

Summary Report

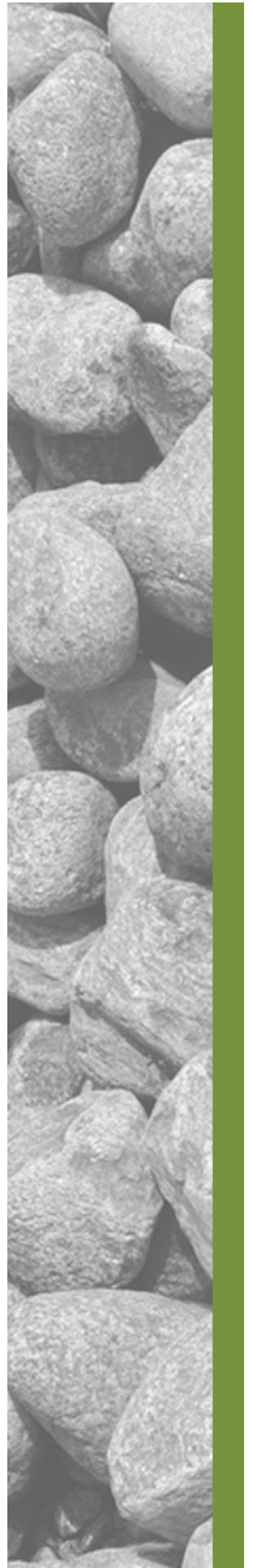
Antonissen Trucking Inc. Carter Road Pit

Part of Lot 31 and 32, Concession 5
Township of Malahide
(formerly Township of Malahide)
County of Elgin

November 2023



102 - 41 Main Street, Unionville, ON L3R 2E5
T: 905-294-8282 | F: 905-294-7623
E: markham@harringtonmcavan.com



INTRODUCTION

This report has been prepared in support of an application for a Class "A" licence, pit above water by Antonissen Trucking Limited, as required by the Aggregate Resources of Ontario standards: A compilation of the four standards adopted by Ontario Regulation 244/97 under the Aggregate Resources Act. It summarizes the information and conclusions of the consultants who have contributed to the preparation of the site plans including:

- Hydrogeology: Groundwater Science Corp.
- Natural Environment: Terrastory Consulting
- Archaeological Assessment: Timmins Martelle Heritage Consultants

The report is intended to supplement the information contained on the site plans, which have been prepared by Harrington McAvan Ltd (Appendix D), and to assist in the review of the license application which the company has filed with the Ministry of Natural Resources and Forestry and the planning application filed at the Township of Malahide by Esther Planning.

1.0 SITE DESCRIPTION

The area to be licensed consists of a total of 21.8 hectares (53.8 acres) located in Part Lots 31 and 32, Concession 5, in the Township of Malahide, County of Elgin (see Figure 1). The site is located east of Carter Road, and north of John Wise Line which is paved County Road. The proposed extraction area in the licence is 20.3 ha (50.1 acres).

The majority of the property consists of gently to moderately rolling agricultural fields associated with large sand knolls that cover parts of the property (see figures 2, 3 and 4). The topography ranges from approximately 225-227 m a.s.l. in the highest points of the knolls to 215 metres a.s.l. in the western part of site. Two vegetated valleys with small creeks are located to the north and southeast of the site. These valleys are covered by mixed deciduous and coniferous forests (see figures 5, 6 and 7) associated with the steeper slopes of the Big Otter Creek landscape and will be maintained in their natural state (see site plans and Terrastory report in Appendix B). A small-treed swale with no surface water feature in the northwest part of the site is proposed to be removed (figure 8).

The lands to the west, south, north and northeast have active agricultural use. There are also several farm and rural residences that front onto John Wise Line and Carter Road near the site. There are no houses located within 150 m of the site.



GoogleEarth

Location Map

**Antonissen
Trucking Inc.
Carter Road Pit**



Figure
1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 8

1.1 AGRICULTURAL CLASSIFICATION

Soils of Elgin County mapping obtained from the Ministry of Agriculture, Food and Rural Affairs shows the site within soil types identified as “PFc>d (see figure 9). Plainfield soils are deep coarse textured material deposited by wind and consist mainly of fine sand.

Table 4 in The Soils of Elgin County Report No. 63 of the Ontario Centre for Soil Resource Evaluation by L.W. Schut, Resources Management Branch, Ontario Ministry of Agriculture and Food, Guelph, Ontario 1992, indicates that the Canada Land Inventory (CLI) classification for these soils is 3F, depending on the slopes of the land. Class 3 soils have moderately severe limitations that restrict the range of crops and require special conservation practices. The limitations are more severe than for Class 2 soils. They affect one or more of the following practices: timing and ease of tillage; planting and harvesting; choice of crops; and methods of conservation. Under good management they are fair to moderately high in productivity for a fairly wide range of common field crops. These soils have low fertility and pH problems.

In the soils report no. 63 it states that, “The Plainfield soils have developed on blankets of coarse textured eolian materials. They usually occur on upper and crest slope positions in landscapes which have very gently undulating topography. Occasionally they occur in duned or hummocky landscapes. Slopes range from 2 to 15%, with slopes of 2 to 5% being most common. Plainfield soils are rapidly drained and rapidly permeable. They have low water holding capacities ”

Presently the site is in agricultural use, with the majority of the site cultivated for hay and cash crop production (see figures 2, 3 and 4). The operation of farm machinery is difficult on some of the steep, sandy slopes. The applicant wants to level the knolls on the property to make it more suitable for agricultural use, including decreasing costs and increasing productivity, as described in this section. The reduction of the steeper slopes will reduce the topography limitation on these fields. The sand hills or knolls will be levelled to the elevations shown on the site plans in order to reduce the steeper slopes and blend in with the grades on the surrounding fields. Rehabilitation techniques to restore 100% of the area to be extracted back to a productive agricultural use will include the following as indicated on the site plan:

- Deep ripping to eliminate compaction, where necessary
- Spreading of available on-site topsoil of and fine grading
- Spreading of manure and working into soil as a fertilizer using accepted agricultural practices
- Seeding with an appropriate grass/legume mixture and/or cover crop
- Using accepted farming practices to restore the lands to agricultural use

Rehabilitation techniques will be similar to those successfully used by the applicant to rehabilitate the lands back to agriculture in pit licence no 625026 on Sparta Line (see figure 10 and 11). The agricultural capability and productivity of the land will be improved with the removal of the steep slopes as demonstrated in the existing rehabilitated pit. Rehabilitation to agricultural use complies with the Provincial Policy Statement (2020) and the Aggregate Resources Act.



**Antonissen
Trucking Inc.
Carter Road Pit**

SOIL CAPABILITY FOR AGRICULTURE

- # H

Figure 9



Figure 10



Figure 11

1.2 PLANNING AND LAND USE CONSIDERATIONS

The protection and management of aggregate resources has been deemed to be of provincial significance is regulated by specific legislation. In addition to the Aggregate Resources Act (ARA), the establishment of aggregate extraction operations must respect the provisions of the Planning Act and consider the policy framework established by the regional and municipal planning documents. A detailed Planning analysis is provided in the Planning Justification Report, prepared by Esher Planning Inc.

The proposed pit is located in an area which is designated as “Agriculture” in the Official Plan for the Township of Malahide (OP). Refer to Figure 12. An Official Plan Amendment is required to change the designation to “Mineral Aggregate Operation” in accordance with the Township’s planning policies. The current zoning of the property is “Large Lot Agricultural” (A3) with a portion in the “Special Agricultural” (A2) zone which does not allow for residential dwellings (see figure 13). An application to rezone the lands to “Extractive Industrial” (M4) is required to permit the proposed use.

The OP policies require that the application have regard for any potential land use conflicts, including conflicts with other resource areas to ensure impacts are avoided or minimized. Potential impacts on nearby residential uses and the ability of local roads to accommodate expected levels of truck traffic are also matters that need to be considered as part of the municipal review.

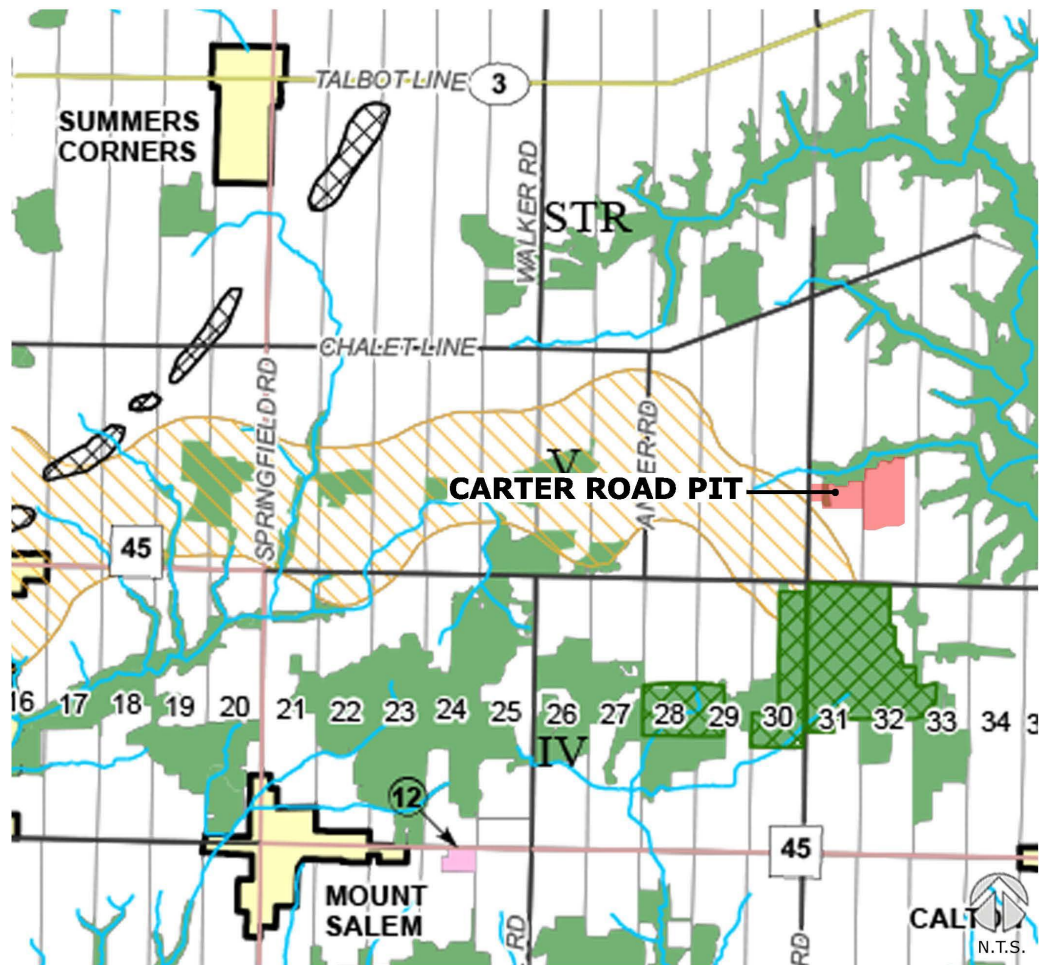
The applications for the proposed gravel pit are supported by a series of technical studies which assess the impact of the proposed operation on neighbouring residents, the natural environment, the agricultural capabilities of the land, the impact of roads and water resources. The Site Plans detail the manner in which operations will be carried out as described by the sequence of mining and progressive rehabilitation.

The operations and the rehabilitation of the pit have been designed to minimize impacts and ensure that the lands are returned to agricultural use. The Natural Heritage Report has evaluated the impacts of the proposal on significant wetlands, woodlands, fish habitat, and habitat of endangered species and

threatened species (see figure 14). The recommended mitigative measures are incorporated to ensure no negative impacts on these natural features or their functions.

In summary, the proposed pit:

- Is compatible with the surrounding landscape and reflects the importance of agricultural lands, through progressive and final rehabilitation.
- Will not have a negative impact on the natural environment.
- Has been designed to mitigate impacts on the environment and on local residents.
- Maintains the intent and purpose of the Township Official Plan policies.
- Represents wise use of resources.
- Is consistent with the policies of the Provincial Policy Statement (PPS 2020)



Township of Malahide, Official Plan, Schedule 'A1' - Land Use, January 2023

Land Use

Antonissen Trucking Inc. Carter Road Pit

LEGEND:

RESOURCE USES

-  NATURAL HERITAGE
-  NATURAL GAS RESERVES
-  CONSERVATION LANDS
-  MINERAL AGGREGATE DEPOSITS
-  AGRICULTURE

NON RESOURCE USES









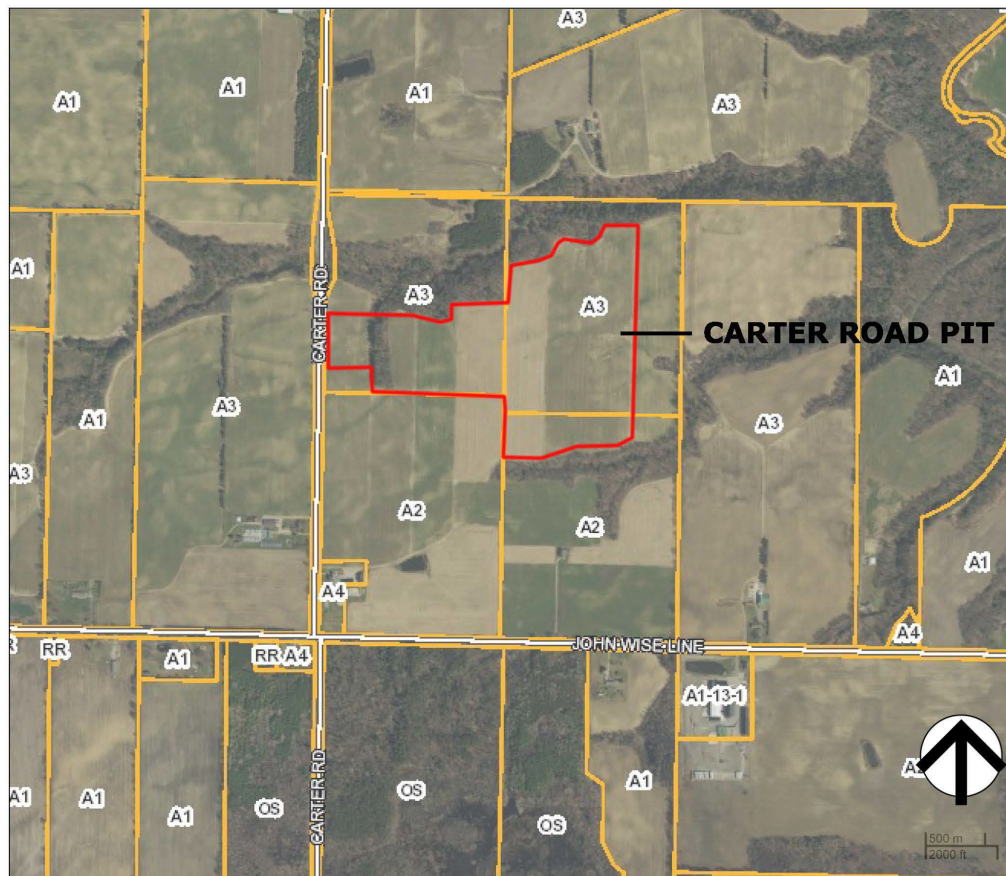
-  SUBURBAN AREA
-  HOME BASED INDUSTRIAL PARK
-  HIGHWAY COMMERCIAL
-  CONSERVATION LANDS
-  SPECIFIC POLICY AREAS
-  MINERAL AGGREGATE OPERATION
-  HAMLET
-  COMMUNITY IMPROVEMENT PROJECT AREA



Figure
12



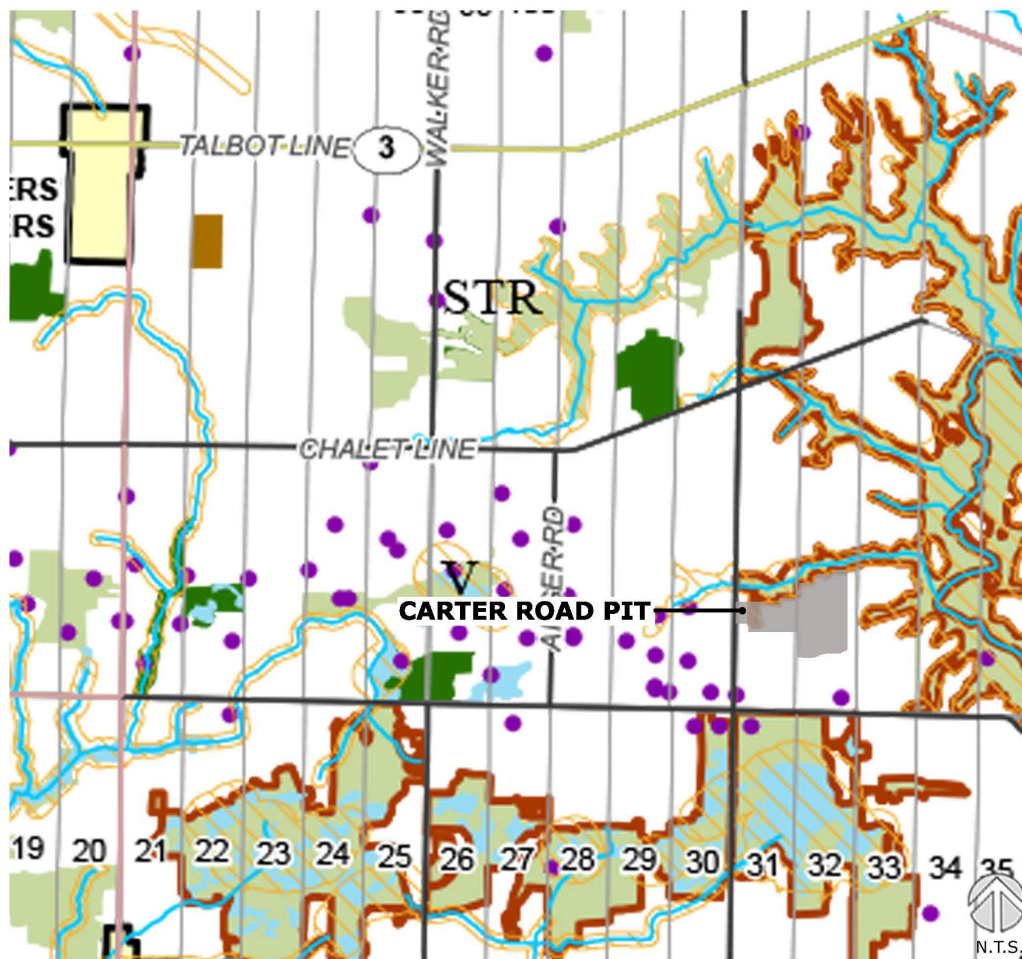
Elgin Mapping Web

Zoning Map

**Antonissen
Trucking Inc.
Carter Road Pit**



Figure
13



Township of Malahide, Official Plan, Schedule 'A2' - Constraints, January 2023

Constraints

Antonissen Trucking Inc. Carter Road Pit

LEGEND:

- Locally Significant (10-20 ha)
- Provincially Significant (20+ ha)
- Significant Wetlands
- Significant A.N.S.I.'s
- Hamlets
- Hazard Lands
- Former Waste Disposal Site
- Sewage Treatment
- Existing Petroleum Wells



Figure
14

1.3 SOURCE PROTECTION AREA

The following information is described on page 5 of the hydrogeology report: *“Based on a review of available Source Protection mapping, the site is not within any identified Well Head Protection Area (WHPA) or Intake Protection Zone (IPZ). In addition, there is no WHPA-Q area identified at or near the site. The site and surrounding lands are mapped within a Highly Vulnerable Aquifer area, likely due to the surficial geology and local depth to water table. As noted later in this report, the proposed extraction will remain well above the water table and will not disturb protective geological layers that overlay any deeper aquifer systems that may exist.”*

Surface Water

There are no surface water features within the proposed licence. The coarse, sandy soils on site have high infiltration rates and relatively little surface runoff can be expected on the site except during heavy rainfall events and spring snow melt over frozen ground. Surface drainage is either directed to the low areas or depressions within the fields and/or the adjacent water courses described below on page 4 in the hydrogeology report.

The site is located within the Big Otter Creek watershed (Long Point Region Conservation Authority). The Pirie Creek tributary flows west to east north of the proposed licence and joins Big Otter Creek approximately 615 m east of the site. The creek valley is deeply incised into the landscape. The main creek elevation varies from approximately 207 mASL near Carter Road, to 197 mASL near the northeast corner of the site.

A second (unnamed) tributary creek valley system begins at a tile drain outlet along the south edge of the site and extends eastward, wrapping around the southeast corner of the site then flowing east into the Big Otter Creek, approximately 600 m east of the site. The unnamed creek elevation varies from approximately 220 mASL at the tile drain outlet to 207 mASL along the east site boundary.

Groundwater Table

Groundwater Science Corp. was retained to complete a review of the hydrogeologic information available for the site and surrounding area and determine the groundwater table elevations on site (see Appendix A). Based on the information in the technical report, the water table within the proposed extraction areas occurs at a maximum elevation between 209 and 210 m AMSL in the south in MW1 and MW3 and 206 m AMSL in MW2 the northeast part of the site. The water table continues to slope to the northeast as shown in Figure 5 of the Groundwater Science report. The proposed maximum depth of extraction within this sand pit is well above the maximum proposed extraction depth as shown on the site plans.

1.4 QUALITY AND QUANTITY OF AGGREGATE ON SITE

The property is located within a glaciolacustrine shallow water and deltaic deposit modified by wind and consists of fine to medium sand. Refer to Ontario Geological Survey Report 220 “Quaternary Geology of the Tillsonburg Area Southern Ontario” by P.J. Barnett 1982 MNR. These sand deposits stretch from Aylmer to Simcoe along the north shore of Lake Erie. The applicant currently operates a sand pit licence

no 625026 in Part Lot 6, Concession 3 on Sparta Line. The fine to medium sand is being used extensively by the dairy industry for bedding sand. Similar licensed sand hill pit operations can be found in the sand plains of Elgin and Norfolk Counties and the Municipality of Strathroy-Caradoc.

Based on the boreholes drilled on site by Groundwater Science and the test pits dug by the applicant, the sand deposit above the high water table buffer is approximately 3 to 12 m in thickness. Using an average extraction depth for the site would equal 1.6 million m³ or a minimum of 2.5 million tonnes of sand using the standard conversion factor of 1.6 kg/m³.

1.5 MAIN HAUL ROUTES AND PROPOSED TRUCK TRAFFIC TO AND FROM SITE

The proposed entrance/exit for the pit is to use an existing farm entrance onto John Wise Line, south of the licence (see figure 15). Trucks will use an existing laneway to access the pit. Loaded truck movements will be west along John Wise Line.



Figure 15

1.6 PROGRESSIVE AND FINAL REHABILITATION

The operation of farm machinery is difficult on some of the steep, sandy slopes. The applicant plans to level the knolls on the property to make it more suitable for agricultural use, including decreasing costs and increasing productivity, as described in this section. The reduction of the steeper slopes will reduce the topography limitation on these fields. The sand hills and/or knolls will be levelled to the elevations shown on the site plans in order to reduce the steeper slopes and blend in with the grades on the surrounding fields. Rehabilitation techniques to restore 100% of the area to be extracted back to a productive agricultural use will include the following as indicated on the site plan:

- Deep ripping to eliminate compaction, where necessary
- Spreading of available on-site topsoil of and fine grading
- Spreading of manure and working into soil as a fertilizer using accepted agricultural practices
- Seeding with an appropriate grass/legume mixture
- Using accepted farming practices to restore the lands to agricultural use

Rehabilitation techniques will be similar to those successfully used by the applicant to rehabilitate the lands back to agriculture in their sand pit, licence no 625026 on Sparta Line (see figures 10 and 11).

2.0 TECHNICAL REPORTS

2.1 Hydrogeological Assessment: Groundwater Science Corp. (Appendix A)

The following is presented in the report:

“Based on the lack of anticipated impact: the baseline data set available at the site: and, the proposal to remain 8 m or more above the maximum predicted water table, we do not recommend any extraction related monitoring program for the proposed Carter Road pit.”

The following conclusions are presented in the report:

“Based on the results of the impact assessment there are no potential for significant adverse effects to groundwater and surface water resources and their uses; and there is no potential for significant impacts to local groundwater aquifers, natural environment features or water supply associated with the proposed Carter Road Pit.”

2.2 Natural Environment Level Two: Terrastory Consulting (Appendix B)

The following conclusions are presented in the report:

“Terrastory reviewed potential impacts to the documented natural heritage feature components in this NER. It is emphasized that the majority of the Site is maintained for intensive agricultural production (cash crops), and that most significant natural features are located beyond the boundaries of the Site (i.e. adjacent lands).

The site plan incorporates feature appropriate setbacks (i.e. 15 m and 10 m setbacks) from the dripline of the wooded valleylands and measures to mitigate the removal of the mixed Woodland (WOM) which forms part of the Big Otter Creek Regionally Significant Life Science ANSI. Minor removal of the Regionally Significant ANSI (which may have been incorrectly mapped, see discussion in Section 6.1) will be addressed through measures associated with creation of a Woodland Enhancement Area on tablelands north of the Pirrie Creek valleyland.

Overall, it has been determined that no negative impacts to the above-noted significant natural features will occur provided that all technical recommendations offered in Section 6.5 are implemented in full. The ARA site plan that directs and constrains pit operations incorporates all technical recommendations made herein, and provides further notes related to long-term rehabilitation of the site.”

2.3 Archaeological Assessment Stage 2: Timmins Martelle Heritage Consultants (Appendix C)

The following recommendations are stated in the report:

Should previously undocumented (i.e. unknown or deeply buried) archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the Ontario Heritage Act.

The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c. 33 requires that any person discovering human remains must notify the police or coroner and Crystal Forrest, A/Registrar of Burial Sites, Ontario Ministry of Government and Consumer Services. Her telephone number is 416-212-7499 and email address is Crystal.Forrest@ontario.ca

Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48(1) of the Ontario Heritage Act and any Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48(1) of the Ontario Heritage Act and not be altered, or have artifacts removed from them, except by a person holding an archaeological license.

MCM (Ministry of Citizen and Multiculturalism) entered the report into the Ontario Public Register of Archaeological Reports on September 5, 2023 and issued a letter of acceptance.

2.4 Noise Assessment Report:

A noise assessment report is not required as per the provincial standards under the Aggregate Resources Act because there are no sensitive receivers located within 150 m of the proposed extraction areas.

2.5 Site Plans: Harrington McAvan Ltd. (Appendix D)

CONCLUSION

With the investigation and planning which has been prepared to support the extraction and rehabilitation of this site, we are confident that the site plans, as prepared, adequately address and mitigate any potential adverse impacts of the proposed operation on the surrounding land uses while maximizing the after-use potential of the property. The removal of the sand hills and rehabilitation of the site will improve the lands for agricultural use. This has been successfully demonstrated in the applicant's existing pit located on Sparta Line. Based on the excellent track record of Mr. Antonissen in operating and rehabilitating their existing pit, we believe that the application for this pit should be approved.

HARRINGTON MCAVAN LTD.

A handwritten signature in black ink, appearing to read 'B. Janssen', is positioned above the printed name.

BERNIE JANSSEN, B.E.S.

Principal / Aggregate Resources Specialist

BJ/wp

Statement of Qualifications

Harrington McAvan Ltd

Bernie Janssen, B.E.S., Principal and Aggregate Resource Specialist

Harrington McAvan Ltd is a firm of landscape architects practicing in Ontario for the past forty-eight years. The firm has expertise in landscape architecture, earth sciences, and biology, with a focus on stream and wetland restoration and rehabilitation projects.

Harrington McAvan Ltd (previously Harrington and Hoyle Ltd.) have been producing Site Plans for aggregate licenses for the past forty years and in that time have prepared well over 150 successful plans. The firm has consulted to the Ontario Ministry of Natural Resources on a variety of legislative initiatives and was retained in 1990 to prepare the *Generic 'Class A' Site Plans* as examples of new standards required under the Aggregate Resources Act (ARA). The firm is an associate member of the Ontario Stone, Sand & Gravel Association (formerly Aggregate Producers Association of Ontario).

Mr. Bernie Janssen received his Bachelor of Environmental Studies degree from the University of Waterloo in 1983. He had over fourteen years experience working in MNR's aggregate program in the greater Toronto and London areas, dealing with plans, license applications, and reports before joining Harrington McAvan Ltd in 1997.

Mr. Janssen specializes in compliance assessments and reports under the ARA, operations planning, and aggregate resource assessment. In 1998 he was granted approval by the Ministry of Natural Resources to prepare site plans under the Aggregate Resources Act.