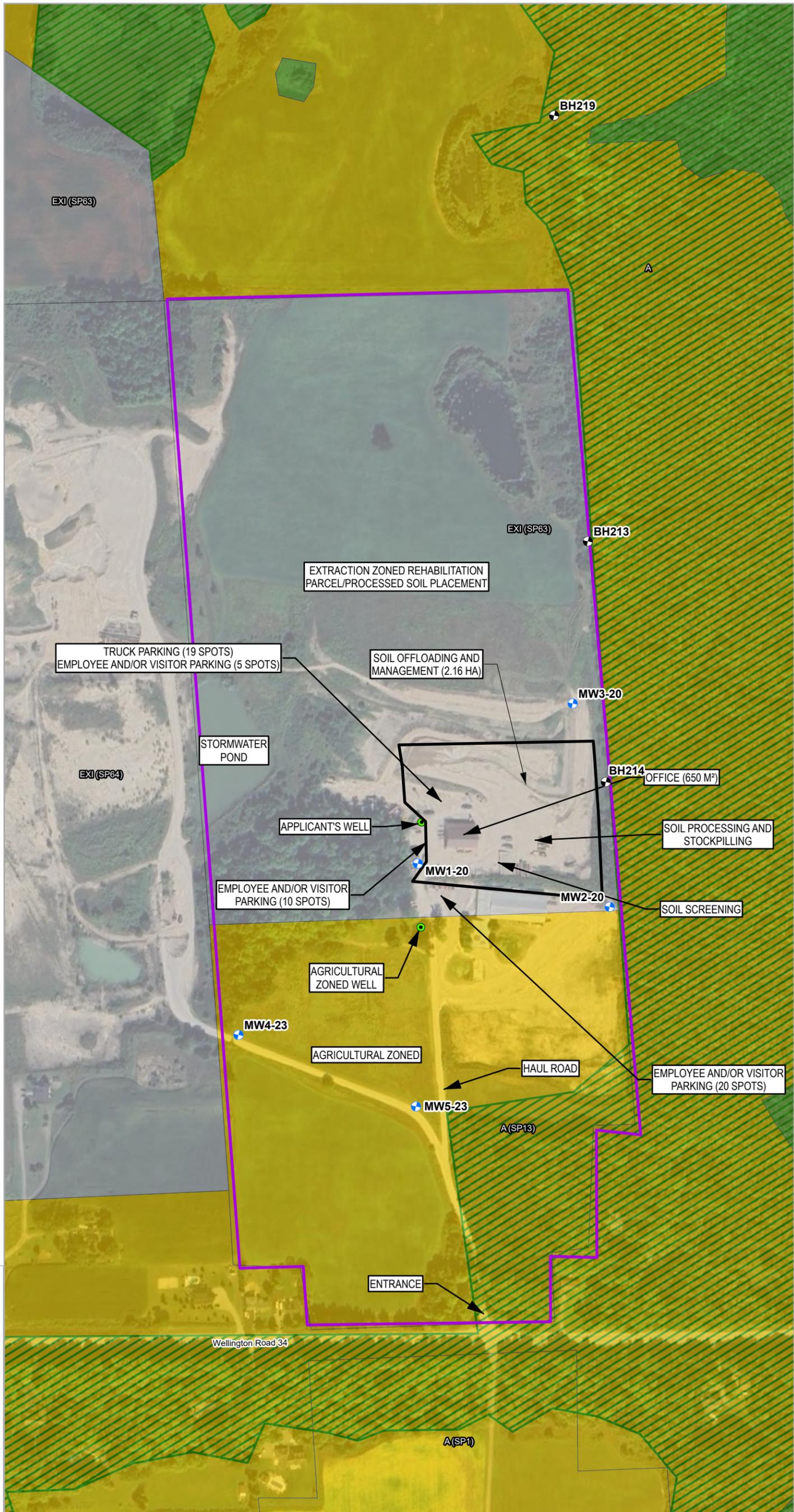
2374868 ONTARIO INC.  
 6678 WELLINGTON RD 34  
 WELLINGTON COUNTY, ON

Project No. 11210029  
 Revision No. -  
 Date Aug 17, 2023

**SITE LOCATION**

**FIGURE 1.1**

Data source: WWIS, 2020. Ontario Ministry of the Environment (Accessed August, 2020); Imagery Google 2020. Capture date: 7/Jul/2018



**Legend**

- Well
- ⊙ Capital Paving Monitoring Location
- ⊕ Monitoring Well Location
- Property Boundary
- Property Zoning

**Township of Puslinch, Zoning By-Law No. 023-18**

- Agricultural
- Extractive Industrial
- Natural Environment
- Environmental Protection Overlay

Paper Size ANSI B

0 40 80 120  
Meters

Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983 CSRS  
Grid: NAD 1983 CSRS UTM Zone 17N

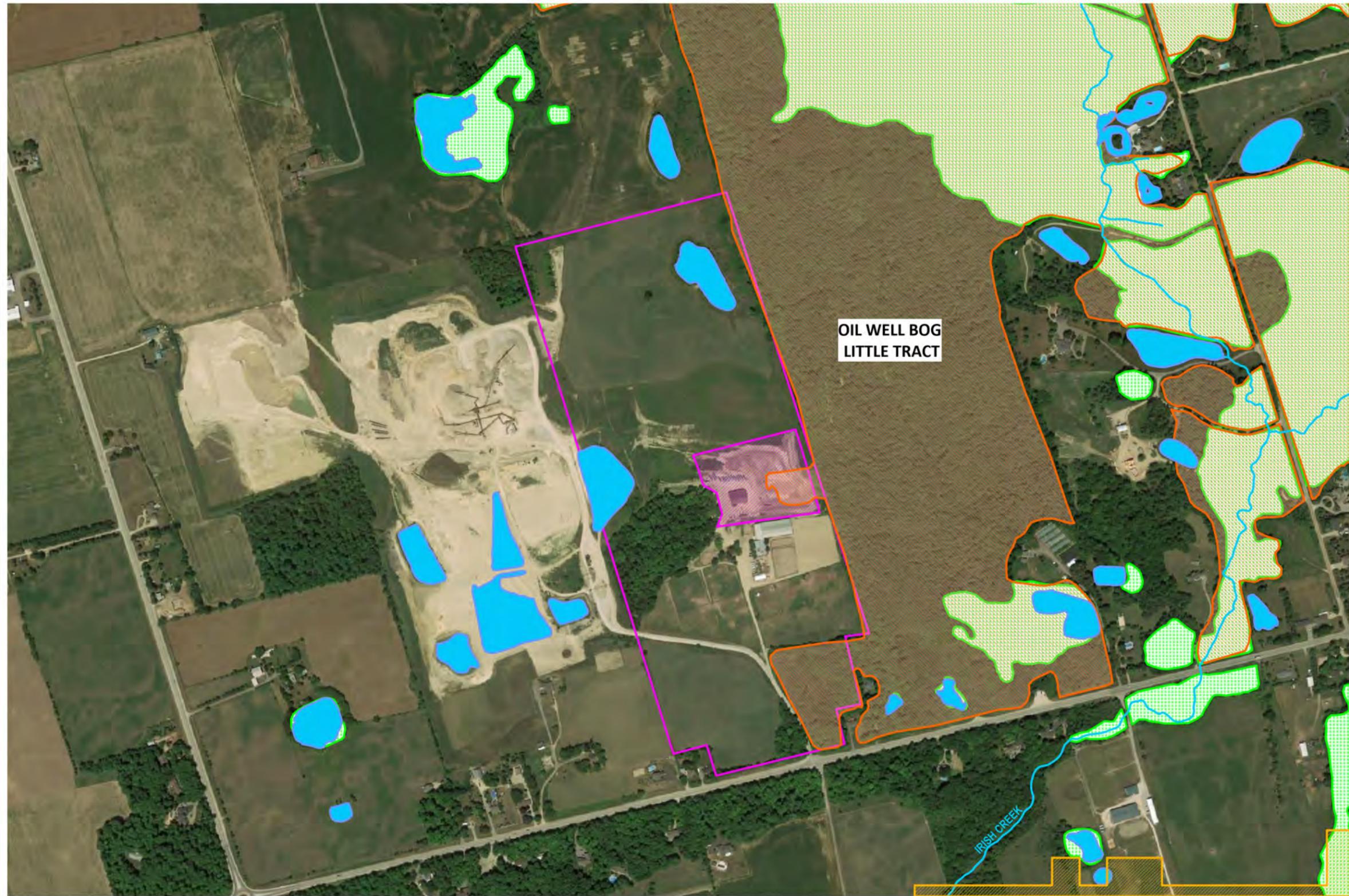


2374868 ONTARIO INC.  
6678 WELLINGTON RD 34  
WELLINGTON COUNTY, ON

Project No. 11210029  
Revision No. -  
Date Mar 25, 2025

**SITE PLAN INCLUDING  
MONITORING LOCATIONS**

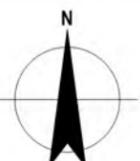
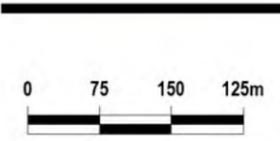
**FIGURE 1.2**



LEGEND	
	PROPERTY BOUNDARY
	SITE/OPERATIONS BOUNDARY
	AREA OF NATURAL AND SCIENTIFIC INTEREST (ANSI) GREENLANDS UNDER OFFICIAL PLAN GREENLANDS SYSTEM
	WETLAND CORE GREENLANDS UNDER OFFICIAL PLAN GREENLANDS SYSTEM
	SURFACE WATER BODY
	SURFACE WATER LINEAR FEATURE
	HIGHLY VULNERABLE AQUIFER

Data Source: ©2022 Google, CNES / Airbus, First Base Solutions, Maxar Technologies.  
 Grand River Conservation Authority (GRCA), 2023. Grand River Information Network (GRIN).  
 Ministry of Natural Resources, 2012. ANSI (Areas of Natural and Scientific Interest). Land Information Ontario Data Description.

Contains information made available under Grand River Conservation Authority's Open Data Licence v2.0.

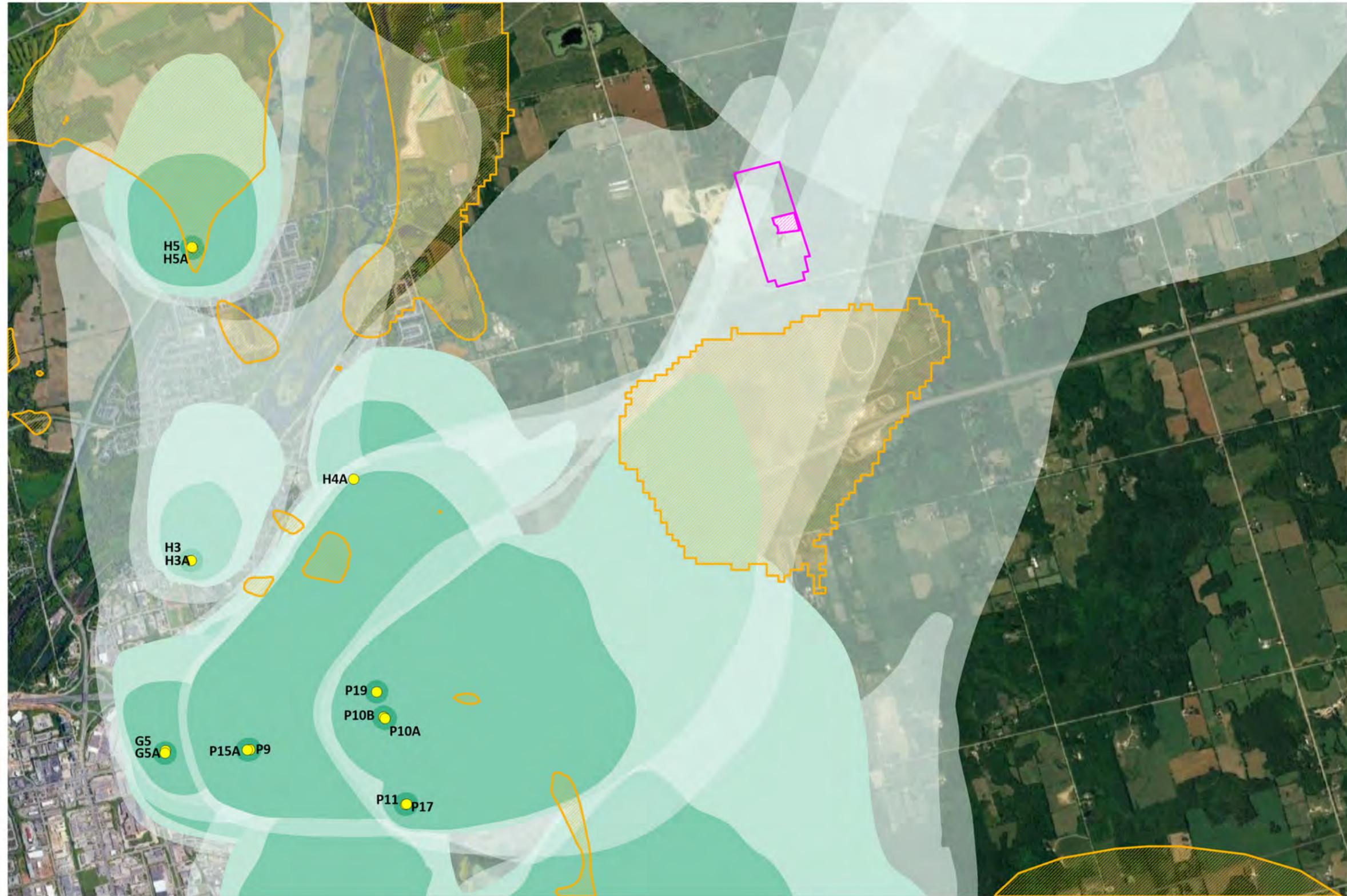


2374868 ONTARIO INC.  
 6678 WELLINGTON ROAD 34  
 WELLINGTON COUNTY, ON

COUNTY OF WELLINGTON OFFICIAL PLAN  
 GREENLANDS

Project No. 11210029  
 Date September 2023

FIGURE 3.1



**LEGEND**

- PROPERTY BOUNDARY
- SITE/OPERATIONS BOUNDARY
- WHPA-A: 100 m FROM SUPPLY WELLHEAD
- WHPA-B: 2-YEAR TIME OF TRAVEL FROM SUPPLY WELLHEAD
- WHPA-C: 5-YEAR TIME OF TRAVEL FROM SUPPLY WELLHEAD
- WHPA-D: 25-YEAR TIME OF TRAVEL FROM SUPPLY WELLHEAD<sup>(1)</sup>
- MUNICIPAL PRODUCTION WELL LOCATION
- P16** MUNICIPAL PRODUCTION WELL IDENTIFICATION
- HIGHLY VULNERABLE AQUIFER

**NOTES:**  
 WELLHEADS DESIGNATED WITH A PREFIX OF H ARE PART OF THE HESPELLER WELLFIELD  
 WELLHEADS DESIGNATED WITH A PREFIX OF G OR P ARE PART OF THE PINEBUSH WELLFIELD  
 (1) THERE ARE NO SIGNIFICANT DRINKING WATER THREAT POLICIES IN THE GRAND RIVER SOURCE PROTECTION PLAN THAT ARE ASSOCIATED WITH WHPA-D

Data Source: ©2022 Google, CNES / Airbus, First Base Solutions, Maxar Technologies.  
 Grand River Conservation Authority (GRCA), 2023. Grand River Information Network (GRIN).

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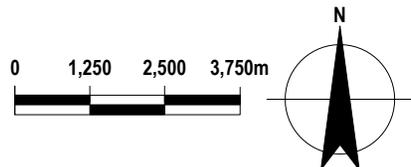
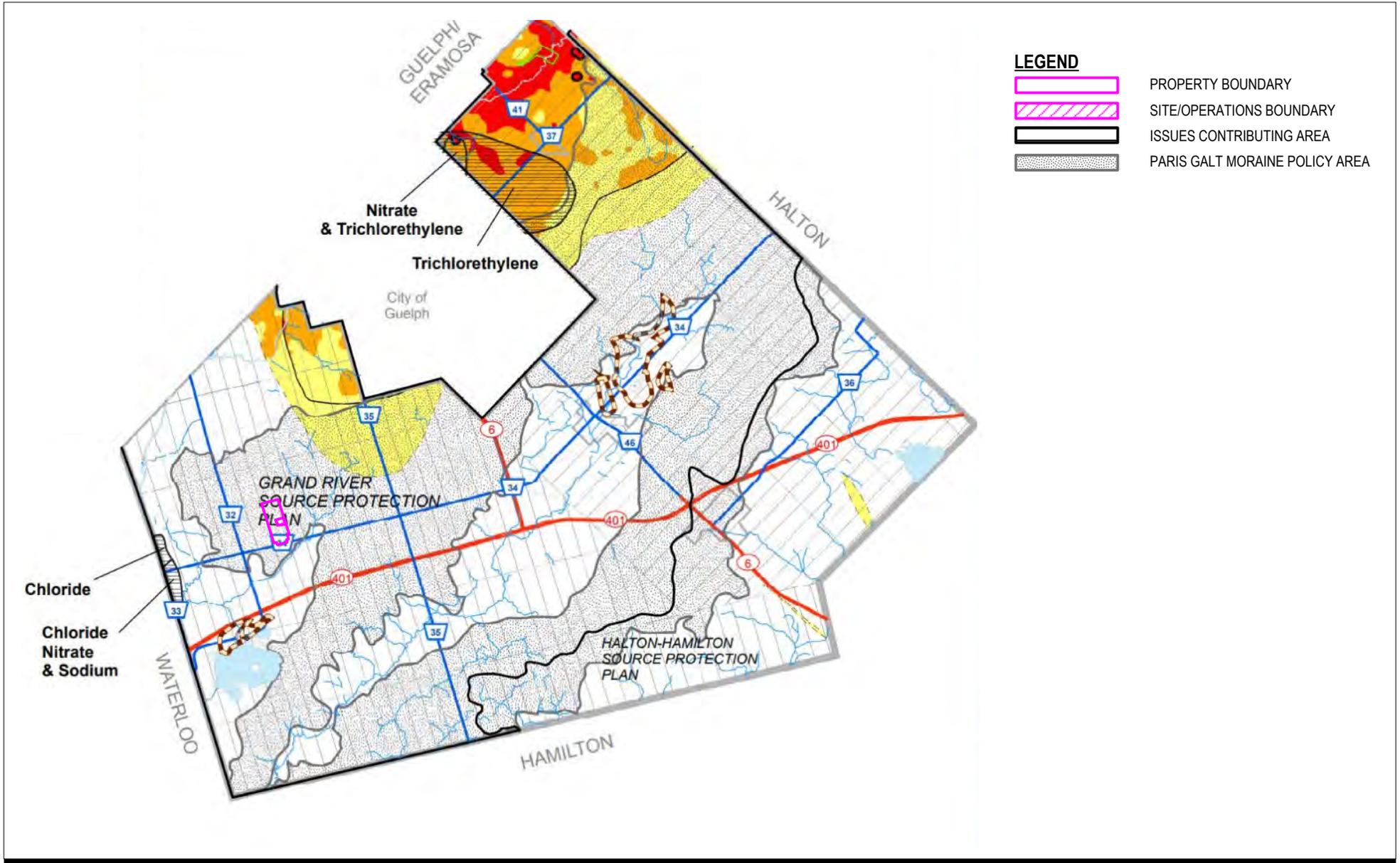
0 350 700 1,050m

2374868 ONTARIO INC.  
 6678 WELLINGTON ROAD 34  
 WELLINGTON COUNTY, ON

**COUNTY OF WELLINGTON OFFICIAL PLAN  
 WELL HEAD PROTECTION AREAS AND  
 HIGHLY VULNERABLE AQUIFERS**

Project No. 11210029  
 Date September 2023

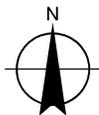
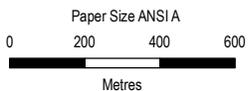
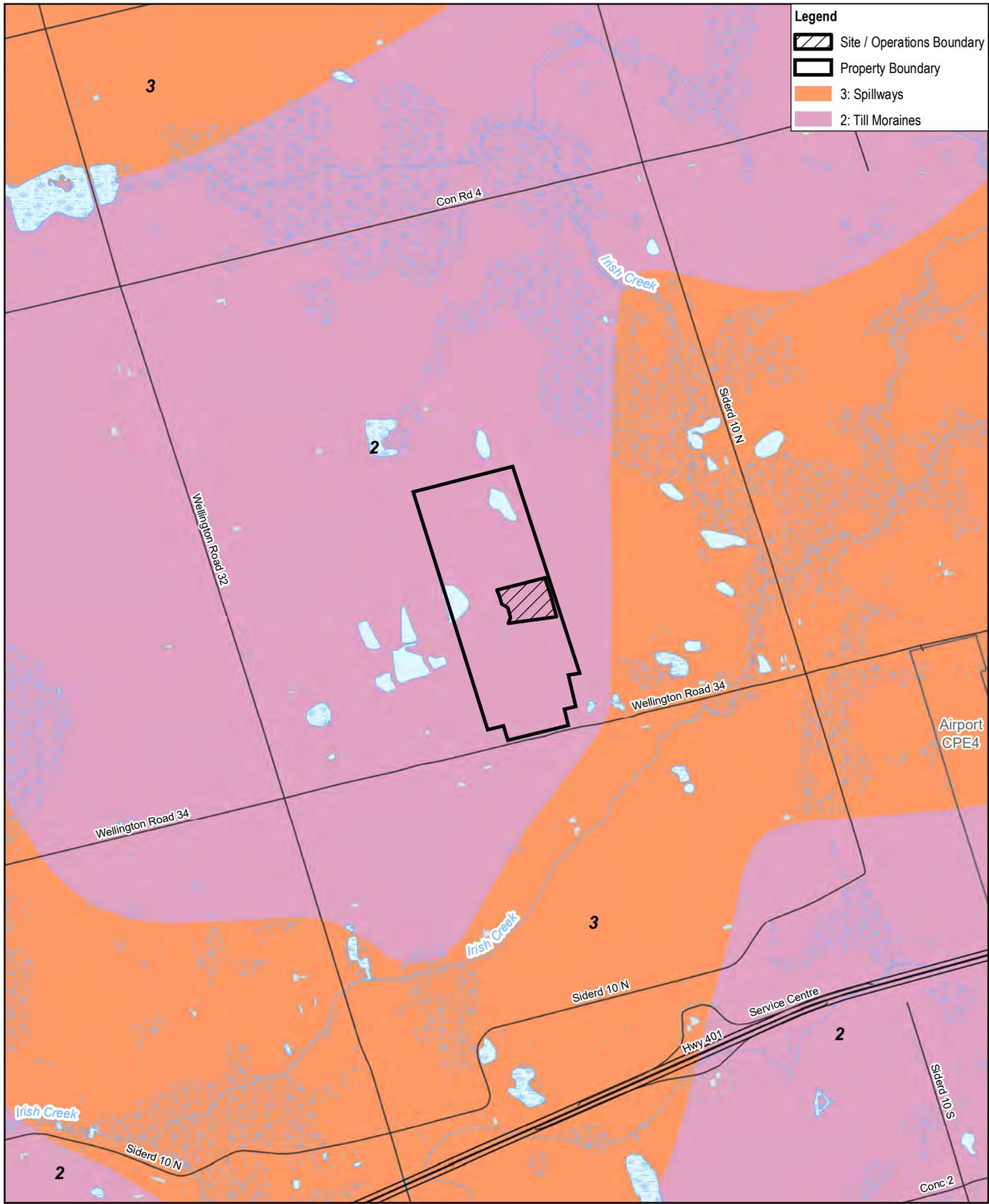
**FIGURE 3.2**



2374868 ONTARIO INC.  
 6678 WELLINGTON ROAD 34  
 WELLINGTON COUNTY, ON  
**COUNTY OF WELLINGTON OFFICIAL PLAN**  
**ISSUES CONTRIBUTING AREAS AND**  
**PARIS GALT MORAINES POLICY AREA**

Project No. 11210029  
 Date March 2025

**FIGURE 3.3**



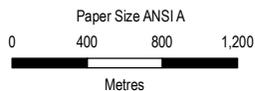
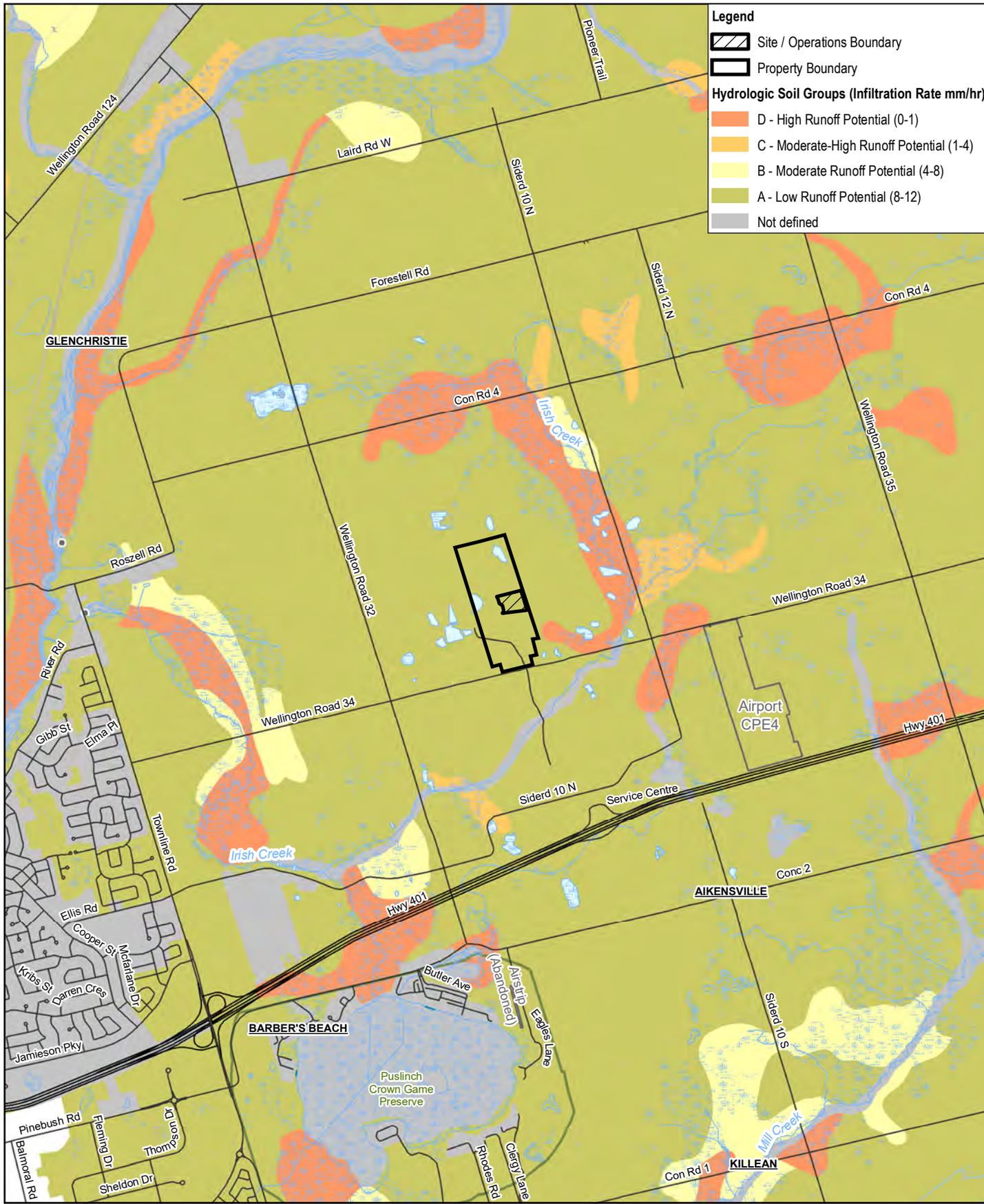
2374868 ONTARIO INC.  
6678 WELLINGTON RD 34  
WELLINGTON COUNTY, ON

Project No. 11210029  
Revision No. -  
Date Nov 13, 2023

Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983  
Grid: NAD 1983 UTM Zone 17N

**REGIONAL PHYSIOGRAPHY**

**FIGURE 3.4**



Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983  
Grid: NAD 1983 UTM Zone 17N

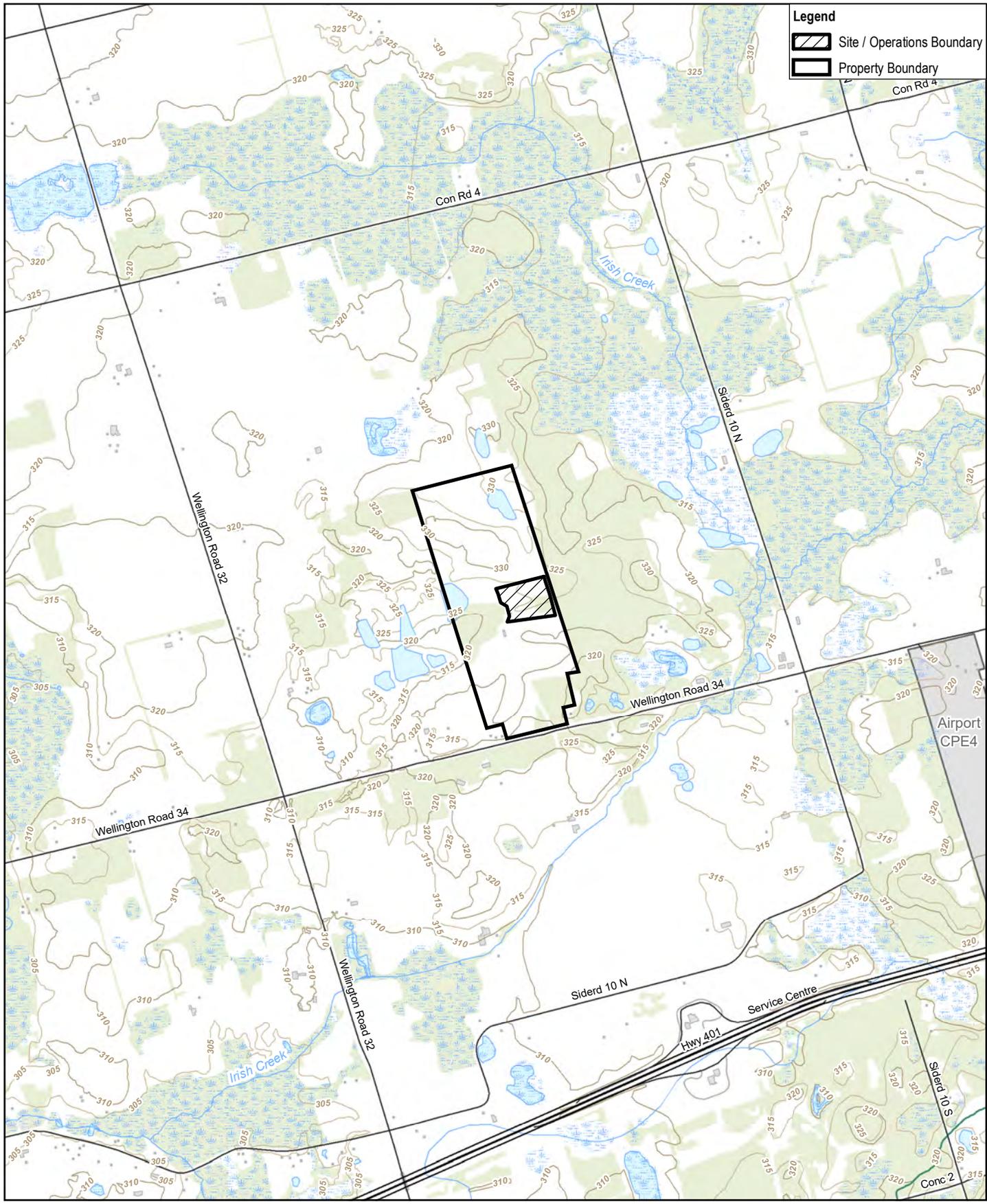


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WELLINGTON COUNTY, ON

Project No. 11210029  
Revision No. -  
Date Nov 13, 2023

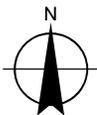
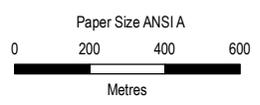
**HYDROLOGICAL SUBCATCHMENTS  
AND SOIL INFILTRATION RATES**

**FIGURE 3.5**



**Legend**

- Site / Operations Boundary
- Property Boundary



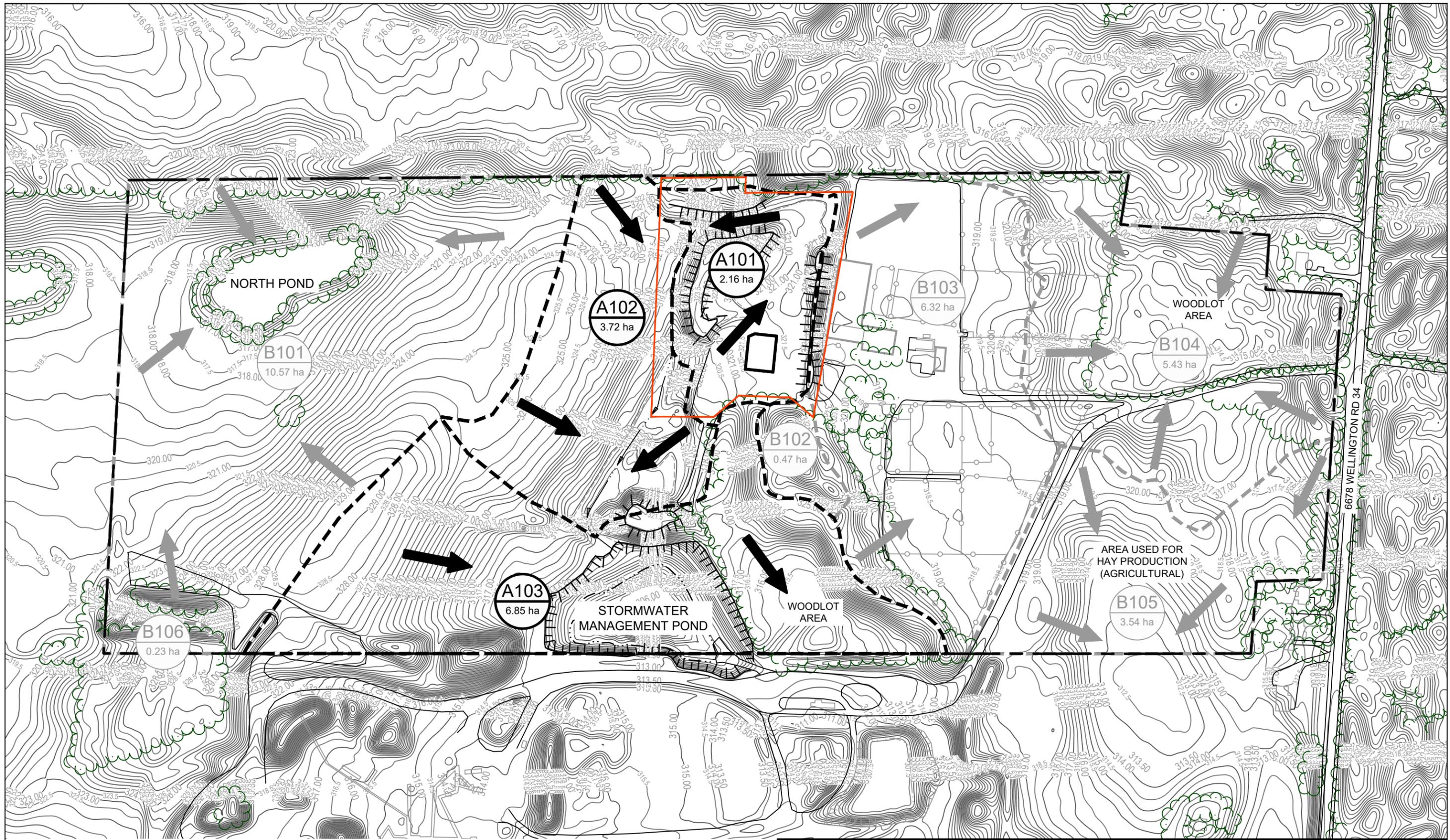
2374868 ONTARIO INC.  
6678 WELLINGTON RD 34  
WELLINGTON COUNTY, ON

Project No. 11210029  
Revision No. -  
Date Nov 13, 2023

Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983  
Grid: NAD 1983 UTM Zone 17N

**SURFACE WATER FEATURES**

**FIGURE 3.6**

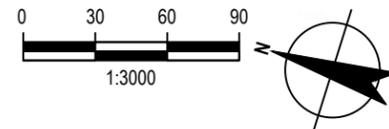


**LEGEND**

- SITE OPERATION CATCHMENT BOUNDARY
- CATCHMENT BOUNDARY
- PROPERTY BOUNDARY
- SITE/OPERATIONS BOUNDARY
- DIRECTION OF SURFACE WATER FLOW



CATCHMENT ID  
CATCHMENT AREA

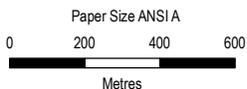
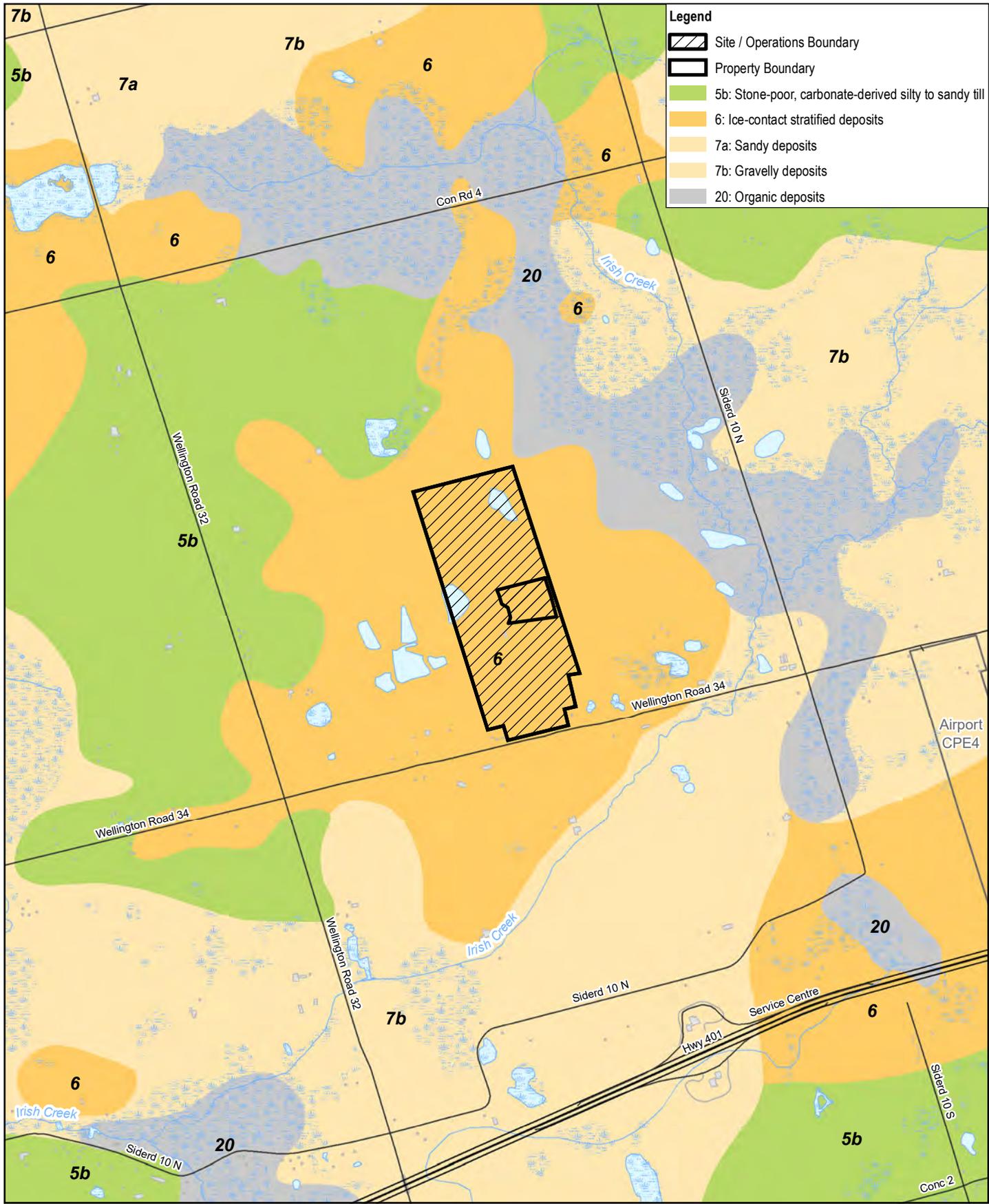


2374868 ONTARIO INC.  
6678 WELLINGTON RD 34  
WELLINGTON COUNTY, ONTARIO

**EXISTING CONDITIONS  
CATCHMENT DELINEATION**

Project No. 11210029  
Date March 2025

**FIGURE 3.7**



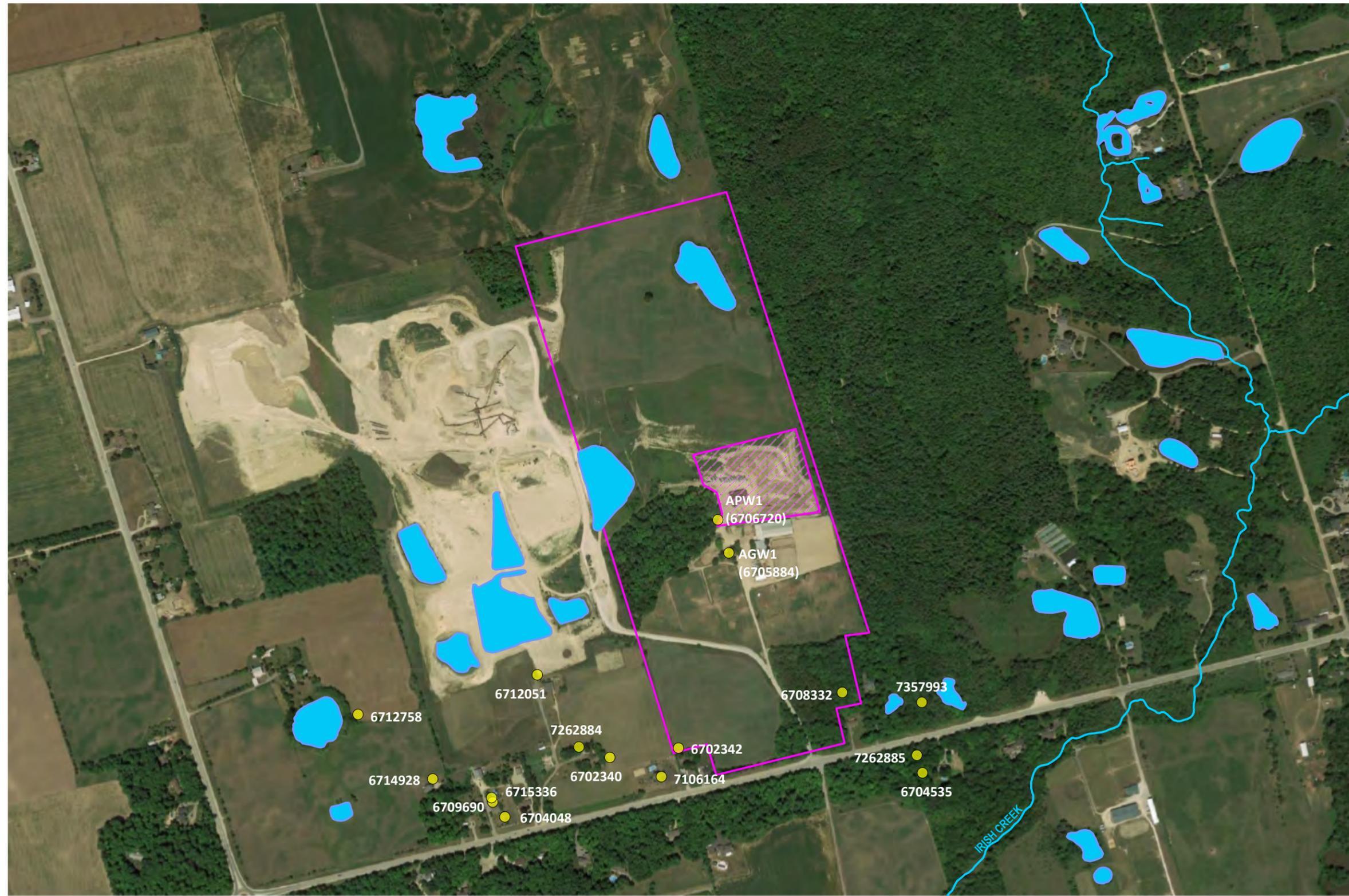
2374868 ONTARIO INC.  
6678 WELLINGTON RD 34  
WELLINGTON COUNTY, ON

Project No. 11210029  
Revision No. -  
Date Nov 13, 2023

Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983  
Grid: NAD 1983 UTM Zone 17N

**REGIONAL SURFICIAL GEOLOGY**

**FIGURE 3.8**



**LEGEND**

- PROPERTY BOUNDARY
- SITE/OPERATIONS BOUNDARY
- SURFACE WATER BODY
- SURFACE WATER LINEAR FEATURE
- DOWNGRADIENT PRIVATE SUPPLY WELL LOCATION
- 6702340 DOWNGRADIENT PRIVATE SUPPLY WELL IDENTIFICATION

Data Source: ©2022 Google, CNES / Airbus, First Base Solutions, Maxar Technologies.  
 Grand River Conservation Authority (GRCA), 2023. Grand River Information Network (GRIN).  
 MECP, 2023. Water Well Information System (WWIS).  
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0 75 150 125m

2374868 ONTARIO INC.  
 6678 WELLINGTON ROAD 34  
 WELLINGTON COUNTY, ON  
**MECP WATER WELL  
 INFORMATION SYSTEM DOWNGRADIENT  
 PRIVATE SUPPLY WELL LOCATIONS**

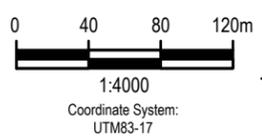
Project No. 11210029  
 Date November 2023

**FIGURE 3.9**



**LEGEND**

- PROPERTY BOUNDARY
- MW1-20 MONITORING WELL LOCATION
- ⊕ 6705884 PRIVATE WELL LOCATION
- ↗ CROSS-SECTION LOCATION

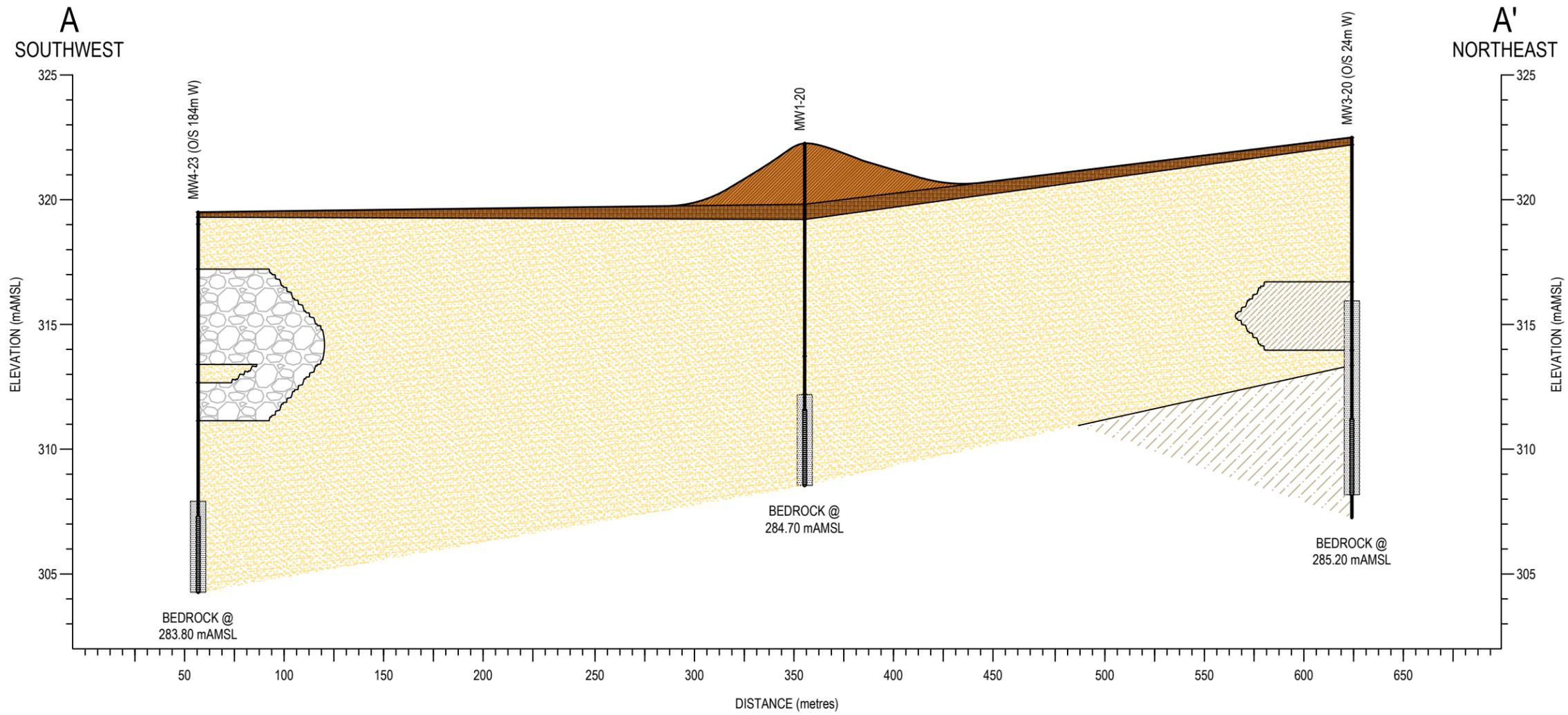


2374868 ONTARIO INC.  
6678 WELLINGTON ROAD 34  
WELLINGTON COUNTY, ONTARIO

Project No. 11210029  
Date March 2025

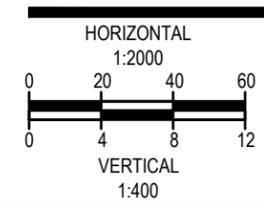
**GEOLOGICAL  
CROSS-SECTION LOCATIONS**

**FIGURE 3.10**



**LEGEND**

- |   |   |
|---|---|
| WELL ID<br>EXISTING GRADE<br>STRATIGRAPHIC CONTACT<br>SAND PACK<br>SCREEN | TOPSOIL<br>FILL<br>GRAVEL/SAND & GRAVEL<br>SAND<br>SILT |
|---|---|



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 6678 WELLINGTON ROAD 34  
 WELLINGTON COUNTY, ONTARIO

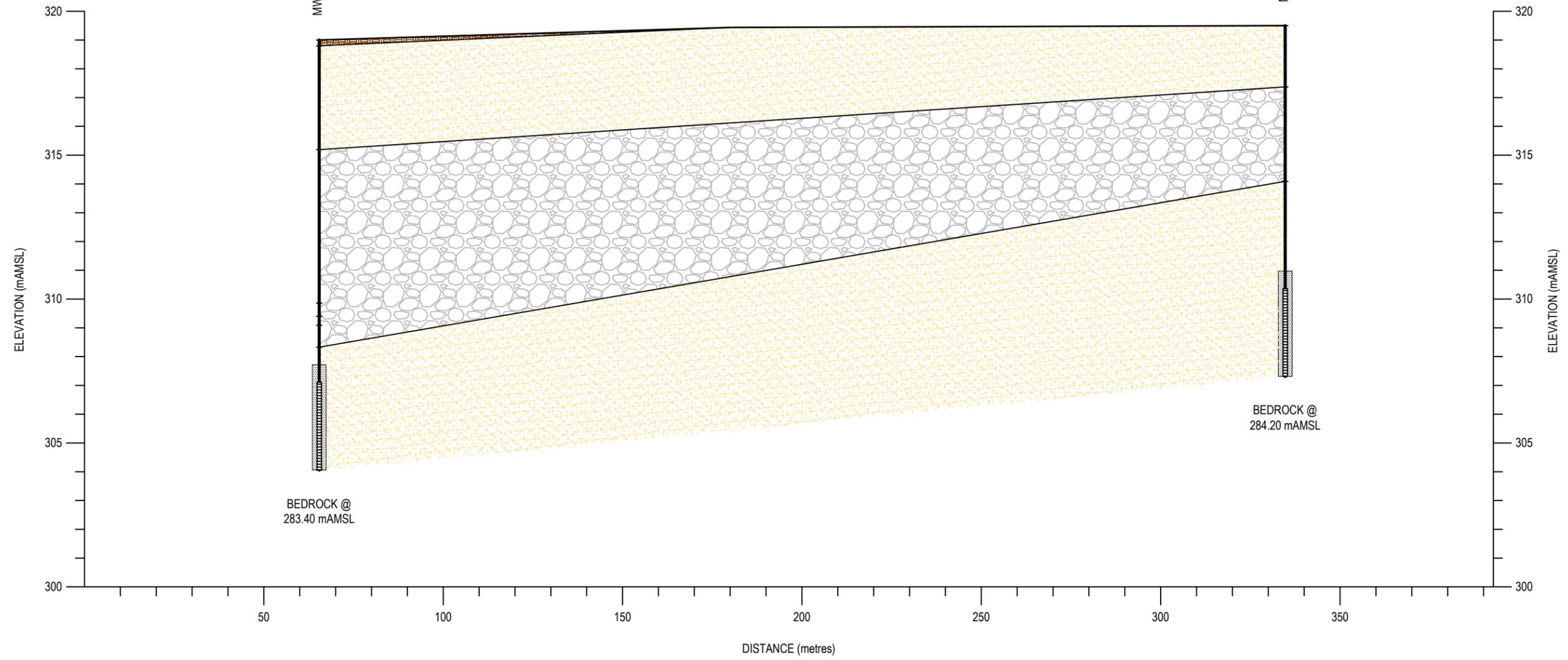
Project No. 11210029  
 Date March 2025

**GEOLOGICAL CROSS-SECTION A-A'**

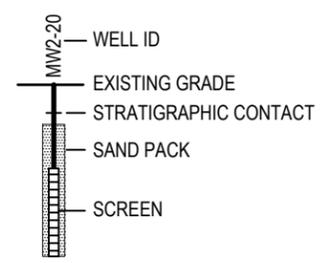
**FIGURE 3.11**

**B**  
SOUTHWEST

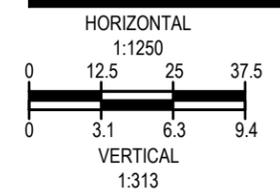
**B'**  
NORTHEAST



**LEGEND**



-  TOPSOIL
-  GRAVEL/SAND & GRAVEL
-  SAND

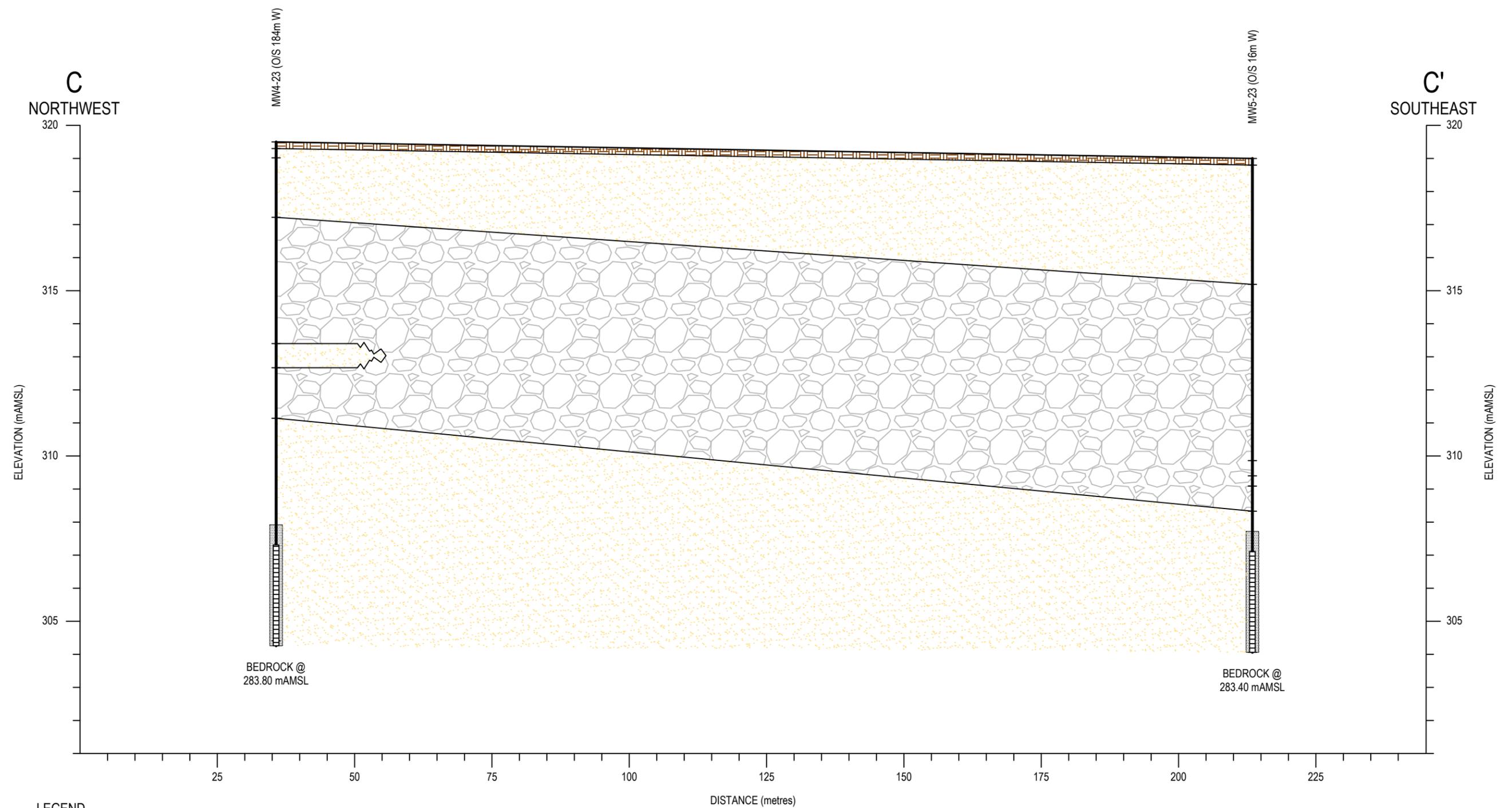


2374868 ONTARIO INC.  
6678 WELLINGTON ROAD 34  
WELLINGTON COUNTY, ONTARIO

Project No. 11210029  
Date March 2025

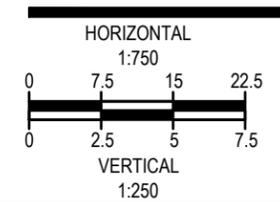
**GEOLOGICAL CROSS-SECTION B-B'**

**FIGURE 3.12**



**LEGEND**

- WELL ID
- EXISTING GRADE
- STRATIGRAPHIC CONTACT
- SAND PACK
- SCREEN
- TOPSOIL
- GRAVEL/SAND & GRAVEL
- SAND

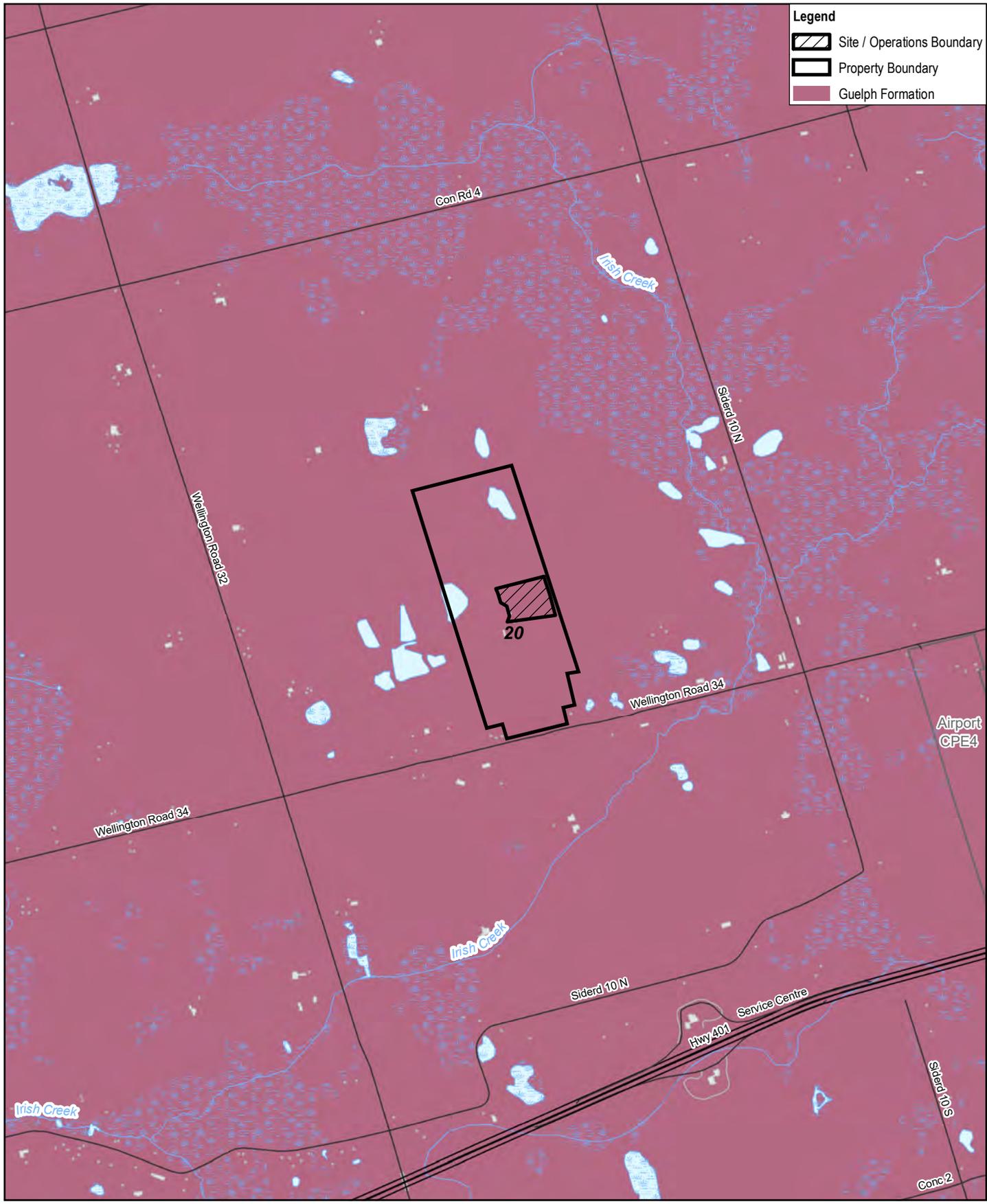


2374868 ONTARIO INC.  
6678 WELLINGTON ROAD 34  
WELLINGTON COUNTY, ONTARIO

Project No. 11210029  
Date March 2025

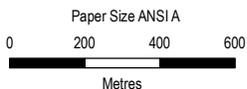
**GEOLOGICAL CROSS-SECTION C-C'**

**FIGURE 3.13**



**Legend**

-  Site / Operations Boundary
-  Property Boundary
-  Guelph Formation



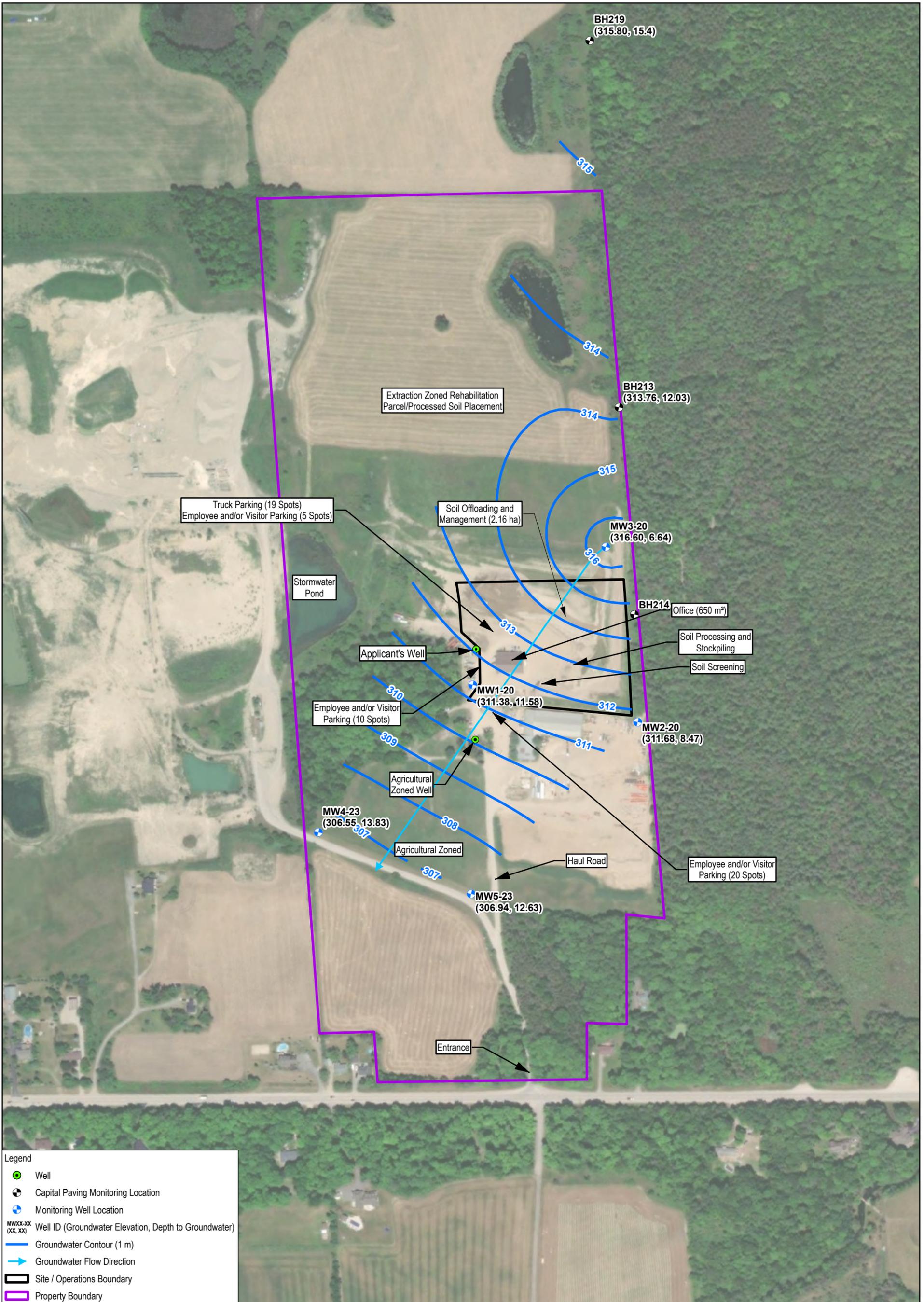
2374868 ONTARIO INC.  
6678 WELLINGTON RD 34  
WELLINGTON COUNTY, ON

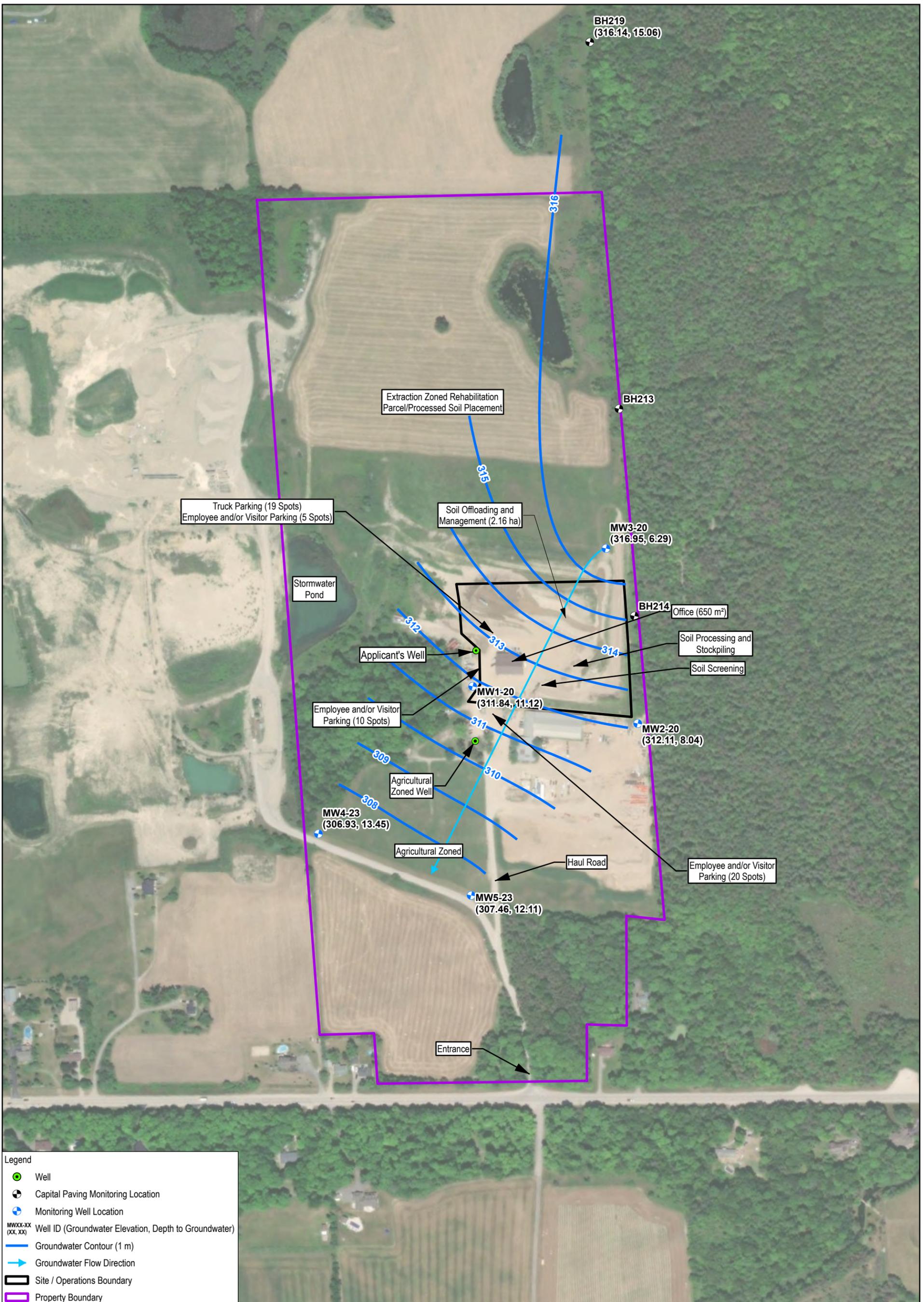
Project No. 11210029  
Revision No. -  
Date Nov 13, 2023

Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983  
Grid: NAD 1983 UTM Zone 17N

**PALEOZOIC GEOLOGY**

**FIGURE 3.14**

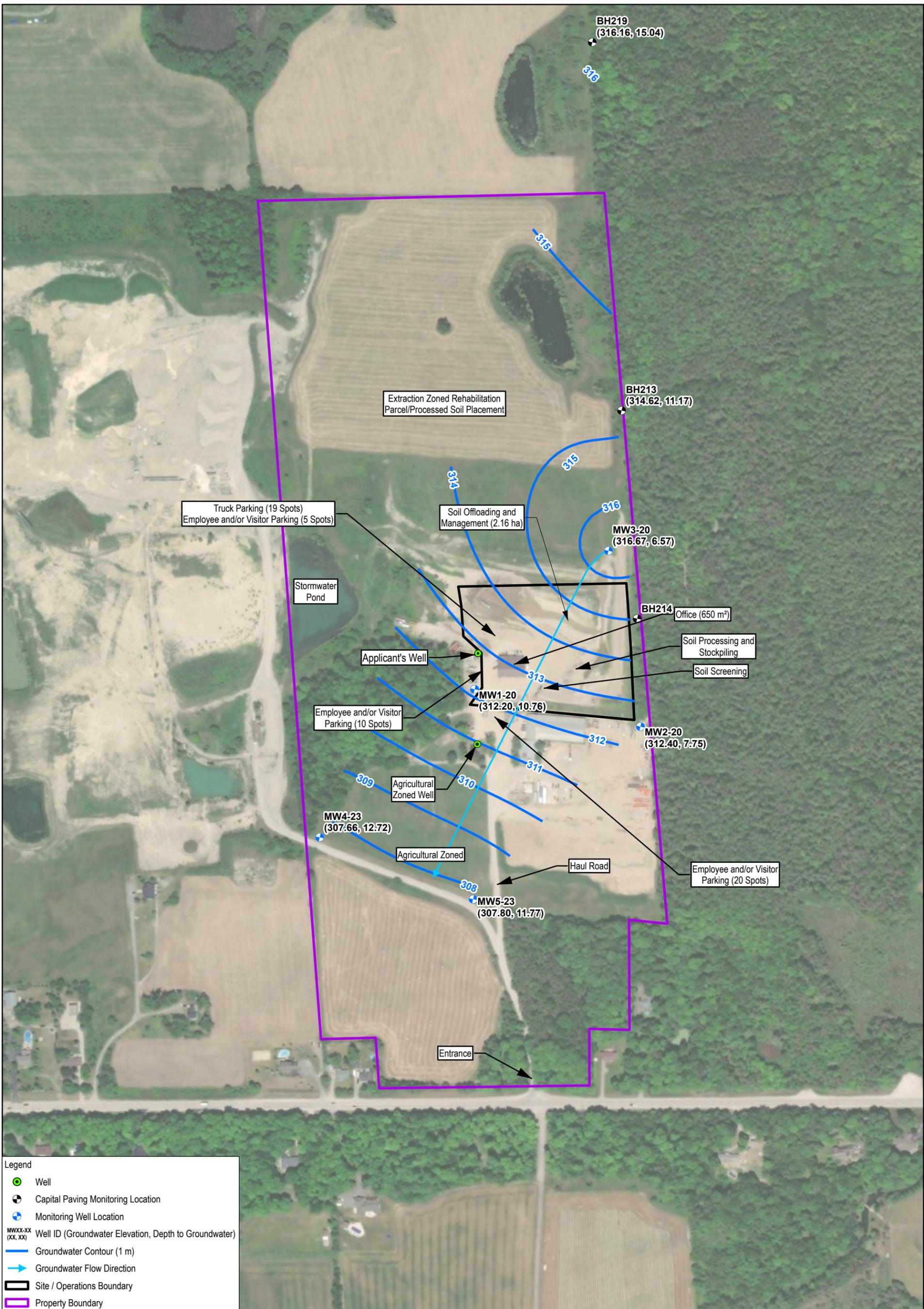




**Legend**

- Well
- Capital Paving Monitoring Location
- Monitoring Well Location
- MWXX-XX  
(XX, XX) Well ID (Groundwater Elevation, Depth to Groundwater)
- Groundwater Contour (1 m)
- Groundwater Flow Direction
- Site / Operations Boundary
- Property Boundary

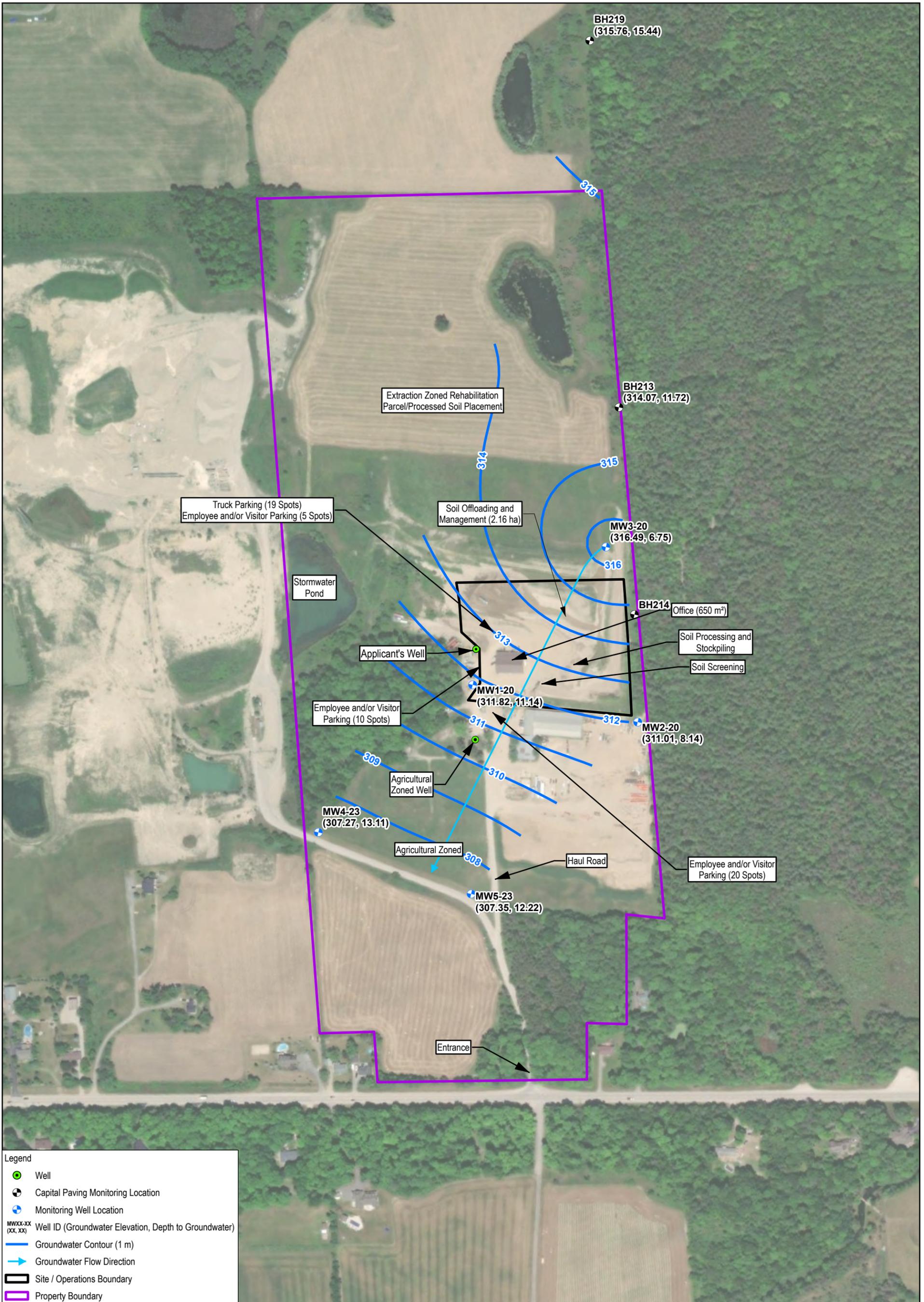
<p>Paper Size ANSI B</p> <p>0 40 80 120</p> <p>Meters</p> <p>Map Projection: Transverse Mercator Horizontal Datum: North American 1983 Grid: NAD 1983 UTM Zone 17N</p>			<p>2374868 ONTARIO INC. 6678 WELLINGTON RD 34 WELLINGTON COUNTY, ON</p> <p><b>MAY 2024</b> <b>GROUNDWATER CONTOURS</b></p>	<p>Project No. 11210029 Revision No. - Date Mar 26, 2025</p> <p><b>FIGURE 3.16</b></p>
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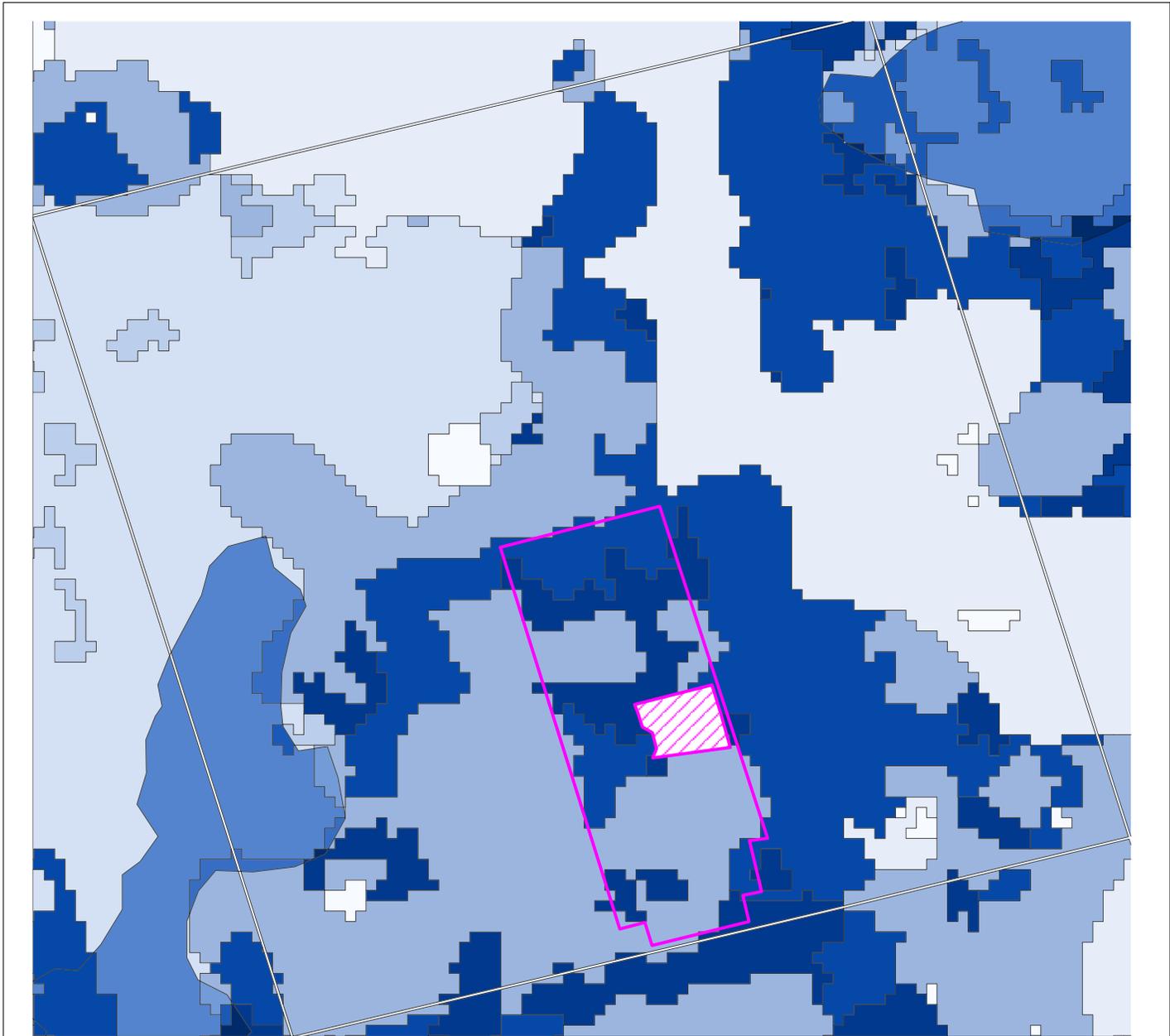


**Legend**

- Well
- Capital Paving Monitoring Location
- Monitoring Well Location
- MWXX-XX  
(XX, XX) Well ID (Groundwater Elevation, Depth to Groundwater)
- Groundwater Contour (1 m)
- Groundwater Flow Direction
- Site / Operations Boundary
- Property Boundary

<p>Paper Size ANSI B</p> <p>0 40 80 120</p> <p>Meters</p> <p>Map Projection: Transverse Mercator Horizontal Datum: North American 1983 Grid: NAD 1983 UTM Zone 17N</p>			<p>2374868 ONTARIO INC. 6678 WELLINGTON RD 34 WELLINGTON COUNTY, ON</p> <p><b>AUGUST 2024 GROUNDWATER CONTOURS</b></p>	<p>Project No. 11210029 Revision No. - Date Mar 26, 2025</p>
			<b>FIGURE 3.17</b>	





**LEGEND**

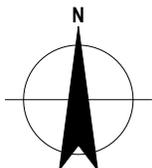
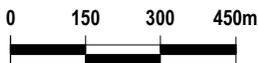
-  PROPERTY BOUNDARY
-  SITE/OPERATIONS BOUNDARY

**RECHARGE RATE (mm/YEAR)**

-  409
-  400
-  375
-  370
-  347
-  344
-  319
-  318
-  297
-  228
-  92
-  0

RECHARGE RATE (mm/YEAR)	AREA WITHIN PROPERTY BOUNDARY (m <sup>2</sup> )	AREA WITHIN SITE/OPERATIONS BOUNDARY (m <sup>2</sup> )
318	179,713	4,895
375	94,772	5,254
400	120,089	16,540
<hr/>		
<b>TOTAL RECHARGE VOLUME (m<sup>3</sup>/DAY)</b>	386	28
<b>AREA-WEIGHTED AVERAGE RECHARGE RATE (mm/YEAR)</b>	357	380

Data Source: Grand River Conservation Authority (GRCA), 2016. Hydrologic Response Units (Modified). Grand River Information Network. July 22. Contains information made available under Grand River Conservation Authority's Open Data Licence v2.0.

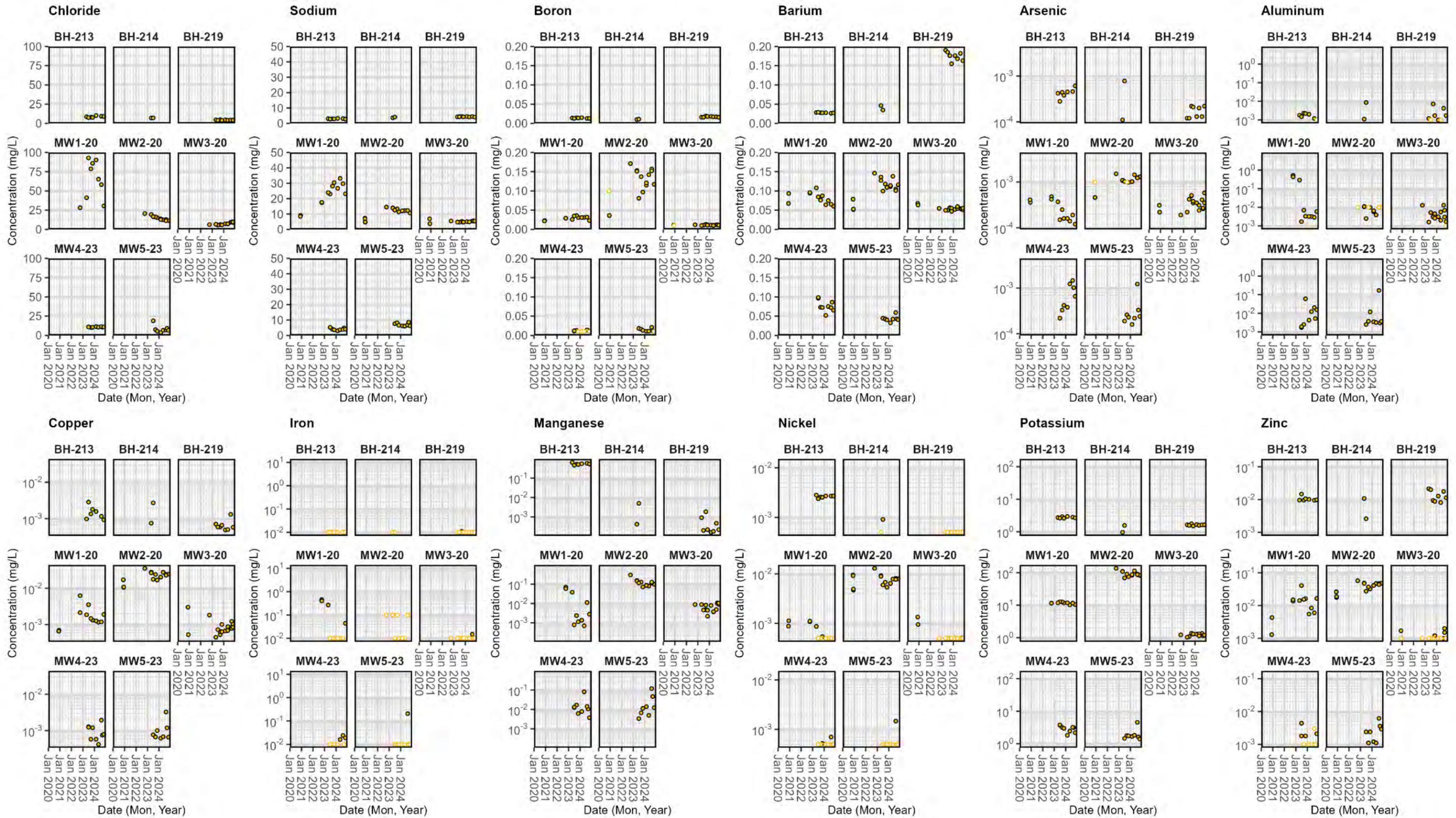


2374868 ONTARIO INC.  
6678 WELLINGTON ROAD 34  
WELLINGTON COUNTY, ON

Project No. 11210029  
Date November 2023

**GROUNDWATER RECHARGE RATES**

**FIGURE 3.19**



**LEGEND**

- DISSOLVED CONCENTRATION (mg/L)
- NON-DETECT CONCENTRATION VALUE (mg/L)

**NOTE:**

BH-213 AND BH-219 MEASURE BACKGROUND CONDITIONS



2374868 ONTARIO INC.  
6678 WELLINGTON ROAD 34  
WELLINGTON COUNTY, ON

**HISTORICAL CONCENTRATION PROFILES  
AT SITE AREA MONITORING WELLS**

Project No. 11210029  
Date March 2025

**FIGURE 4.1**

# Appendices

# **Appendix A**

## **ECA Waste Records**

**ENVIRONMENTAL COMPLIANCE APPROVAL**

NUMBER A-500-4277838045

Version: 1.0

Issue Date: October 10, 2024

*Pursuant to section 20.3 of the Environmental Protection Act, Revised Statutes of Ontario (R.S.O.) 1990, c. E. 19 and subject to all other applicable Acts or regulations this Environmental Compliance Approval is issued to:*

2374868 ONTARIO INC.

6678 WELLINGTON RD 34 ROAD  
CAMBRIDGE ONTARIO  
N3C 2V4

*For the following site:*

6678 Wellington Road 34

Town of Puslinch, County of Wellington

*You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:*

a waste disposal site

to be used for the processing of the following types of waste:

excess soil, including liquid soil

## **DEFINITIONS**

*For the purpose of this environmental compliance approval, the following definitions apply:*

1. "Approval" means this entire provisional Environmental Compliance Approval document, issued in accordance with Part II.1 of the EPA, and includes any schedules to it, the application and the supporting documentation listed in Schedule 1, as amended from time to time;
2. "Design and Operations Report" means the document describing all on-site operations, procedures and environmental protection measures, further described in the conditions of this Approval;
3. "Director" means any Ministry employee appointed in writing by the Minister pursuant to section 5 of the EPA as a Director for the purposes of Part V of the EPA;
4. "District Manager" means the District Manager of the local district office of the Ministry in which the Site is geographically located;
5. "EPA" means Environmental Protection Act, R.S.O. 1990, c. E.19, as amended;
6. "Monitoring Plan" means the groundwater and surface water monitoring plan described in Section 6 in Item 3 in Schedule 1;
7. "Minister" means the Minister of the Environment, Conservation and Parks, 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;

8. "Ministry" means the ministry of the Minister;
9. "Operator" means any person, other than the Owner's employees, authorized by the Owner as having the charge, management or control of any aspect of the Site, and includes its successors or assigns;
10. "Owner" means any person that is responsible for the establishment or operation of the Site being approved by this Approval, and includes 2374868 Ontario Inc., its successors and assigns;
11. "OWRA" means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended;
12. "PA" means the Pesticides Act, R.S.O. 1990, c. P.11, as amended;
13. "Provincial Officer" means any person designated in writing by the Minister as a provincial officer pursuant to section 5 of the OWRA or section 5 of the EPA or section 17 of PA;
14. "Regional Director" means the Regional Director of the local regional office of the Ministry in which the Site is located;
15. "Reg. 347" means R.R.O. 1990, Regulation 347: General - Waste Management, made under the EPA, as amended from time to time;
16. "Site" means the facility located at 6678 Wellington Road 34, Cambridge, Ontario, authorized by this Approval;
17. "Soil Rules" means the Ministry's "Rules for Soil Management and Excess Soil Quality Standards" document;
18. "Trained Personnel" means persons knowledgeable in the following through instruction and/or practice:
  - a. relevant waste management legislation, regulations and guidelines;
  - b. major environmental concerns pertaining to the material being handled;
  - c. occupational health and safety concerns pertaining to the processes and materials being handled;
  - d. site management procedures, including the use and operation of the equipment that person is required to operate for the processes and materials being handled by that person;
  - e. emergency response procedures;
  - f. specific written procedures for the control of nuisance conditions;
  - g. specific written procedures for management of unacceptable loads;
  - h. the requirements of this Approval.

## TERMS AND CONDITIONS

---

*You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:*

1. The Owner and Operator shall ensure compliance with all the conditions of this Approval and shall ensure that any person authorized to carry out work on or operate any aspect of the Site is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
2. Any person authorized to carry out work on or operate any aspect of the Site shall comply with the conditions of this Approval.
3.
  1. Except as otherwise provided by this Approval, the Site shall be designed, developed, built, operated and maintained in accordance with the application for this Approval, dated March 27, 2024, and the supporting documentation listed in Schedule 1.

2.
  1. Construction and installation of the aspects of the Site described in the application for this Approval must be completed within 5 years of the later of:
    1. the date this Approval is issued; or
    2. if there is a hearing or other litigation in respect of the issuance of this Approval, the date that this hearing or litigation is disposed of, including all appeals.
  2. This Approval ceases to apply in respect of the aspects of the Site noted above that have not been constructed or installed before the later of the dates identified in Condition 3.2.1 above.
4. Where there is a conflict between a provision of any document, including the application, referred to in this Approval, and the conditions of this Approval, the conditions in this Approval shall take precedence.
5. Where there is a conflict between the application and a provision in any documents listed in Schedule 1, the application shall take precedence, unless it is clear that the purpose of the document was to amend the application and that the Ministry approved the amendment.
6. Where there is a conflict between any two documents listed in Schedule 1, other than the application, the document bearing the most recent date shall take precedence.
7. The requirements of this Approval are severable. If any requirement of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this Approval shall not be affected thereby.
8. The issuance of, and compliance with the conditions of, this Approval does not:
  1. relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including municipal by-laws relating to zoning or site plan approval; or
  2. limit in any way the authority of the Ministry to require certain steps be taken or to require the Owner and Operator to furnish any further information related to compliance with this Approval.
9. The Owner and Operator shall take steps to minimize and ameliorate any adverse effect (as defined in the EPA) or impairment of air quality or water quality resulting from operations at the Site, including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
10. Despite an Owner, Operator or any other person fulfilling any obligations imposed by this Approval the person remains responsible for any contravention of any other condition of this Approval or any applicable statute, regulation, or other legal requirement resulting from any act or omission that caused the adverse effect (as defined in the EPA) or impairment of water quality.
11. The Owner shall notify the Director in writing, and forward a copy of the notification to the District Manager, within 30 days of the occurrence of any of the following changes:
  1. the ownership of the Site
  2. the Owner or Operator of the Site;
  3. the name or address of the Owner or Operator;
  4. the partners, where the Owner or Operator is or at any time becomes a partnership and a copy of the most recent declaration filed under the Partnerships Act, R.S.O. 1990, c. P.5 shall be included in the notification; or
  5. the directors, where the Owner of the Operator is or at any time becomes a corporation, and a copy of the most current information filed as required by the Corporations Information Act, R.S.O. 1990, c. C.39 shall be included in the notification.
12. No portion of this Site shall be transferred or encumbered prior to or after closing of the Site unless the Director is notified in advance and sufficient financial assurance is deposited with the Ministry to ensure that these conditions will

be carried out.

13. No person shall hinder or obstruct a Provincial Officer in the performance of their duties, including any and all inspections authorized by the OWRA, the EPA or the PA of any place to which this Approval relates, and without limiting the foregoing to:
  1. enter upon the premises where the Site is located, or the location where the records required by the conditions of this Approval are kept;
  2. have access to, inspect, and copy any records required by the conditions of this Approval;
  3. inspect the practices, procedures, or operations required by the terms and conditions of this Approval; and
  4. sample and monitor for the purposes of assessing compliance with the conditions of this Approval or the EPA, the OWRA or the PA.
14. No later than 20 days from the date of issuance of this Approval, the Owner shall submit financial assurance as defined in Section 131 of the EPA to the Director in the amount of \$119,505. This financial assurance shall be in a form and amount acceptable to the Director and shall provide sufficient funds to pay for compliance with and performance of any action specified in this Approval, including Site clean-up, monitoring and the disposal of all quantities of waste on-site, closure and post-closure care of the Site and contingency plans for the Site.
15. Commencing on March 31, 2029, and every 5 years thereafter, the Owner shall provide to the Director a re-evaluation of the amount of the financial assurance required to facilitate the actions described under condition 14 above. Additional financial assurance, if required, must be submitted to the Director within 20 days of written acceptance of the re-evaluation by the Director.
16. The amount of financial assurance is subject to review at any time by the Director and may be amended at his/her discretion. If any financial assurance is scheduled to expire or notice is received, indicating financial assurance will not be renewed, and satisfactory methods have not been made to replace the financial assurance at least 60 days before the financial assurance terminates, the financial assurance shall forthwith be replaced by cash.
17. Any information requested by the Ministry concerning the Site and its operation under this Approval, including, but not limited to, any records required to be kept by this Approval, shall be provided in a timely manner to the Ministry, upon request. Records shall be retained for 7 years unless otherwise authorized in writing by the Director.
18. The receipt of any information by the Ministry or the failure of the Ministry to prosecute any person or to require any person to take any action, under this Approval or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:
  1. an approval, waiver, or justification by the Ministry of any act or omission of any person that contravenes any term or condition of this Approval or any statute, regulation or other legal requirement; or
  2. acceptance by the Ministry of the information's completeness or accuracy.
19.
  1. The receipt, unloading, loading and transfer of waste and other waste-derived materials may be carried out at the Site between the hours of 7:00am and 6:00pm, Monday through Friday, unless otherwise restricted by municipal by-laws.
  2. Waste may be processed and managed at the Site 24 hours per day, 7 days per week, unless otherwise restricted by municipal by-laws.
20. Only waste generated in the province of Ontario shall be accepted at the Site.
21. No waste other than non-hazardous excess soil that is liquid shall be accepted at the Site.
22. The Site is approved for the following waste management activities:
  1. The receipt, temporary storage, and transfer of excess soil that is liquid, and the temporary storage, testing and

transfer of dry processed soil, process water and other process derivatives.

2. The processing of excess soil that is liquid soil using the equipment and methods described in Item 1 of Schedule 1, including the passive dewatering of excess soil that is liquid using lined swales and ponds.
  3. The temporary storage of process water in lined swales and ponds prior to testing and discharge.
- 23.
1. The amount of waste received at the Site shall not exceed 125 tonnes per day.
  2. The amount of waste and waste-derived materials present at the Site at any one time shall not exceed the following:
    1. 440 cubic metres of liquid waste, including excess soil that is liquid and process water, contained in lined swales and ponds on-site; and
    2. 525 tonnes of all other waste, including dry processed soil and process derivatives.
  3. The Owner shall refuse any load if the receipt of that load could reasonably be expected to cause non-compliance with this Approval, including the receipt and storage limitations set out above.
- 24.
1.
    1. Trained Personnel shall supervise all shipments of waste received at the Site. Prior to any shipment being unloaded, Trained Personnel shall review the accompanying information for that shipment, and examine the contents of the truck where possible, to ensure the waste matches the description provided and that the waste is permitted to be received further to the conditions of this Approval. If any shipment is suspected of containing unapproved waste, that shipment shall be refused and shall not be unloaded at the Site.
    2. Trained Personnel shall examine all shipments of waste while they are being unloaded. If at any time a shipment is discovered to contain unapproved material, the shipment shall be refused and all portions of the shipment that can be recovered shall be removed from the Site.
  2. In the event that a shipment of waste is rejected from the Site, the Owner shall forthwith notify the District Office of the following in writing:
    1. the name of the company that brought the rejected load to the Site;
    2. the license plate number of the vehicle that brought the rejected load to the Site;
    3. a description of the rejected waste and the reason for rejecting the shipment;
    4. the destination of the rejected waste if the driver provides that information.
  3. All liquid soil shall be unloaded directly into the designated soil management area in a manner that prevents spills during transfer.
  4. The Owner shall ensure that:
    1. no process water is discharged directly to a storm sewer, to any waterbody or any other part of the natural environment, or otherwise in a manner that requires approval under Section 53 of the OWRA, unless such an approval is in effect for the Site; and
    2. all process water is otherwise managed in accordance with applicable municipal, provincial and federal requirements, which may include discharge to sanitary sewer as permitted by the local municipality or disposal of the process water off-site in a facility permitted to receive such material.
  5. Notwithstanding Condition 24.4 above, process water may be infiltrated at the Site provided the waste is tested prior to discharge in accordance with the Monitoring Plan.
  6. Dry excess soil recovered from processing of excess soil that is liquid may be stored outdoors in stockpiles in designated areas on an impermeable surface, with any contact water generated to be directed to the on-site drainage swale.

7. The Owner shall ensure that the management of dry excess soil is carried out in a manner that minimizes impacts from wind-blown dust.
  8. Dry excess soils that have been tested shall remain segregated from all other soils on-site.
25. No processed soil shall leave the Site for reuse unless it has been sampled, analysed and managed in accordance with the following:
1. The Owner shall ensure that soil sampling, analysis and the number of samples collected for each stockpile is in accordance with Table 2 of Schedule E in Ontario Regulation 153/04.
  2.
    1. The Owner shall ensure that discrete samples are taken and analysed for:
      1. metals;
      2. hydride-forming metals;
      3. petroleum hydrocarbons (PHCs);
      4. benzene, toluene, ethylbenzene, xylene (BTEX);
      5. volatile organic compounds (VOCs);
      6. polycyclic aromatic hydrocarbons (PAHs);
      7. acid/base/neutral compounds (ABNs);
      8. chlorophenols (CPs).
    2. The Owner shall ensure that each processed soil load leaving the Site is tested in accordance with Schedule 9 in Reg. 347 ("slump test") to ensure the processed soil is solid.
    3. The Owner shall ensure that any additional sampling and analysis specific to the receiving site shall be carried out as required by the local municipality, the local conservation authority and any applicable federal/provincial legislation.
    4. Should the receiving site be subject to the requirements set out in O. Regulation 153/04, the Owner shall ensure that any additional sampling and analysis specific to the receiving site shall be carried out as recommended by the Qualified Person for the receiving site.
  3.
    1. When determining bulk concentrations of contaminants in the processed soil to verify compliance with the Soil Standards, the testing shall be in compliance with the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated July 1, 2011, as amended and in accordance with the industry standards.
    2. The Owner shall submit the samples to an accredited laboratory for the required analysis. All samples shall be handled in accordance with the instructions of the accredited laboratory carrying out the analytical testing.
  4. Processed soil to be sent off-site for beneficial reuse as described Section 5(1)3 in Ontario Regulation 406/19 shall only be sent off-site for reuse in accordance with Section 3 of Ontario Regulation 406/19 and the Soil Rules. All other processed soil shall only be transferred off-site to a waste disposal site that is approved to accept that type of material in accordance with the Environmental Compliance Approval for that site, or to a location not required to obtain an Environmental Compliance Approval to manage that material.
  5. Rock (having a same meaning as in Ontario Regulation 406/19) that does not meet the definition of inert fill set out in Reg. 347 shall only be transferred off-site to a waste disposal site that is approved to accept that type of material in accordance with the Environmental Compliance Approval for that site, or to a location not required to obtain an Environmental Compliance Approval to manage that material.
26. A sign shall be posted and maintained at the entrance to the Site in a manner that is clear and legible, and shall include

the following information:

1. the name of the Site and Owner;
2. this Approval number;
3. the name of the Operator;
4. the normal hours of operation as described in Condition 19 above;
5. the allowed materials that may be accepted at the Site, and any materials explicitly prohibited by conditions of this Approval;
6. a telephone number to which complaints may be directed; and
7. a twenty-four (24) hour emergency telephone number (if different from above).

27. The Site shall be operated and maintained in a secure manner, such that unauthorized persons cannot enter the Site.

28. 1. The Owner shall:

1. construct liners under all soil storage areas and under all process water collection/storage and conveyance pathways on-site no later than 90 days from the date of issuance of this Approval in order to prevent uncontrolled infiltration of process water or contact water at the Site;
2. submit as-built drawings showing construction details for the above-noted liners to the Director no later than 120 days from the date of issuance of this Approval;
3. maintain the above-noted liners in good condition at all times.

2. The Owner shall ensure that the Site is monitored in accordance with the Monitoring Plan noted in Item 3 in Schedule 1, including:

1. sampling of the groundwater wells MW01-20, MW02-20, MW03-20, MW4-23, MW5-23, BH213, BH214, BH219 and the two on-site water supply wells AGW1, APW1 on a quarterly basis with samples to be analyzed for metals, VOCs, PHCF1-F4, SVOCs, and PAHs;
2. sampling of the stormwater management pond on a weekly basis with samples to be analyzed for metals, VOCs, PHCF1-F4, SVOCs, and PAHs;
3. measurement of the static groundwater levels at the eight groundwater monitoring wells (excluding supply wells) quarterly during the groundwater sampling events.

3. All samples shall be submitted to a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory for analysis.

4. Each surface water sample shall be compared against the limits set out in Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Coarse Textured Soils, as provided in the MECP document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

5. Process water shall be stored in the on-site temporary holding pond until it has been tested. Process water that does not meet Table 2 Standards as noted above shall not be released into the natural environment, but shall be removed from the Site for treatment or disposal at an approved facility.

6. The Owner shall prepare and submit to the District Manager a groundwater monitoring report, on an annual basis, within 90 days following the end of each operational season. The first report shall cover the first annual period following the date of issuance of this Approval, with subsequent reports covering successive annual periods thereafter.

7. The annual groundwater report shall be prepared in accordance with the following:

1. The report shall be prepared by a qualified person who is a professional geoscientist (P. Geo.) and/or a registered professional engineer (P. Eng.) with relevant hydrogeological expertise.
2. The report shall contain a summary and interpretation of the groundwater monitoring data, and shall include an assessment of the following:
  1. groundwater flow direction;
  2. groundwater quality analytical results;
  3. a statement as to the adequacy of the groundwater monitoring program;
  4. a statement as to the adequacy of the parameters of concern, trigger threshold values and contingency measures under the Groundwater Trigger Mechanism and Contingency Plan as recognized in this Approval.
3. The report shall include a statement from the qualified person on the effectiveness of any engineered controls and associated operational practices in place to mitigate environmental impacts.
4. The report shall include a statement from the qualified person on whether the Reasonable Use Guideline has been met at the property boundary in accordance with the Ministry document entitled "Guideline B-7, Incorporation of the Reasonable Use Concept into Groundwater Management" dated 1994.
5. No modification shall be made to the groundwater monitoring program unless permitted through an amendment to this Approval.
8. The Owner shall adopt the preliminary Trigger Response Plan for the groundwater monitoring program as described in Item 2 in Schedule 1.
9. Within 30 days of collecting 2 years of groundwater monitoring data, and no more than 25 months from the date of issuance of this Approval, the Owner shall submit to the District Manager a Groundwater Trigger Mechanism and Contingency Plan that is protective of drinking water. The groundwater parameters of concern shall be determined after collecting 2 years of groundwater quality data in accordance with the groundwater monitoring program described in this Approval. This document shall be prepared by a qualified person who is a registered professional geoscientist (P. Geo.) and/or a registered professional engineer (P. Eng.) with relevant hydrogeological expertise, and shall be prepared in accordance with the following:
  1. The document shall include a proposal for site-specific groundwater trigger threshold values for parameters of concern in accordance with the Ministry's Guideline B-7 document noted above.
  2. The document shall include proposed trigger mechanisms and contingency measures for the Site.
  3. Once approved by the District Manager, trigger threshold values, trigger mechanisms and contingency measures shall be incorporated into the groundwater monitoring plan for the Site.
  4. No modifications shall be made to the Groundwater Trigger Mechanism and Contingency Plan unless permitted through an amendment to this Approval.
10. No later than 90 days from the date of issuance of this Approval, the Owner shall prepare a Spill Prevention and Contingency Plan for that Site that describes the infrastructure and procedures that will be in place at the Site to prevent spills and all contingency measures to be employed in the event of a spill at the Site.
11. No later than 90 days from the date of issuance of this Approval, the Owner shall prepare a plan to prevent impacts to groundwater from the storage and use of winter maintenance materials including salt.
12. The Owner shall ensure that any water taking is only carried out in accordance with a Permit to Take Water where such a permit is required.
29. The Owner shall maintain a training plan to be used to train all employees that operate the Site.
30. The Owner shall ensure that Trained Personnel are available at all times during the hours of operation of this Site, and that Trained Personnel supervise all management of excess soils that are liquid, processed soils, and process water and

other process derivatives at the Site.

31. An inspection of the entire Site and all equipment on-site shall be conducted each day the Site is in operation to ensure that: the Site is secure; that the operation of the Site is not causing any nuisances; that the operation of the Site is not causing any adverse effects on the environment; and that the Site is being operated in compliance with this Approval. Any deficiencies discovered as a result of the inspection shall be remedied immediately or as soon as practicable, which may require temporarily ceasing operations at the Site if needed.
32. A record of the inspections, including the following information, shall be kept in the daily log book:
  1. the name and signature of person that conducted the inspection;
  2. the date and time of the inspection;
  3. a list of any deficiencies discovered;
  4. any recommendations for remedial action; and
  5. the date, time and description of actions taken.
33. The Site shall be operated and maintained such that vermin, vectors, dust, litter, odour and noise do not create a nuisance.
34. If at any time the Owner receives a complaint regarding an adverse effect (as defined in the EPA) due to operation of the Site, the Owner shall respond to the complaint according to the following procedure:
  1. The Owner shall record and number each complaint, either electronically or in a separate log book, along with the following information:
    1. the nature of the complaint;
    2. the name, address and telephone number of the complainant (if provided);
    3. the date and time the complaint was received;
    4. a description of the weather conditions at the time of the complaint;
    5. a description of the liquid soils, processed soils and process water handling activities taking place at the time of the complaint; and
    6. a description of the known or suspected activity causing the complaint.
  2. The Owner shall:
    1. initiate appropriate steps to determine all possible causes of the complaint;
    2. proceed to take the necessary actions to eliminate the cause of the complaint;
    3. notify the District Manager of the complaint within 24 hours of receiving the complaint;
    4. forward a written response to the District Manager within 5 business days of receiving the complaint, with a copy to the complainant if they have identified themselves, that describes the actions taken to address the complaint; and
    5. forward daily updates to the District Manager, if requested, until the complaint is resolved.
  3. The Owner shall complete and retain on-site a report written within 10 business days of the complaint date, including:
    1. the information required in conditions 34.1 and 34.2.4 above;
    2. a list of the actions taken to resolve the complaint; and

3. recommendations for any remedial measures, managerial changes or operational changes that would reasonably avoid the recurrence of similar incidents in the future.

35. The Owner shall prepare and provide a copy of an emergency response plan to the Fire Department within 30 days of the issuance of this Approval.

36. The emergency response plan shall be kept up to date, and a copy shall be retained and accessible to all staff at all times.

37. The equipment, materials and personnel requirements outlined in the emergency response plan shall be immediately available on the Site at all times. The equipment shall be kept in a good state of repair and in a fully operational condition.

38. Each staff member that operates the Site shall be fully trained in the use of the equipment they are required to operate under the emergency response plan and in the procedures to be employed in the event of an emergency.

39. The Owner shall immediately take all measures necessary to contain and clean up any spill (as defined in the EPA) which may result from the operation of this Site and immediately implement the emergency response plan if required.

40. A Closure Plan shall be submitted to the Director for approval, with a copy to the District Manager, no later than six (6) months before the planned closure date of the Site. The Closure Plan shall include, at a minimum, a description of the work that will be done to facilitate closure of the Site and a schedule for completion of that work.

41. Upon closure, the Site shall be closed in accordance with the approved Closure Plan.

42. No more than 10 days after closure of the Site, the Owner shall notify the Director, in writing, that the Site is closed and that the approved Closure Plan has been implemented.

43. A daily log shall be maintained at the Site, either electronically or in written format, and shall include the following information as a minimum:

1. the date;

2. quantities and sources of all waste received at the Site;

3. estimated quantities of all stockpiled soil on-site at the end of each operating day;

4. quantities and destinations of all waste and waste-derived materials shipped from the Site;

5. a record of all sampling and analysis carried out further to the conditions of this Approval;

6. a record of daily inspections required by this Approval;

7. a record of all maintenance or repair activities carried out on any impermeable liners, water storage or conveyance features, or other waste management infrastructure and equipment on-site;

8. a record of any process upsets or spills with the potential to enter the natural environment, the nature of the spill or process upset and the action taken for the clean up or correction of the spill, the time and date of the spill or process upset, and for spills, the time that the Ministry and other persons were notified of the spill in fulfilment of the reporting requirements in the EPA .

9. a record of any refusals, including the types and amounts of waste refused, reasons for refusal and actions taken;

10. a record of all complaints received regarding operations at the Site.

44. 1. By March 31, 2025, the Owner shall prepare a written report that covers the period from the date of issuance of this Approval until March 31, 2025 that shall be kept on-site and made available to any Provincial Officer upon request.

2. By March 31, 2026, and on an annual basis thereafter, the Owner shall prepare a written report for the previous

calendar year that shall be kept on-site and made available to any Provincial Officer upon request.

3. The report noted above shall include, at a minimum, the following information:
  1. a detailed monthly summary of the type and quantity of all incoming and outgoing liquid soils, processed soils, process water, rock and debris and the destination of all outgoing liquid soils, processed soils, process water, rock and debris along with a summary of all sampling and analysis for outgoing materials;
  2. the results of the sampling and analysis required under the Monitoring Plan;
  3. any environmental and operational problems, that could negatively impact the natural environment (as defined in the EPA), encountered during the operation of the Site and during the facility inspections and any mitigative actions taken;
  4. any changes to the emergency response plan or the Design and Operations Report since the last Annual Report;
  5. any recommendations to minimize environmental impacts from the operation of the Site and to improve Site operations and monitoring programs in this regard.

## REASONS

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*The reasons for the imposition of these terms and conditions are as follows:*

1. 1. The reason for the definitions section is to simplify the wording of the subsequent conditions and define the specific meaning of terms as used in this Approval.
2. The reason for Conditions 1, 2, 4, 5, 6, 7, 8, 9, 10 and 13 is to clarify the legal rights and responsibilities of the Owner and Operator.
3. The reason for Condition 3 is to ensure that the Site is operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.
4. The reasons for Condition 11 are to ensure that the Site is operated under the corporate name which appears on the application form submitted for this approval and to ensure that the Director is informed of any changes.
5. The reasons for Condition 12 are to restrict potential transfer or encumbrance of the Site without the approval of the Director and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this Approval.
6. The reason for Conditions 14, 15 and 16 is to ensure that sufficient funds are available to the Ministry to clean up the Site in the event that the Owner is unable or unwilling to do so.
7. The reason for Conditions 17 and 18 is to ensure that appropriate Ministry staff have ready access to the Site for inspection of facilities, equipment, practices and operations required by the conditions in this Approval. This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the EPA, OWRA and PA.
8. The reason for Condition 19 is to specify the hours of operation for the Site.

9. The reason for Condition 20 is to specify the approved service area from which waste may be accepted at the Site.
10. The reasons for Conditions 21, 22 and 23 are to specify the types of materials that may be accepted at the Site, the maximum amounts of waste that may be stored at the Site, the maximum rate at which the Site may receive and ship waste and the allowable methods of processing based on the Owner's application and supporting documentation.
11. The reason for Condition 24 is to ensure that all wastes received at the Site are properly identified and classified to ensure they are managed in a manner that protects the health and safety of people and the environment.
12. The reasons for Condition 25 is to ensure that all processed material is testing and to ensure that any processed material is only sent off-site for reuse to an appropriate receiving facility.
13. The reason for Condition 26 is to ensure that users of the Site are fully aware of important information and restrictions related to Site operations and access under this Approval.
14. The reason for Condition 27 is to ensure the controlled access and integrity of the Site by preventing unauthorized access when the Site is closed and no site attendant is on duty.
15. The reason for Conditions 28 and 33 is to ensure that the Site is operated in a manner which does not result in a nuisance or a hazard to the health and safety of people and the environment, and to ensure that the Site is monitored to prevent and address impacts groundwater.
16. The reason for Conditions 29 and 30 is to ensure that the Site is operated by properly Trained staff in a manner which does not result in a hazard or nuisance to people or the environment.
17. The reason for Conditions 31 and 32 is to ensure that inspections of all Site grounds and infrastructure are carried out on a regular basis, and that detailed records of Site inspections are recorded and maintained for compliance and information purposes.
18. The reason for Condition 34 is to ensure that any complaints regarding Site operations at the Site are responded to in a timely manner.
19. The reasons for Conditions 35, 36, 37, 38 and 39 is to ensure that an Emergency Response Plan is developed and maintained at the Site, and that staff are properly trained in the operation of the equipment used at the Site and emergency response procedures.
20. The reason for Conditions 40, 41 and 42 is to ensure that the Site is closed in accordance with Ministry standards and to protect the health and safety of the public and the environment.
21. The reason for Condition 43 is to provide for the proper assessment of effectiveness and efficiency of site design and operation, their effect or relationship to any nuisance or environmental impacts, and the occurrence of any public complaints or concerns. Record keeping is necessary to determine compliance with this Approval, the EPA and its regulations.
22. The reason for Condition 44 is to ensure that regular review of site development, operations and monitoring data is documented and any possible improvements to site design, operations or monitoring programs are identified. An annual report is an important tool used in reviewing site activities and for determining the effectiveness of

site design.

## APPEAL PROVISIONS

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In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me and the Ontario Land Tribunal, within 15 days after the service of this notice, require a hearing by the Tribunal. You must also provide notice to, the Minister of the Environment, Conservation and Parks in accordance with Section 47 of the *Environmental Bill of Rights, 1993* who will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

- I. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- II. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

- I. The name of the appellant;
- II. The address of the appellant;
- III. The environmental compliance approval number;
- IV. The date of the environmental compliance approval;
- V. The name of the Director, and;
- VI. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar* Ontario Land Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5 <a href="mailto:OLT.Registrar@ontario.ca">OLT.Registrar@ontario.ca</a>	and	The Minister of the Environment, Conservation and Parks 777 Bay Street, 5th Floor Toronto, Ontario M7A 2J3	and	The Director appointed for the purposes of Part II.1 of the <i>Environmental Protection Act</i> Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5
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**\* Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or [www.olt.gov.on.ca](http://www.olt.gov.on.ca)**

This instrument is subject to Section 38 of the *Environmental Bill of Rights, 1993*, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at [ero.ontario.ca](http://ero.ontario.ca), you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

Dated at Toronto this 10th day of October, 2024



Mohsen Keyvani

Director

appointed for the purposes of Part II.1 of the Environmental Protection Act

c: Eric Nafziger

The following schedules are a part of this environmental compliance approval:

# SCHEDULE 1

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This Schedule 1 includes a list of documents relied upon for review:

1. Environmental Compliance Approval received March 27, 2024 requesting approval of a liquid soil processing site, signed by Eric Nafziger, Site Manager, 2374868 Ontario Inc., including all supporting documentation.
2. Email dated June 25, 2024 from Dan Puddephatt, P.Ge., GHD, to Pamela Grande, P.Ge., MECP, including the attached letter dated June 25, 2024 from Dan Puddephatt, P.Ge., GHD to Pamela Grande, P.Ge., MECP detailing the proposed trigger response plan ("GHD, 2024a. Proposed Trigger Response Plan – Conestoga Badger Inc. June 25").
3. Email dated July 5, 2024 from Dan Puddephatt, P.Ge., GHD, to Pamela Grande, P.Ge., MECP, including the attached document entitled "Hydrogeological Impact Assessment Revision No.1" dated July 2, 2024 ("GHD, 2024b. Hydrogeological Impact Assessment Revision No. 1, 2374868 Ontario Inc., Badger Conestoga Inc. July 5").