REPORT

Stage 1 and 2 Archaeological Assessment

Safarik Pit, 4275 Concession Road 7, Puslinch, Part of Lot 29, Concession 7, Geographic Township of Puslinch, County of Wellington, Ontario

Licensee: Rhiannon Fisher, MSc, RPA (P468)
PIF: P468-0103-2022

Submitted to:

CBM Aggregates, a division of St. Marys Cement Inc. (Canada)

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Executive Summary

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

WSP Canada Inc. (WSP) was retained by CBM Aggregates, a division of St. Marys Cement Inc. (Canada) (the Client), to conduct a Stage 1 and 2 Archaeological Assessment of a property located at 4275 Concession Road 7, Township of Puslinch, Wellington County, Ontario. The Stage 1 and 2 Archaeological Assessment was undertaken in support of an application to the Ministry of Natural Resources (MNR) for a new Class A Pit Below Water licence application under the *Aggregate Resources Act* (ARA) (the Project). The Study Area measures approximately 27.6 hectares (ha) in size and consists of agricultural fields bisected by a hydro corridor, with a rural residential property in the southwest corner of the property. The Study Area is located on Lot 29, Concession 7, Geographic Township of Puslinch, Wellington County, Ontario (Map 1 and Map 2).

Stage 1 background research identified the Study Area to have archaeological potential for the recovery of both pre-contact Indigenous and historic Euro-Canadian archaeological resources based on; the proximity to several registered archaeological sites; the location being within an area with a history of Euro-Canadian occupation dating back to the early 19th Century; and the presence of well-drained, sandy soil.

The Stage 1 and 2 Archaeological Assessment of the Study Area took place over 10 days between July 12, 2022, and November 23, 2023. The Study Area was subject to both pedestrian and test pit survey at 5 m intervals. During the Stage 1 and 2 Archaeological Assessment, one archaeological site, Location 1 (AiHa-71) and three archaeological findspots (Locations 2 through 4) were identified.

Location 1 (AiHa-71) measures approximately 40 metres (m) by 40 m and was identified during the test pit survey within the southwestern portion of the Study Area, adjacent to the existing homestead. A total of 264 artifacts were recovered from 33 test pits, which consisted of 211 historical Euro-Canadian artifacts and 53 faunal elements. The artifacts assemblage includes structural material and domestic household items, indicative of a mid-late 19th century historical homestead.

Based on the results of the Stage 1 and 2 Archaeological Assessment, the following recommendations are presented:

1) The artifact assemblage recovered from Location 1 (AiHa-71) signifies that 80% or more of the site's occupation predates 1900 and it is therefore considered to have further cultural heritage value or interest (CHVI) according to the MCM (2021) *19th Century Rural Historical Farmstead Sites Standards for Consultant Archaeologists*. A Stage 3 Archaeological Assessment following Section 3.2.2 Standards 1-12 of *19th Century Rural Historical Farmstead Sites Standards for Consultant Archaeologists* is recommended:

    a. Following the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), Table 3.1, Standards 3-4, begin test unit excavation by excavating the 1 m^2 test units in a 10 m grid across the site.

    b. Place and excavate additional test units amounting to a minimum of 40% of the grid unit total, focusing on areas of interest within the site extent. The Stage 3 Archaeological Assessment

should be conducted to define the site extent, gather a representative sample of artifacts, and aid in the determination of a Stage 4 mitigation strategy, if required.

2) As per *Section 2.2, Standard 1* of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), Locations 2, 3, and 4 are not considered to have further cultural heritage value or interest, and no further assessment is recommended.

3) The remainder of the Study Area is considered to be sufficiently documented, and no further assessment is recommended.

The MCM is requested to review and provide a letter indicating their satisfaction with the results and recommendations presented herein, regarding the 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences, and to enter this report into the Ontario Public Register of Archaeological Reports.

Study Limitations

WSP Canada Inc. has prepared this report in a manner consistent with that level of care and skill ordinarily exercised by members of the archaeological profession currently practicing under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report. No other warranty expressed or implied is made.

This report has been prepared for the specific site, design objective, developments and purpose described to WSP by CBM Aggregates (CBM) a division of St. Marys Cement Inc. (Canada) (the Client). The factual data, interpretations and recommendations pertain to a specific project as described in this report and are not applicable to any other project or site location.

The information, recommendations and opinions expressed in this report are for the sole benefit of the Client. No other party may use or rely on this report or any portion thereof without WSP's express written consent. If the report was prepared to be included for a specific permit application process, then upon the reasonable request of the Client, WSP may authorize in writing the use of this report by the regulatory agency as an Approved User for the specific and identified purpose of the applicable permit review process. Any other use of this report by others is prohibited and is without responsibility to WSP. The report, all plans, data, drawings, and other documents as well as electronic media prepared by WSP are considered its professional work product and shall remain the copyright property of WSP, who authorizes only the Client and Approved Users to make copies of the report, but only in such quantities as are reasonably necessary for the use of the report by those parties. The Client and Approved Users may not give, lend, sell, or otherwise make available the report or any portion thereof to any other party without the express written permission of WSP. The Client acknowledges that electronic media is susceptible to unauthorized modification, deterioration, and incompatibility and therefore the Client cannot rely upon the electronic media versions of WSP's report or other work products.

Unless otherwise stated, the suggestions, recommendations and opinions given in this report are intended only for the guidance of the Client in the design of the specific project.

Special risks occur whenever archaeological investigations are applied to identify subsurface conditions and even a comprehensive investigation, sampling and testing program may fail to detect all or certain archaeological resources. The sampling strategies incorporated in this study comply with those identified in the Ministry of Citizenship and Multiculturalism 2011 *Standards and Guidelines for Consultant Archaeologists.*

Project Personnel

Project Director	George Schneider, Principal, Senior Hydrologist
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Acknowledgements

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1.0 PROJECT CONTEXT

1.1 Development Context

WSP Canada Inc. (WSP) was retained by CBM Aggregates, a division of St. Marys Cement Inc. (Canada) (the Client), to conduct a Stage 1 and 2 Archaeological Assessment of a property located at 4275 Concession Road 7, Township of Puslinch, Wellington County, Ontario. The Stage 1 and 2 Archaeological Assessment was undertaken in support of an application to the Ministry of Natural Resources (MNR) for a new Class A Pit Below Water licence application under the *Aggregate Resources Act* (ARA) (the Project). The Study Area measures approximately 27.6 hectares (ha) in size and consists of agricultural fields bisected by a hydro corridor, with a rural residential property in the southwest corner of the property. The Study Area is located on Lot 29, Concession 7, Geographic Township of Puslinch, Wellington County, Ontario (Map 1 and Map 2).

The Stage 1 and 2 Archaeological Assessment was conducted under professional consulting licence P468 issued to Rhiannon Fisher of WSP (PIF# P468-0103-2022). All activities undertaken during the assessment followed the *Ontario Heritage Act* and the Ministry of Citizenship and Multiculturalism (2011) *Standards and Guidelines for Consultant Archaeologists.* Permission to access the Study Area for the Stage 1 property inspection and Stage 2 Archaeological Assessment was granted by David Hanratty of CBM Aggregates on July 12, 2022.

1.2 Objectives

The objectives of the Stage 1 Archaeological Assessment, as outlined by the 2011 *Standards and Guidelines for Consultant Archaeologists* published by the MCM, are as follows:

- To provide information about the Study Area's geography, history, previous archaeological fieldwork and current land condition;
- To evaluate in detail the Study Area's archaeological potential which will support recommendations for Stage 2 assessment for all or parts of the property; and,
- To recommend appropriate strategies for Stage 2 assessment.

The objectives of the Stage 2 Archaeological Assessment are:

- To provide an overview of archaeological resources on the Study Area, and to determine whether any of the resources might be artifact and archaeological sites with cultural heritage value or interest; and,
- To provide specific direction for the protection, management, and/or recovery of these resources if discovered and recommend the appropriate Stage 3 assessment strategies if required.

To meet these objectives WSP archaeologists conducted:

- Pedestrian survey at five metre intervals within the Study Area of all agricultural fields capable of being ploughed, disked and allowed to weather sufficiently to facilitate the detection and collection of any potential archaeological resources as per Section 2.1.1. of the MCM's *Standards and Guidelines for Consultant Archaeologists* and Stage 2 test pit survey at a 5 m interval within portions of the Study Area, following *Section 2.1.2* of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011).

1.3 Historical Context

1.3.1 Regional Indigenous Pre-Contact History

The general culture history of southern Ontario based on Ellis and Ferris (1990), spanning the pre-Contact Indigenous period is summarised in Table 1.

Table 1: Overview of Cultural Chronology of Southern Ontario

Period		Time Period (circa)	Characteristics
Paleo	Early	10,950 – 10,350 BP	Gainey, Barnes and Crowfield traditions; Small bands; mobile hunters and gatherers and large territories; Fluted projectiles.
	Late	10,350 BP – 9950 BP	Holcomb, Hi-Lo and Lanceolate biface traditions; continuing mobility; Campsite/Way-Station sites; Smaller territories are utilized; Non-fluted projectiles.
Archaic	Early	9950 – 7950 BP	Side-notched, corner-notched, and bifurcate base traditions; growing diversity of stone tool types; heavy woodworking tools appear (e.g., ground stone axes and chisels).
	Middle	7950 – 4450 BP	Stemmed, Brewerton side- and corner-notched traditions; reliance on local resources; populations increasing; more ritual activities; fully ground and polished tools; netsinkers common; earliest copper tools.
	Late	4450 – 2900 BP	Narrow Point, Broad Point and Small Point traditions; less mobility; use of fish-weirs; more formal cemeteries appear; stone pipes emerge; long-distance trade.
Woodland	Early	2900 – 2350 BP	Meadowood tradition; cord-roughened ceramics emerge; Meadowood cache blades and side-notched points; bands of up to 35 people.
	Middle	2350 – 1400 BP	Saugeen, Point Peninsula and Couture traditions; stamped ceramics appear; Saugeen projectile points; cobble spall scrapers; seasonal settlements and resource utilization; post holes, hearths, middens, cemeteries, and rectangular structures identified.
	Transitional	1400 – 1050 BP	Princess Point tradition; cord roughening, impressed lines, and punctate designs on pottery; adoption of maize horticulture at the western end of Lake Ontario; oval houses and 'incipient' longhouses; first palisades; villages with up to 75 people.
	Early Late Woodland	1050 – 650 BP	Glen Meyer tradition; settled village-life based on agriculture; small villages (0.4 ha) with up to 75-200 people and 4-5 longhouses; semi-permanent settlements.
	Middle Late Woodland	650 – 550 BP	Uren and Middleport traditions; classic longhouses emerge; larger villages (1.2 ha) with up to 600 people; more permanent settlements (30 years).
	Late Woodland	550 – 350 BP	Larger villages (1.7 ha) with examples up to 5 ha and up to 2,500 people; extensive croplands; hamlets, cabins, camps, and cemeteries; potential tribal units; fur trade begins ca. 1580; European trade goods appear.

*(BP) Before Present Era dates are calculated using the year 1950 as the recognized start date of the present era.

1.3.2 Paleo Period

Archaeological evidence of human occupation of southern Ontario begins just after the end of the Wisconsin Glacial Period. Although there were a complex series of ice retreats and advances which played a large role in shaping the local topography, south-central Ontario was eventually ice free by 12,500 years ago.

Human settlement can be traced back over 11,000 years, archaeologically, when this area was settled by Indigenous groups that had been living south of the Great Lakes. The period of these early Indigenous inhabitants is known as the Paleo Period (Ellis and Deller 1990).

Our current understanding of settlement patterns of Early Paleo peoples suggests that small bands, consisting of probably no more than 25-35 individuals, followed a pattern of seasonal mobility extending over large territories. One of the most thoroughly studied of these groups followed a seasonal round that extended from as far south as Chatham to the Horseshoe Valley north of Barrie. Early Paleo sites tend to be located in elevated locations on well-drained loamy soils. Many of the known sites were located on former beach ridges associated with glacial lakes. There are a few extremely large Early Paleo sites, such as one located close to Parkhill, Ontario, which covered as much as six hectares. It appears that these sites were formed when the same general locations were occupied for short periods of time over the course of many years. Given their placement in locations conducive to the interception of migratory mammals such as caribou, it has been suggested that they may represent communal hunting camps. There are also smaller Early Paleo camps scattered throughout the interior of southwestern and south-central Ontario, usually situated adjacent to wetlands.

Research suggests that population densities were very low during the Early Paleo Period (Ellis and Deller 1990: 54). Archaeological examples of Early Paleo sites are rare.

The Late Paleo Period (10,350 – 9950 BP) has been less well researched and is consequently more poorly understood. By this time the environment of south-central Ontario was coming to be dominated by closed coniferous forests with some minor deciduous elements. It seems that many of the large game species that had been hunted in the early part of the Paleo Period had either moved further north, or as in the case of the mastodons and mammoths, became extinct.

Like the Early Paleo peoples, Late Paleo peoples covered large territories as they moved about in response to seasonal resource fluctuations. Provincially, Late Paleo projectile points are far more common than Early Paleo materials, suggesting a relative increase in population.

The end of the Late Paleo Period was heralded by numerous technological and cultural innovations that appeared throughout the Archaic Period. These innovations may be best explained in relation to the dynamic nature of the post-glacial environment and region-wide population increases.

1.3.3 Archaic Period

During the Early Archaic Period (9950 – 7950 BP), the jack and red pine forests that characterized the Late Paleo environment were replaced by forests dominated by white pine with some associated deciduous trees (Ellis et al.1990: 68-69). One of the more notable changes in the Early Archaic Period is the appearance of side and corner-notched projectile points. Other significant innovations include the introduction of ground stone tools such as celts and axes, suggesting the beginnings of a simple woodworking industry. The presence of these often large and not easily portable tools suggests there may have been some reduction in the degree of seasonal movement, although it is still suspected that population densities were quite low, and band territories large.

During the Middle Archaic Period (7950 – 4450 BP) the trend to more diverse toolkits continued, as the presence of net-sinkers suggest that fishing was becoming an important aspect of the subsistence economy. It was also at

this time that "bannerstones" were first manufactured. Bannerstones are carefully crafted ground stone devices that served as a counterbalance for atlatls or spear-throwers.

Another characteristic of the Middle Archaic is an increased reliance on local, often poor-quality chert resources for the manufacturing of projectile points. It seems that during earlier periods, when groups occupied large territories, it was possible for them to visit a primary outcrop of high-quality chert at least once during their seasonal round. However, during the Middle Archaic, groups inhabited smaller territories that often did not encompass a source of high-quality raw material. In these instances, lower quality materials which had been deposited by the glaciers in the local till and river gravels were utilized.

This reduction in territory size was probably the result of gradual region-wide population growth which led to the infilling of the landscape. This process forced a reorganization of Indigenous subsistence practices, as more people had to be supported from the resources of a smaller area. During the latter part of the Middle Archaic, technological innovations such as fish weirs have been documented as well as stone tools especially designed for the preparation of wild plant foods.

It is also during the latter part of the Middle Archaic Period that long-distance trade routes began to develop, spanning the northeastern part of the continent. In particular, native copper tools manufactured from a source located northwest of Lake Superior were being widely traded (Ellis et al.1990: 66). By 5450 BP the local environment had stabilized in a near modern form (Ellis et al. 1990: 69).

During the Late Archaic (4450 – 2900 BP) the trend towards decreased territory size and a broadening subsistence base continued. Late Archaic sites are far more numerous than either Early or Middle Archaic sites, and it seems that the local population had definitely expanded. It is during the Late Archaic that more formal cemeteries appear. The appearance of formal cemeteries during the Late Archaic has been interpreted as a response to increased population densities and competition between local groups for access to resources. It is argued that cemeteries would have provided strong symbolic claims over a local territory and its resources. These cemeteries are often located on heights of well-drained sandy/gravel soils adjacent to major watercourses.

This suggestion of increased territoriality is also consistent with the regionalized variation present in Late Archaic projectile point styles. It was during the Late Archaic that distinct local styles of projectile points appear. Also, during the Late Archaic the trade networks which had been established during the Middle Archaic continued to flourish. Native copper from northern Ontario and marine shell artifacts from as far away as the Mid-Atlantic coast are frequently encountered as grave goods. Other artifacts such as polished stone pipes and banded slate gorgets also appear on Late Archaic sites. One of the more unusual and interesting of the Late Archaic artifacts is the birdstone. Birdstones are small, bird-like effigies usually manufactured from green banded slate.

1.3.4 Woodland Period

The Early Woodland Period (2900 – 2350 BP) is distinguished from the Late Archaic Period primarily by the addition of ceramic technology. While the introduction of pottery provides a useful demarcation point for archaeologists, it may have made less difference in the lives of the Early Woodland peoples.

The first pots were thick walled and friable. It has been suggested that they were used in the processing of nut oils by boiling crushed nut fragments in water and skimming off the oil. These vessels were not easily portable, and individual pots must not have enjoyed a long use life.

There have also been numerous Early Woodland sites located at which no pottery was found, suggesting that ceramic vessels had yet to assume a central position in the day-to-day lives of Early Woodland peoples.

Other than the introduction of ceramic technology, the lifeways of Early Woodland peoples show a great deal of continuity with the preceding Late Archaic Period. For instance, birdstones continue to be manufactured, although the Early Woodland varieties have "pop-eyes" which protrude from the sides of their heads. Likewise, the thin, well-made projectile points which were produced during the terminal part of the Archaic Period continue in use. However, the Early Woodland variants were side-notched rather than corner-notched, giving them a slightly altered and distinctive appearance.

The trade networks which were established in the Middle and Late Archaic also continued to function, although there does not appear to have been as much traffic in marine shell during the Early Woodland Period. During the last 200 years of the Early Woodland Period, projectile points manufactured from high quality raw materials from the American Midwest begin to appear on sites in southwestern Ontario.

In terms of settlement and subsistence patterns, the Middle Woodland (2350 – 1400 BP) provides a major point of departure from the Archaic and Early Woodland Periods. While Middle Woodland peoples still relied on hunting and gathering to meet their subsistence requirements, fish were becoming an even more important part of the diet.

In addition, Middle Woodland peoples relied much more extensively on ceramic technology. Middle Woodland vessels are often heavily decorated with impressed designs covering the entire exterior surface and upper portion of the vessel interior.

It is also at the beginning of the Middle Woodland Period that rich, densely occupied sites appear along the margins of major rivers and lakes. While these areas had been utilized by earlier peoples, Middle Woodland sites are significantly different in that the same location was occupied off and on for as long as several hundred years and large deposits of artifacts often accumulated. Unlike earlier seasonally utilized locations, these Middle Woodland sites appear to have functioned as base camps, occupied off and on over the course of the year. There are also numerous small upland Middle Woodland sites, many of which can be interpreted as special purpose camps from which localized resource patches were exploited. This shift towards a greater degree of sedentism continues the trend witnessed from at least Middle Archaic times and provides a prelude to the developments that follow during the Late Woodland Period.

The Late Woodland Period began with a shift in settlement and subsistence patterns involving an increasing reliance on corn horticulture (Fox 1990: 185; Smith 1990; Williamson 1990: 312). Corn may have been introduced into southwestern Ontario from the American Midwest as early as 1500 BP or a few centuries before. Corn did not become a dietary staple, however, until at least three to four hundred years later, and then the cultivation of corn gradually spread into south-central and southeastern Ontario.

During the early Late Woodland, particularly within the Princess Point Complex (circa 1450 – 900 BP), a number of archaeological material changes have been noted: the appearance of triangular projectile point styles, first seen during this period begin with the Levanna form; cord-wrapped stick decorated ceramics using the paddle and anvil forming technique replace the mainly coil-manufactured and dentate stamped and pseudo-scallop shell impressed ceramics; and if not appearance, increasing use of maize as a food source (e.g., Bursey 1995; Crawford et al. 1997; Ferris and Spence 1995: 103; Martin 2004 [2007]; Ritchie 1971: 31-32; Spence et al. 1990; Williamson 1990: 299).

The Late Woodland Period is widely accepted as the beginning of agricultural life ways in south-central Ontario. Researchers have suggested that a warming trend during this time may have encouraged the spread of maize

into southern Ontario, providing a greater number of frost-free days (Stothers and Yarnell 1977). Further, shifts in the location of sites have also been identified with an emphasis on riverine, lacustrine and wetland occupations set against a more diffuse use of the landscape during the Middle Woodland (Dieterman 2001).

The first agricultural villages in southern Ontario date to the 10th century. Unlike the riverine base camps of the Middle Woodland Period, these sites are located in the uplands, on well-drained sandy soils. Village sites dating between 1050 – 650 BP share many attributes with the historically reported Late Woodland sites, including the presence of longhouses and sometimes palisades. However, these early longhouses typically smaller, averaging about 12.4 metres in length (Dodd et al. 1990: 349; Williamson 1990: 304-305). It is also quite common to find the outlines of overlapping house structures, suggesting that these villages were occupied long enough to necessitate re-building.

The Jesuits reported that the Huron moved their villages once every 10-15 years, when the nearby soils had been depleted by farming and conveniently collected firewood grew scarce (Pearce 2010). It seems likely that early Late Woodland peoples occupied their villages for considerably longer, as they relied less heavily on corn than did later groups, and their villages were much smaller, placing less demand on nearby resources.

Judging by the presence of carbonized corn kernels and cob fragments recovered from sub-floor storage pits, agriculture was becoming a vital part of the early Late Woodland economy (Crawford et al. 1997). However, it had not reached the level of importance it would in the middle Late and Late Woodland Periods. There is ample evidence to suggest that more traditional resources continued to be exploited and comprised a large part of the subsistence economy (Dodd et al. 1990).

The middle Late Woodland Period (650 – 550 BP) witnessed several interesting developments in terms of settlement patterns and artifact assemblages. Changes in ceramic styles have been carefully documented, allowing the placement of sites in the first or second half of this 100-year period (Dodd et al. 1990). Moreover, villages, which averaged approximately 0.6 ha in extent during the early Late Woodland Period, now consistently range between 1 and 2 ha (Dodd et al. 1990).

House lengths also change dramatically, more than doubling to an average of 30 m, while houses of up to 45 m have been documented. This increase in longhouse length has been variously interpreted. The simplest possibility is that increased house length is the result of a gradual, natural increase in population (Dodd et al. 1990: 323, 350, 357; Smith 1990). However, this does not account for the sudden shift in longhouse lengths around 650 BP. Other possible explanations involve changes in economic and socio-political organization (Dodd et al. 1990: 357).

One suggestion is that during the middle Late Woodland Period small villages were amalgamating to form larger communities for mutual defense (Dodd et al. 1990, p. 357). This hypothesis draws support from the fact that some sites had up to seven rows of palisades, indicating at least an occasional need for strong defensive measures. There are, however, other middle Late Woodland villages which had no palisades present (Dodd et al. 1990). More research is required to evaluate these competing interpretations.

Initially at least, the late Late Woodland Period (550 – 350 BP) continues many of the trends which have been documented for the proceeding century. For instance, between 500 and 450 BP house lengths continue to grow, reaching an average length of about 62 m. One longhouse excavated on a site southwest of Kitchener was an incredible 123 m (Lennox and Fitzgerald 1990: 444-445). After 450 BP, house lengths begin to decrease, with houses dating between 400 – 320 BP averaging 30 m in length.

Village size also continues to expand throughout the late Late Woodland Period, with many of the larger villages showing signs of periodic expansions. The latter part of the middle Late Woodland Period and the first century of the late Late Woodland Period was a time of village amalgamation. One large village situated just north of Toronto has been shown to have expanded on no fewer than five occasions. These large villages were often heavily defended with numerous rows of wooden palisades, suggesting that defence may have been one of the rationales for smaller groups banding together. Village expansion has been clearly documented at several late Late Woodland sites throughout southwestern and south-central Ontario. The excavations at the Lawson site, a large village located in southwestern Ontario, has shown that the original village was expanded by at least twenty percent to accommodate the construction of nine additional longhouses (Anderson 2009).

1.3.5 Post-Contact Indigenous Period

The post-contact Indigenous occupation of southern Ontario was heavily influenced by the dispersal of various Iroquoian-speaking peoples from modern-day New York State and the subsequent return of Algonkian-speaking groups from northern Ontario at the end of the 17th century and beginning of the 18th century (Schmalz 1991).

Following the arrival of Europeans to North America, the nature of Indigenous settlement size, population distribution, and material culture shifted as settlers began to colonize the land. Despite this shift in Indigenous life ways, “written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to Iroquoian systems of ideology and thought” (Ferris 2009:114). This deep continuity is reflected in the oral and written histories of the Anishinaabek peoples as well. As a result, Indigenous peoples of southern Ontario have left behind archaeologically significant resources throughout southern Ontario which show continuity with past peoples, even if this connection has not been recorded in historical Euro-Canadian documentation.

The Study Area is situated within the historic Geographic Township of Puslinch, Wellington County, Ontario. The Study Area is within lands that first enter the Euro-Canadian historic record as part of Treaty Number 3 made with the Mississauga on December 7, 1792, though the original ‘Between the Lakes’ purchase for the land occurred in 1784. This purchase was to procure a permanent place for that part of the Six Nations coming into Canada.

> *All that parcel or tract of land lying and being between the Lakes Ontario and Erie, beginning at Lake Ontario, four miles south' westerly from the point opposite to Niagara Fort, known by the name of Mississaugue Point, and running from thence along the said lake to the creek that falls from a small lake, known by the name of Washquarter into the said Lake Ontario, and from thence north forty-five degree west, fifty miles; thence south forty-five degrees west, twenty miles; and thence south until it strikes the River La Tranche; then down the stream of the said river to that part or place where a due south course will lead to the mouth of Catfish Creek emptying into Lake Erie, and from the above-mentioned part or place of the aforesaid River La Tranche, following the south course to the mouth of the said Catfish Creek; thence down Lake Erie to the lands heretofore purchased from the Nation of Mississauga Indians; and from thence along the said purchase at Lake Ontario at the place of beginning as above mentioned together with all the woods, ways, paths, waters, watercourses and appurtenances thereunto belonging.*
>
> Morris 1943:18

1.3.6 Euro-Canadian Settlement

1.3.6.1 Puslinch Township, Wellington County

In 1838, the District of Wellington was established and contained the counties of Wellington, Waterloo, Grey and parts of Dufferin County. In 1854, Wellington County was formed and included the Townships and Towns of Amaranth, Arthur, Eramosa, Erin, Guelph, Maryborough, Nichol, Peel, Pilkington, Puslinch and Garafraxa (Wellington County 2023).

The Crown Survey of Puslinch Township began in 1828 and was completed by 1831. Settlers began to arrive in 1828 and the entire township was settled by 1840. The township was surveyed using a variation of the Double Front survey system that was commonly used between 1815 and 1829. The survey system produced a rectangular pattern of ten 100-acre lot allowances. The resulting survey created the modern farm landscape and road pattern that is still visible today (Dean 1969). Puslinch was named after a community in Devonshire, England. The population of Puslinch Township in 1829 – one year after surveying began – was 126. By 1877 the population had grown to 4,514. In the same year, the township was described as the "least valuable in an agricultural point of view, of any in the county" (Carter 1984).

Until 1852 the Study Area was a part of the District of Wellington, which included the counties of Wellington, Waterloo, Grey and parts of Dufferin County. In 1852, the district was reorganized, and the United Counties of Waterloo, Wellington and Grey were formed. In 1854, Wellington County became an individual entity that consisted of the Towns and Townships of Amaranth, Arthur, Eramosa, Erin, Guelph, Garafraxa, Maryborough, Nichol, Peel, Pilkington, and Puslinch. In 1879, the City of Guelph separated from the County. The county remained politically unchanged until 1999 when it was reorganized into seven new municipalities through the amalgamation of several towns and townships. Puslinch Township remained the only municipality to exist unchanged by the amalgamation. However, recent expansions of Guelph's city limits have resulted in portions of Puslinch being annexed into the city.

1.3.6.2 Lot 29, Concession 7, Front, Township of Puslinch

The Study Area is located on part of Lot 29, Concession 7, Geographic Township of Puslinch, Wellington County. Though the land registry records for this property were not found, an early 19th Century map showing patents in Puslinch Township (Archives of Ontario, n.d.) as well as the Puslinch Historical Society (Puslinch Historical Society 1950) indicate that John Smith received the Crown patent to the property in 1856. The 1861 personal census indicates that John Smith and his family lived on Lot 29, Concession 7, Front in a log house, though the 1861 *Tremaine's Map of the County of Wellington* does not show a structure (Map 3). The 1878 *Illustrated Historical Atlas of Wellington County* indicates that Lot 29, Concession 7, Front was owned by M. Fahrner, and a structure is depicted on the map in the northeastern corner of the property (Map 4).

The 1954 Aerial Photograph shows the existing structures and farm roads in the southwestern corner of the property, but no other disturbances are noted (Map 5).

1.4 Archaeological Context

1.4.1 Natural Environment

The Study Area is situated within the Horseshoe moraines physiographic region (Chapman and Putnam 1984: 127-129).

> *From the edge of the escarpment in the Town of Caledon the moraines trend somewhat west of the Niagara Escarpment forming a belt of moderately hilly relief…Associated with the moraines is a*

> *system of old spillways with broad gravel terraces and swampy floors…Good cross-sections of this landscape may be seen along Highway 7 from Rockwood to Georgetown…From Caledon southward the Horseshoe moraines resemble the section between Markdale and Walkerton. In both sections the hills are rugged and bouldery while broad gravel terraces or long cedar swamps lie alongside.*
>
> *Chapman and Putnam, 1984:128*

The soils of the Study Area consist of Dumfries soil, a medium-textured, and very dark, greyish brown loam (Map 6). Dumfries Loam can be found in irregular and steeply sloping areas; this type of soil exhibits good natural drainage and can be very stony. Overall, these soil types likely would have been suitable for Indigenous and European settler agricultural practices. The closest potable water source is Aberfoyle (Mill) Creek which flows along the north and west sides of the Study Area, approximately 1 km north of the Study Area and the closest substantial source of water is Emerald Lake, which is located approximately 2.4 km south of the Study Area.

1.4.2 Current Land Uses

The Study Area is located at 4275 7th Concession Road, Lot 29, Concession 7, Geographic Township of Puslinch, Wellington County, Ontario. The Study Area consists of an agricultural field which is bisected by a hydro corridor. There is a large deciduous forest north of the Study Area and a rural residential property in the southwest corner of the Study Area. There are several residential and farm buildings, and gravel driveways.

1.4.3 Previous Archaeological Assessments

At the time of writing this report, a search of all reports on the MCM's Past Portal corresponding to the County, Township and Region, identified one archaeological assessment previously conducted immediately adjacent to the northeastern Study Area boundary.

Between 2017 and 2021, AECOM completed a Stage 1 and 2 Archaeological Assessment of several properties for the proposed Highway 6 realignment project within the Townships of Puslinch and Flamborough (PIF# P123-0361-2017). The Stage 2 assessment consisted of a combination of pedestrian survey and test pit survey, which included the Stage 2 test pit survey of the woodlot immediately adjacent to the northeastern Study Area boundary.

During the assessment, four archaeological sites were identified, three of which were identified within 1 km of the Study Area. The Mast Site (AiHa-56) is located northeast of the Study Area and the Joseph Black Site (AhHa-55) is located over 1 km south of the Study Area, both of which are Euro-Canadian archaeological sites dating to the mid-19th century. The Bent Ash Site (AiHa-57) is located northeast of the Study Area, and the Noisy Cedars Site (AiHb-354) is located over 1 km west of the Study Area. Both the Bent Ash Site (AiHa-57) and the Noisy Cedars Site (AiHb-354) were undetermined pre-contact sites consisting of lithics. All four sites were recommended for Stage 3 Archaeological Assessment (AECOM 2023).

1.4.4 Registered Archaeological Sites

The Ontario Archaeological Sites Database (OASD) was consulted on 4 March 2022, and it was determined that there are 5 registered archaeological sites located within 1 km of the greater Study Area (Table 2).

Table 2: Registered Archaeological Sites within 1 km of the Study Area

Borden Number	Name	Time Period	Cultural Affiliation	Site Type	Current Development Status
AiHa-58	McNaughton Site	Post-Contact	Euro-Canadian	Homestead	No Further CHVI
AiHa-57*	Bent Ash Site	Pre-Contact	Indigenous	Unknown	No Further CHVI
AiHa-56	The Mast Site	Post-Contact	Euro-Canadian	Famstead, Outbuilding	No Further CHVI
AiHa-53	—	Post-Contact	Euro-Canadian	Homestead, midden	—
AiHa-45	—	Post-Contact	Euro-Canadian	Homestead	—

** denotes site within 300m of Study Area*
"—" denotes information was not available on the OASD

Of the 5 archaeological sites, one site is located within 300 m of the Study Area and is summarised below.

The Bent Ash Site (AiHa-57) was identified through Stage 2 test pit survey in 2017 by AECOM under PIF# P123-0361-2017 and is located within a forested property southwest of the intersection of Highway 401 and Highway 6. The site consisted of nine Indigenous artifacts found in situ within an area measuring 5 m x 5 m. The site was then subjected to Stage 3 test unit excavation under PIF# P123-0407-2018 and resulted in the recovery of 47 additional artifacts over a 10 m x 5 m area. The site was identified as a small, undisturbed Indigenous site. In 2022, the site was subject to a full Stage 4 excavation under PIF# P123-0510-2022. The excavation resulted in the recovery of 319 additional artifacts over an approximately 10 m by 9 m area. Though the report has not yet been approved by the MCM, the site has been fully excavated and has been determined to be fully documented and to have no further cultural heritage value or interest. The site is located approximately 100 m northeast of the Study Area.

1.5 Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present within a property. In accordance with the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* the following are features or characteristics that indicate archaeological potential:

- Previously identified archaeological sites;
- Water sources:
  - Primary water sources (lakes, rivers, streams, creeks);
  - Secondary water sources (intermittent streams and creeks; springs; marshes; swamps);
  - Features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised gravel, sand, or beach ridges; relic river or stream channels indicated by clear dip or swale in the topography; shorelines of drained lakes or marshes; and cobble beaches);
  - Accessible or inaccessible shoreline (e.g., high bluffs, swamps or marsh fields by the edge of a lake; sandbars stretching into marsh);
- Elevated topography (eskers, drumlins, large knolls, plateaux);

- Pockets of well drained sandy soil, especially near areas of heavy soil or rocky ground; distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases (there may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings);
- Resource areas including:
  - Food or medicinal plants;
  - Scarce raw minerals (e.g., quartz, copper, ochre or outcrops of chert);
  - Early Euro-Canadian industry (fur trade, mining, logging);
  - Areas of Euro-Canadian settlement; and
  - Early historical transportation routes.

In recommending a Stage 2 property survey based on determining archaeological potential for a Study Area, the MCM stipulates the following:

- No areas within 300 m of a previously identified site; water sources; areas of early Euro-Canadian Settlement; or locations identified through local knowledge or informants can be recommended for exemption from further assessment.
- No areas within 100 m of early transportation routes can be recommended for exemption from further assessment.
- No areas within the property containing an elevated topography; pockets of well-drained sandy soil; distinctive land formations; or resource areas can be recommended for exemption from further assessment.

Based on the above criteria, the Study Area components were determined to have archaeological potential for both pre-contact Indigenous and historical Euro-Canadian sites. This determination was based on: the proximity to significant registered archaeological sites; the location of the Study Area in an area with a history of Euro-Canadian occupation dating back to the early 19th; and the presence of well-drained, sandy soil.

2.0 FIELD METHODS

2.1 Stage 1 and 2 Archaeological Assessment

The Stage 1 and 2 Archaeological Assessment was conducted over 10 days between July 12, 2022, and November 23, 2023, under the professional archaeological consulting licence P468 issued to Rhiannon Fisher of WSP (PIF: P468-0103-2022). WSP archaeological field supervisors Shawn Bayes (R364), Martha Tildesley (P399) and Allison Nott (R460) acted as the licenced field directors during the Stage 1 and 2 Archaeological Assessment as per *Section 12* of the MCM's *Terms and Conditions for Archaeological Licences*, issued in accordance with clause 48(4)(d) of the *Ontario Heritage Act*. Map 7 illustrates the Stage 2 survey methods and provides a photographic key for images presented in this report.

The Stage 1 and 2 assessment employed strategies defined by the MCM in the 2011 *Standards and Guidelines for Consultant Archaeologists*.

The Stage 2 Archaeological Assessment involved the participation of archaeological field liaisons from the Mississaugas of the Credit First Nation, the Six Nations of the Grand River, and the Haudenosaunee Development Institute. Details of this participation is provided in Supplementary Documentation.

At the time of the Stage 2 Archaeological Assessment, the Study Area included areas of ploughed agricultural fields (19.71 ha), manicured lawn around an extant house and out-buildings (0.05 ha), small wooded areas (4.18 ha), areas of disturbance along the gravel driveway and agricultural buildings (1.68 ha), steeply sloped areas (1.71 ha), and permanently wet area (0.27 ha).wet.

The weather and lighting conditions during the Stage 2 fieldwork provided good visibility for all parts of the Study Area and were conducive to the identification and recovery of archaeological resources. The weather was on average partly sunny, and ranged from 5°C to 40°C degrees given the work was conducted over different seasons. Table 3 summarizes the weather conditions for each day while conducting the Stage 2 survey and the tasks completed each day. Lighting and weather conditions remained ideal over the days of the survey and at no time were field conditions detrimental to the survey activities or the observation, identification, or recovery of archaeological material.

Table 3: Weather Conditions During the Stage 2 Archaeological Assessment

Date	Temp	Weather	Task	Field Director
July 12, 2022	25°C	Partly sunny	Test Pit Survey	Shawn Bayes
July 13, 2022	25°C	Warm and overcast, periods of light rain	Test Pit Survey	Shawn Bayes
July 14, 2022	29°C	Sunny and clear	Test Pit Survey	Shawn Bayes
July 15, 2022	27°C	Hot and clear	Test Pit Survey	Shawn Bayes
July 21, 2022	25°C	Sunny with clouds	Test Pit Survey	Shawn Bayes
May 10, 2023	28°C	Sunny and hot	Pedestrian Survey	Martha Tildesley
May 11, 2023	28°C	Sunny and hot	Pedestrian Survey	Martha Tildesley
July 3, 2023	35°C	Sunny and hot	Pedestrian Survey	Martha Tildesley
July 4, 2023	40°C	Sunny and hot	Pedestrian Survey	Martha Tildesley
November 23, 2023	5°C	Overcast with wind	Pedestrian Survey	Allison Nott

The Stage 1 and 2 Archaeological Assessment employed strategies defined by the MCM in the 2011 *Standards and Guidelines for Consultant Archaeologists*. The Study Area consists of agricultural fields, a residential structure (house, driveway), and wooded areas. Photo documentation of the Stage 2 fieldwork conducted within the Study Area is provided in Image 1 to Image 18 and Map 7.

2.1.1 Field Methods

The Stage 1 background study identified that the property retained potential for the recovery of both Euro-Canadian and pre-contact Indigenous resources. Map 7 illustrates the Stage 2 Archaeological Assessment of the Study Area at 4275 Concession Road and indicates all field conditions encountered. Map 7 also provides a photographic key to images illustrated in Section 8.0. Image 1 to Image 18 illustrate the field conditions and activities at the time of the Stage 2 Archaeological Assessment.

The Study Area consisted of ploughed agricultural fields (19.71 ha), manicured lawns (0.05 ha), and small wooded areas (4.18 ha). There were portions of the Study Area that were not tested due to disturbance in the form of cobble lined gravel roads (Image 1 to Image 3), slopes greater than 20 degrees (Image 4 to Image 5), and permanently wet areas (Image 6 to Image 7). Approximately 1.68 ha of the Study Area was disturbed while approximately 1.71 ha was sloped, and 0.27 ha was permanently wet.

The manicured lawns surrounding the extant buildings on the property were subject to test pit survey at 5 m intervals (Image 8 to Image 11). Each test pit was excavated to at least 30 centimetres in diameter and dug a minimum of five centimetres into sterile subsoil; the stratigraphy of each test pit was inspected for evidence of cultural features. All soil from the test pits was screened through 6 mm hardware cloth to facilitate the recovery of any cultural material. Each test pit was backfilled upon completion. Furthermore, test pits were excavated within 1 m of buildings.

All positive test pits were mapped, recorded by their GPS coordinates, and collected. The soil can be generally described as medium brown sandy loam topsoil with reddish brown sandy loam topsoil. Test pit depth ranged between 30 cm and 50 cm in depth (Image 12 to Image 13).

During the test pit survey, one location, Location 1, was encountered. Upon encountering the initial artifact yielding (positive) test pit at each site, test pit survey continued on the 5 m grid to determine how many additional test pits were positive. Following the completion of the test pit survey at 5 m, sufficient archaeological resources were recovered to meet the criteria for making a recommendation to carry out a Stage 3 assessment as per Section 2.2 Standard 1c of the *Standards and Guidelines for Consultant Archaeologists* (2011). As such, no Stage 2 intensification was conducted in accordance with Section 2.1.3 Standard 1 of the *Standards and Guidelines for Consultant Archaeologists* (2011).

Approximately 4.18 ha \ of the Study Area was subject to shovel test pit survey at 5 m intervals.

The remainder of the Study Area consisting of agricultural fields was subject to pedestrian survey. These lands were ploughed and met to the appropriate weathering requirements according to *Section 2.1.1, Standard 3* of the MCM (2011). The pedestrian survey was conducted at a maximum interval of five metres across the entirety of the agricultural fields (Image 14 to Image 17). Surface visibility during the Stage 2 pedestrian survey was 80% or better.

During the pedestrian survey, three pre-contact Indigenous find spots (designated as Locations 2 through 4) were encountered. Upon encountering the initial artifact at each site, survey transects were reduced to 1 m over a 20 m radius around the findspot to determine whether it is an isolated find or part of a larger scatter (Supplementary

Documentation; Image 18). During the intensified survey of Location 2, a single additional pre-contact chipped stone lithic artifact was identified, and the intensified survey continued for an additional 20 m surrounding the find. All artifacts were mapped, recorded by their GPS coordinates, and collected (Supplementary Documentation).

3.0 RECORDS OF FINDS

The Stage 1 and 2 Archaeological Assessment resulted in the identification of one archaeological site (Location 1) during test pit survey and three findspots during pedestrian survey. Location 1 consists of a total of 264 artifacts, including 211 historical Euro-Canadian artifacts and 53 pieces of faunal material recovered from 33 positive test pits measuring 40 m N-S by 40 m E-W. Location 2 consists of two pieces of chipped lithic debitage. Location 3 consists of an isolated piece of chipped lithic debitage. Finally, Location 4 consists of an isolated biface.

All recovered artifacts have been washed, catalogued, analysed, and are stored in one banker's box at WSP's office in Mississauga, Ontario. A field log was maintained for the duration of the investigations detailing pertinent information and digital photographs were taken of the surveyed areas and topography. Photographs and GPS points were recorded using a Samsung Galaxy Tablet using ArcGIS Field Maps, and the World Geodetic System 84 Canadian Spatial Reference System was utilized to record all GPS readings to an accuracy of less than 4m. Table 4 provides an inventory of the documentary record generated in the field. A complete catalogue of the artifacts recovered during the Stage 1 and 2 Archaeological Assessment is provided in Appendix B and Appendix C and detailed site location information is provided within the Supplementary Documentation.

Table 4: Inventory of Documentary Record

Document Type	Current Location of Document	Additional Comments
Field Notes	WSP office in Mississauga	56 pages in original field book and stored to WSP server
Hand Drawn Maps	WSP office in Mississauga	one hand drawn map stored to WSP server
Maps Provided by Client	WSP office in Mississauga	one map stored to WSP server
Digital Photographs	WSP office in Mississauga	179 photographs stored to WSP server

3.1 Location 1

The Stage 2 Archaeological Assessment resulted in the recovery of a total of 264 historical Euro-Canadian artifacts from 33 test pits across an area approximately 40 m N-S by 40 m E-W in size. A summary of the recovered artifacts is presented in Table 5 and each artifact class is discussed in greater detail below. Image 19 to Image 23 illustrates a representative sample of artifacts recovered from Location 1.

Table 5: Stage 2 Artifact Summary for Location 1

Artifact Type	Artifact Class	Frequency	%
Historic Euro-Canadian	**Domestic**	**94**	35.6%
	[Domestic Ceramics]	*[45]*	17%
	[Domestic Glass]	*[49]*	18.6%
	Utilitarian	**44**	16.6%
	[Utilitarian Ceramics]	*[40]*	15.2%
	[Utilitarian Metal]	*[4]*	1.5%
	Structural	**69**	26.2%
	[Structural Metal]	*[34]*	12.9%

Artifact Type	Artifact Class	Frequency	%
	[Structural Glass]	*[21]*	8%
	[Structural Ceramics]	*[14]*	5.3%
	Furnishings	**3**	1.1%
	Personal	**1**	0.4%
Indeterminate	**Faunal Remains**	**53**	20.1
Total Stage 2 Artifacts		**264**	**100%**

4.0 ANALYSIS AND CONCLUSIONS

4.1.1 Historical Euro-Canadian Collections

4.1.1.1 Location 1

Location 1 was identified during Stage 2 test pit survey, within the southwestern portion of the Study Area, adjacent to the existing homestead, and yielded 264 historical Euro-Canadian artifacts over 33 findspots in an area measuring approximately 40m N-S by 40m E-W.

A total of 85 ceramic fragments were recovered, comprising 32.2% of the total artifact assemblage. The majority of the ceramic assemblage, 47.1% (n=40), is comprised of utilitarian wares. Refined white earthenware (RWE) comprised 38.8% (n=33) of the ceramic assemblage, while vitrified white earthenware (VWE) comprised of 11.8%, n=10. The remainder of the ceramic assemblage consists of stoneware (2.4%, n=2). Table 6 provides a breakdown of the ceramic assemblage by ware type, while Table 7 provides a breakdown of the ceramic assemblage by decoration type. A representative sample of the ceramic artifacts can be found in Image 19 to Image 20.

Table 6: Location 1 Recovered Ceramics by Ware type

Ceramic	Frequency	%
Coarse Red Earthenware	38	44.7
RWE	33	38.8
VWE	10	11.8
Coarse Yellow Earthenware	2	2.4
Stoneware	2	2.4
Total Stage 2 Ceramics	**85**	**100**

Table 7: Location 1 Ceramic Assemblage Decoration Types

Decoration Type	No. of Artifacts	Date	Reference
Plain	38	1830s and 1840s	Adams et al 1994; Miller 2000
Flow Transfer Printed	2	1844-66 with revival in 1890's with more vibrant colours	Kenyan 1985; Samford & Miller 2002
Stoneware, Rockingham glaze	2	Introduced in 1840, most popular in the 1850s and 1860s	Claney 2004
Majolica	1	1880s (peak popularity)	MACL 2015
Hand Painted	1	19th century	Samford 2014
Transfer Printed	1	1820-1840 (peak production)	Little 1969

White Earthenwares

Refined white earthenware (RWE) is slightly porous, white-pasted earthenware with a near colourless glaze first developed in 1805 and began to replace earlier near-white ceramics, such as creamware and pearlware, by the early 1830s. Its use continued throughout the 19th century, and is still used today, but its popularity began to decline by the 1840s with the introduction of vitrified white earthenware (VWE) (Adams et al 1994; Miller 2000). VWE is a variety of white bodied earthenware with a white to greyish-white fabric that is usually thick and heavy beneath a thick, hard clear glaze with a white, greyish or bluish tint. VWE was first developed in the 1840s but did not become popular until the second half of the 19th century. Its popularity continued into the 20th century, and it is still in use to some extent today (Wetherbee 1985). The ceramic assemblage comprises of RWE (n=33; 38.82%) and VWE (n=10; 11.76%) including fragments with transfer printed, painted, flow transfer printed, and majolica decoration.

During the 19th century, the technique of transfer printing designs to the underglaze surface of clay ceramics revolutionized the British ceramic industry. Manufacturers were now able to apply intricate patterns quickly and rather inexpensively, allowing for more uniformity between vessels (Samford 1997). Transfer print as a ceramic decoration began in 1750s and was developed by John Sadler and Guy Green of Liverpool. It was then adopted by Josiah Wedgwood who used it on his Creamware. Transfer printing is a process by which a pattern or design is etched onto a copper (or other metal) plate. The plate is then inked, and the pattern is "transferred" to a special tissue. The inked tissue is then laid onto a bisque fired ceramic item, glazed, and fired again (Samford 1997; MACL 2015). Prior to 1829, most transfer printed wares were blue, but after 1830, colours such as light blue, brown, black, sepia, green, red, and mulberry became more common (Collard 1967; Coysh and Henrywood 1982:10). From about 1850 to 1890 only the colours blue, black, and brown are common, while in the 1890s and later a wide variety of colours were in use (Samford & Miller 2002). At Location 1, one piece of transfer printed ceramic, decorated with brown floral motif (commonly produced 1832 to 1848) and two pieces of flow transfer print were recovered, both with blue indeterminate motif.

One piece of hand painted ceramic was recovered during the Stage 2 assessment. Late palette paints for white-bodied ceramics, including brighter shades of yellow, green, as well as red, became popular after the 1830s (Miller 1991). The piece of painted ceramic was decorated with a pale green, abstract floral motif.

The sherd that is hand-painted features a design that is accented with pale green and yellow paints. This sherd may be an example of Victorian majolica. Victorian majolica displays brilliantly coloured glazes and elaborate moulding. It was initially modelled after Italian Renaissance tin-glazed ceramics and was introduced in Great Britain at London’s 1851 Great Exhibition, though it did not see great popularity in North America until after its initial appearance at the 1876 Centennial Exposition in Philadelphia, reaching peak popularity there in the 1880s (MACL 2015b). As it became more popular, potters struggled to keep up and quality declined, leading to a decline in its popularity by the turn of the 20th century. Production of Victorian majolica ceased in North America by World War I (MACL 2015b).

Utilitarian Wares

Coarse earthenware was manufactured throughout the late 18th and 19th centuries and was the most common utilitarian ware during the first half of the 19th century and continues to be produced today (Adams et al. 1994). This ware type is generally somewhat porous and hard, and orange to red or yellow in colour. As it is quite porous, glaze is needed for the vessel to hold liquid contents (Cobb and Waters 2019). Utilitarian wares are bulkier items, typically used for food storage or used in the kitchen for preparing food, rather than in the dining

room for food or beverage service. Stoneware is a hard, heavy, grey to light brown ceramic that was commonly used for utilitarian purposes. It is fired at a higher temperature than earthenware and has a less porous body.

Utilitarian ware types comprise 47.1% (n=40) of the ceramic assemblage, with 38 fragments of coarse red earthenware (CRE), 2 pieces of coarse yellow earthenware (CYE), and 2 pieces of stoneware with Rockingham glaze. Twenty-nine pieces of coarse earthenware had glazing and 9 pieces were undecorated/exfoliated. The 2 pieces of CYE were glazed with a light greyish green glaze.

The two pieces of stoneware were decorated with Rockingham glaze. This type of ware is a hard compact yellow coloured coarse earthenware with a transparent lead glaze covered with a brown manganese glaze creating a mottled brown and yellow appearance. Rockingham ware was first produced in 1840 but was most popular by the 1850s and 1860s in the wake of the rococo revival (Claney 2004).

4.1.1.1.1 Domestic Glass

In total, 49 pieces of domestic glass were recovered, accounting for 18.6% of the overall artifact assemblage. Of these, 44 pieces are body fragments, 2 are neck/finish fragments, 2 are mason jars, and one is a complete bottle.

Colours of beverage bottle glass recovered include 29 colourless fragments, with the balance of the assemblage including pale aqua (n=19), pale green (n=1), and olive/black glass (n=1) fragments. Bottle glass colour is extremely limited with regards to providing a temporal sequence for a site; however, the most common use of clear/colourless glass seems to be post-1870. Bottles of pure colourless or ‘clear’ glass were relatively uncommon prior to the 1870s, as decolouring agents put into the glass recipes often became straw coloured or pink/purple coloured when exposed to ultraviolet light and becomes more common after the widespread use of automatic bottle machines in the mid to late 1910s (Lindsey 2019; Kendrick 1968; Toulouse 1969; Fike 1987). As techniques and ingredients were perfected and became widely adopted, pure colourless glass became quite common after the widespread use of the automatic bottle machines in the first decade of the 20th century (Kenyon 1980; Toulouse 1969; Fike 1987). Much of the recovered bottle glass is clear/colourless (n=29).

The recovered bottle glass assemblage includes one complete colourless hexagonal/teardrop cosmetic bottle with a screw top finish. The bottle has been partially melted though the bottle is likely a two-part mould and dated to the 20th century. There were two pale aqua mason jar fragments recovered during the Stage 2 survey as well as two incomplete finishes. The first finish is an oil finish, which was commonly used on a variety of different bottle types from the 1830s until the 1920s (most popular between 1850 and 1920) until it was replaced by various external thread finishes (Lindsay 2019). The second finish is a patent or extract finish, which was a very common finish on extract and patent and proprietary medicine bottles made from about 1850 to well after the turn of the century (Linsday 2019). A sample of the bottles recovered during the Stage 2 test pit survey can be viewed in Image 21.

4.1.1.1.2 Structural Artifacts

The structural class of artifacts is comprised of building components, including window glass and nails.

Window Glass

A total of 21 shards of windowpane glass were recovered, representing 8% of the overall artifact assemblage. Before 1845, there was a tax on window glass based on weight, which resulted in glass thickness generally averaging 1.1 to 1.4 millimetres (mm) in order to reduce the amount of tax paid. When the tax was lifted in 1845, average window glass thickness increased to between 1.7 and 2.0 mm (Adams *et al.* 1995). Of the recovered

pieces of window glass, 38.1% (n=8) measure less than 1.6 mm in thickness and all were manufactured on pale aqua glass.

Nails

The structural artifact class contains 34 nails, including 22 machine cut nails, 5 wire drawn nails, one indeterminate nail, and six pieces of miscellaneous metal hardware (i.e., fence staples, wires, strapping). Machine cut nails were available as early as 1820 in their transitional form, and the use of wrought nails continued for a longer period in rural settings. Machine cut nails continued in use well beyond the development of later wire drawn varieties with considerable overlap and simultaneous use of both varieties. In many rural settings, machine cut nails remained the predominant nail type until the 1890s, when wire drawn nails largely replaced cut nails (Nelson 1968; Phillips 1994). Wire drawn nails became common in the 1860s and became the predominant nail type in the building industry in 1890 (Vincent 1993). A sample of the nails recovered during the Stage 2 assessment can be viewed in Image 22.

Brick

Brick comprises 5.3% (n=14) of the overall artifact assemblage and is represented entirely by fragments of red brick. These fragments are heavily exfoliated and damaged.

4.1.1.1.3 Furnishings

Two shards of chimney glass were recovered during the Stage 2 test pit survey. One piece was manufactured on pale aqua glass and the other was manufactured on colourless glass. Both were relatively thin fragments (less than 1 mm in thickness). Oil lamps and candles were the primary sources of lighting in rural areas well into the first half of the 20th century (Woodhead, Sullivan, and Gusset 1984)

4.1.1.1.4 Faunal Elements

Fifty-three faunal fragments were recovered from Location 1, including 47 mammalian bones, 3 avian bones, and 2 indeterminate mammalian teeth, and one sheep tooth. Three mammalian bones showed evidence of cutting, while two fragments were calcined, and 2 fragments had been charred. A sample of faunal elements can be viewed in Image 23.

4.1.2 Conclusions

Location 1 consists of 211 historic Euro-Canadian artifacts and 53 faunal elements. The artifact assemblage includes structural material and domestic household items that are representative of a mid-late 19th century historical homestead. Most of the recovered nails (n=23) were machine cut (1830-1900s), supporting a mid-late 19th century date of occupation. Diagnostic ceramics recovered included RWE with most decorative styles dating to between 1820 and present-day and VWE with decorations dated from 1870 to present-day. Although these artifacts support a date of occupation ranging from as early as the 1830s to as late as the early 1900s, most of the diagnostic ceramic decoration support a date of occupation between 1850-1880. Additional diagnostic items supporting a mid-late 19th century date of occupation includes bottle glass finishes and hand wrought nails. The artifact assemblage supports the historical landownership record of John Smith occupying the property after 1856 and is possibly associated with his occupation of the land.

Location 1's artifact assemblage indicates that 80% or more of the site's occupation predates 1900 and is considered to have further cultural heritage value or interest according to the MCM (2021) *19th Century Rural Historical Farmstead Sites Standards for Consultant Archaeologists*. A Stage 3 archaeological assessment

following Section 3.2.2 Standards 1-12 of *19th Century Rural Historical Farmstead Sites Standards for Consultant Archaeologists* is recommended.

4.1.3 Pre-Contact Indigenous Collection

4.1.3.1 Location 2

Location 2 was identified during Stage 2 pedestrian survey and consists of two pieces of chipped lithic debitage. Chipped lithic debitage is the waste product from the production of lithic tools and is the most recovered artifact on pre-contact Indigenous archaeological sites in southern Ontario. One piece of chipped lithic debitage was a biface thinning flake manufactured of Onondaga chert and the other piece was a flake fragment of Haldimand chert. Image 24 illustrates the artifacts recovered from Location 2.

4.1.3.2 Location 3

Location 3 was identified during Stage 2 pedestrian survey and consists of a single isolated piece of chipped lithic debitage. Chipped lithic debitage is the waste product from the production of lithic tools and is the most recovered artifact on pre-contact Indigenous archaeological sites in southern Ontario. The artifact was manufactured of Ancaster chert and is a flake fragment. Image 25 illustrates the artifact recovered from Location 3.

4.1.3.3 Location 4

Location 4 was identified during Stage 2 pedestrian survey and consists of a single isolated biface. The biface was manufactured of Onondaga chert and measures approximately 35.42 mm by 30.51 mm by 6.04 mm, though it is broken, and the measurements are incomplete. Image 26 illustrates the artifact recovered from Location 4.

4.1.4 Conclusions

Location 2, Location 3, and Location 4 do not meet the criteria within *Section 2.2, Standard 1* of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011) and are not considered to have further cultural heritage value or interest; therefore, a Stage 3 Archaeological Assessment is not recommended.

5.0 RECOMMENDATIONS

The Stage 1 and 2 Archaeological Assessment resulted in the identification of four archaeological sites within the Study Area. Based on the results of the Stage 1 and 2 Archaeological Assessment documented therein, the following recommendations are presented:

1) Location 1's artifact assemblage indicates that 80% or more of the site's occupation predates 1900 and is considered to have further cultural heritage value or interest according to the MCM (2021) *19th Century Rural Historical Farmstead Sites Standards for Consultant Archaeologists*. A Stage 3 Archaeological Assessment following Section 3.2.2 Standards 1-12 of *19th Century Rural Historical Farmstead Sites Standards for Consultant Archaeologists* is recommended:

    a. Following the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), Table 3.1, Standards 3-4, begin test unit excavation by excavating the 1 m^2 test units in a 10 m grid across the site.

    b. Place and excavate additional test units amounting to a minimum of 40% of the grid unit total, focusing on areas of interest within the site extent. The Stage 3 Archaeological Assessment should be conducted to define the site extent, gather a representative sample of artifacts, and aid in the determination of a Stage 4 mitigation strategy, if required.

2) As per *Section 2.2, Standard 1* of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), Locations 2, 3, and 4 are not considered to have further cultural heritage value or interest, and no further assessment is recommended.

3) The remainder of the Study Area is considered to be sufficiently documented, and no further assessment is recommended.

The MCM is requested to review and provide a letter indicating their satisfaction with the results and recommendations presented herein, with regard to the 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences, and to enter this report into the Ontario Public Register of Archaeological Reports.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Citizenship and Multiculturalism, as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection, and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Citizenship and Multiculturalism, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest , and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

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

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ontario Ministry of Consumer Services is also immediately notified.

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8.0 IMAGES

8.1 Fieldwork

Image 1: Laneway and rock piles separating the fields, facing southwest. 13 July 2022.

Image 2: Cobble road with rock and earthen berms on either side, facing northwest. 13 July 2022.

Image 3: Sloped area with example of gravel roadway disturbance encountered on site, facing southwest. 13 July 2022.

Image 4: Example of slope encountered on property, facing east. 13 July 2022.

Image 5: Sloped area, facing south. 21 July 2022.

Image 6: Low-lying permanently wet area, facing north. 15 July 2022.

Image 7: Low-lying wet area (cattle wallow), facing north. 21 July 2022.

Image 8: Test pit survey at 5 m intervals, facing northwest. 12 July 2022.

Image 9: Test pitting at 5 m intervals, facing west. 13 July 2022.

Image 10: Test pitting at 5 m intervals, facing southeast. 13 July 2022.

Image 11: Test pitting at 5 m intervals, facing northeast. 21 July 2022.

Image 12: Typical test pit stratigraphy, facing down (north). 12 July 2022.

Image 13: Typical test pit stratigraphy found in Study Area, facing north. 21 July 2022.

Image 14: Pedestrian survey at 5 m intervals, facing southwest. 10 May 2023.

Image 15: Pedestrian survey at 5 m intervals, facing northwest. 11 May 2023.

Image 16: Pedestrian survey at 5 m intervals, facing north. 3 July 2023.

Image 17: Pedestrian survey at 5 m intervals, facing south. 23 November 2023.

Image 18: Intensification complete at 1 m intervals, facing northwest. 11 May 2023.

8.2 Artifact Plates

Image 19: Sample of historic Euro-Canadian ceramics: RWE (L-R, top row: Cat#21, 22, 36, 72) and VWE (L-R, bottom row: Cat#7, 39, 61, 109).

Image 20: Sample of utilitarian ceramics (L-R: Cat#40, 74, 106).

Image 21: Sample of bottle glass and bottle finishes recovered (L-R, top row: Cat#15, 28, 137; bottom row: Cat#87, 131, 155).

Image 22: Sample of hand wrought nails (L-R: Cat#38, 94, 152) and machine cut nails (Cat#08, 151) recovered from Location 1.

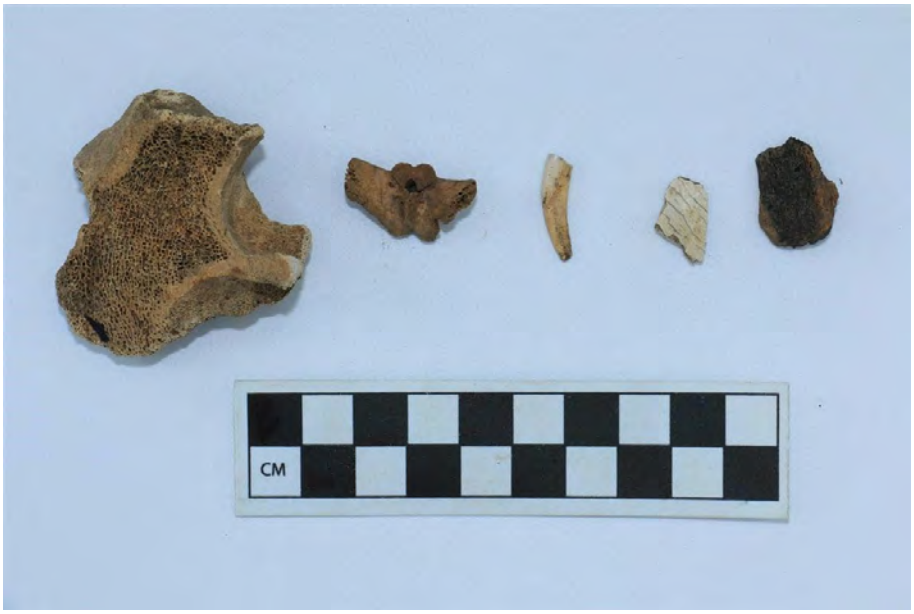


Image 23: Sample of faunal elements recovered from Location 1 (L-R: Cat#9, 33, 65, 77, 90).

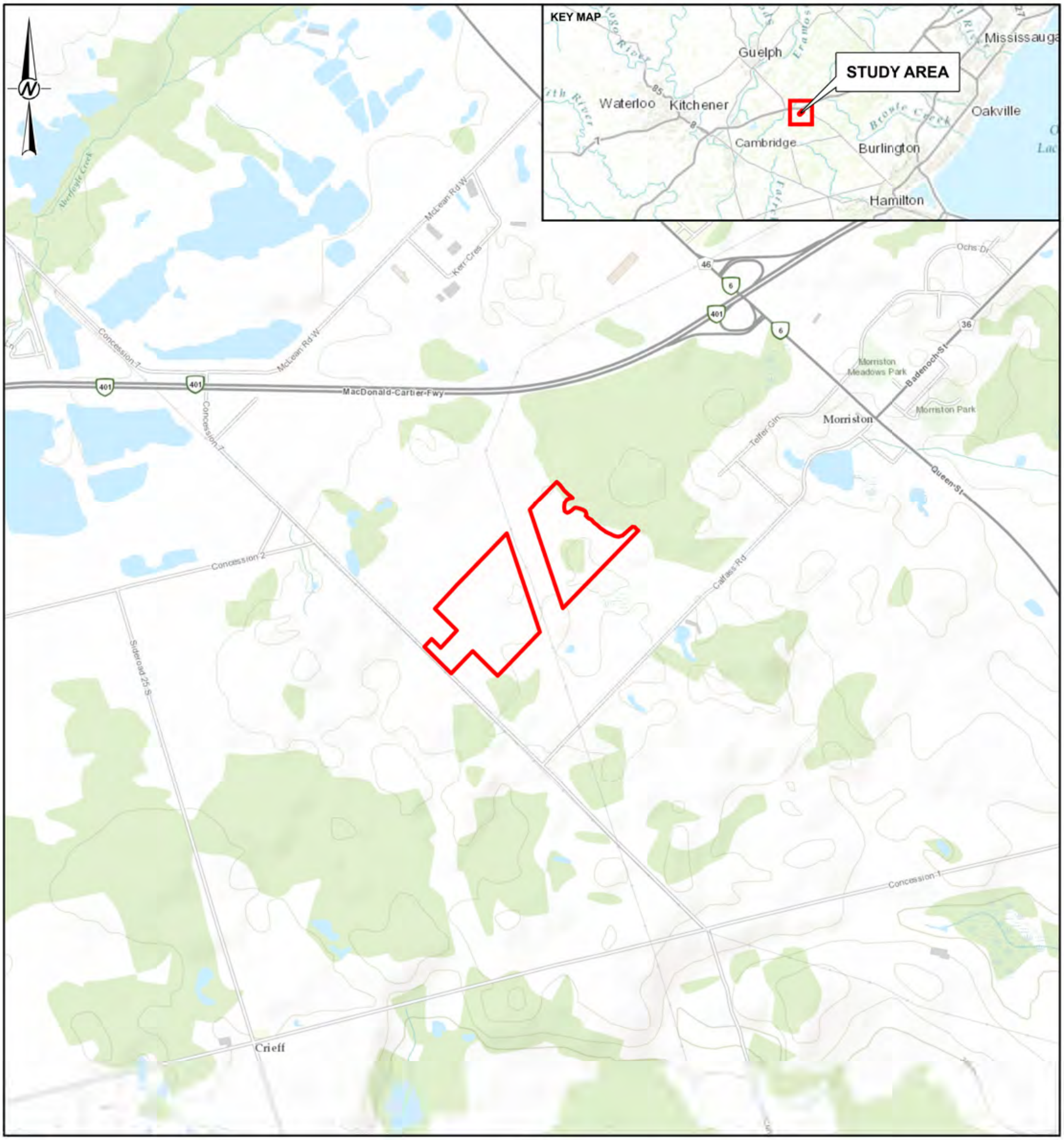
Image 24: Chipped lithic debitage recovered from Location 2 (L-R: Cat#1, 2).

Image 25: Isolated piece of chipped lithic debitage recovered from Location 3 (Cat#1).

Image 26: Isolated biface recovered from Location 4 (Cat#1).

9.0 MAPS

All maps on succeeding pages.



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CLIENT
CBM AGGREGATES, A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT
SAFARIK PIT

TITLE
PROJECT LOCATION

CONSULTANT

YYYY-MM-DD	2025-07-15
DESIGNED	SO
PREPARED	AP
REVIEWED	RF
APPROVED	DE

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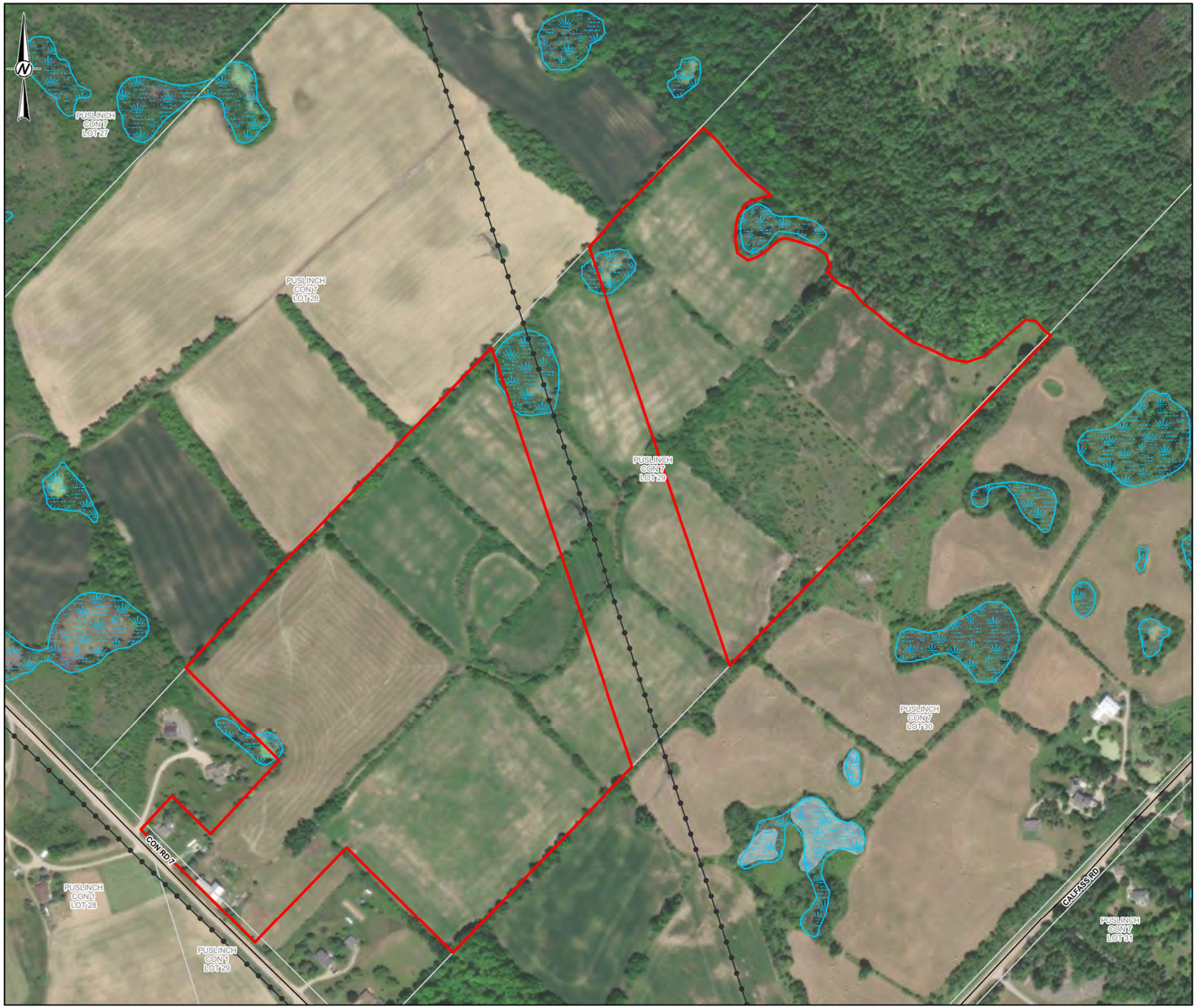

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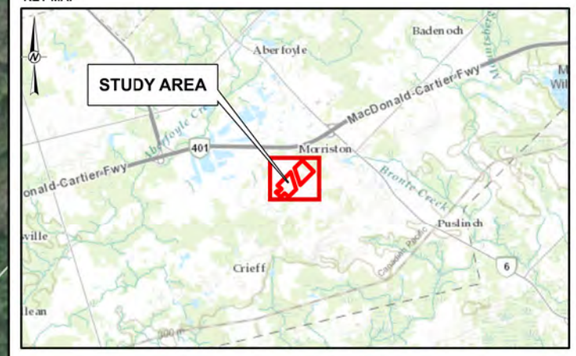

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PROJECT
SAFARIK PIT

TITLE
STUDY AREA

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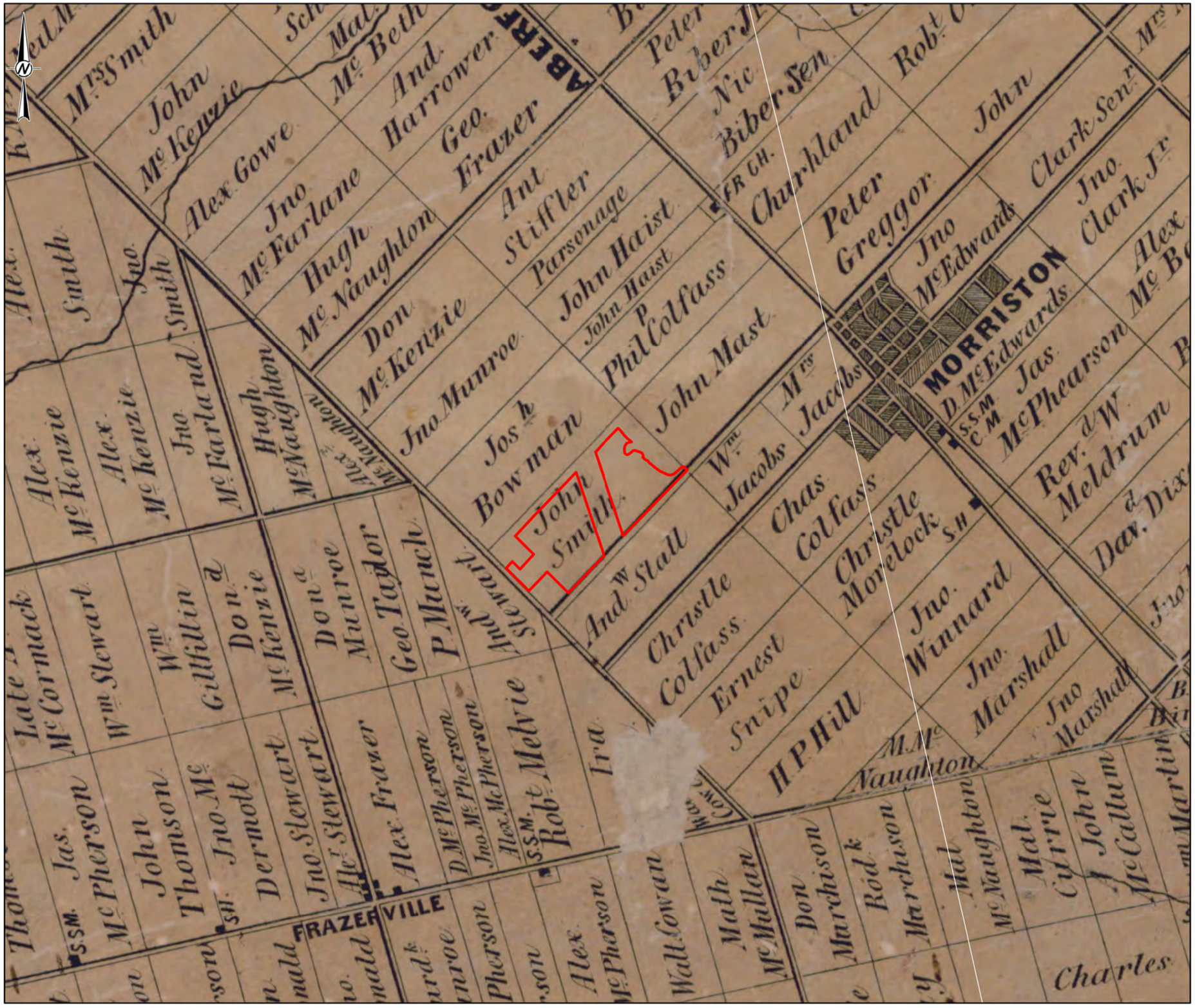

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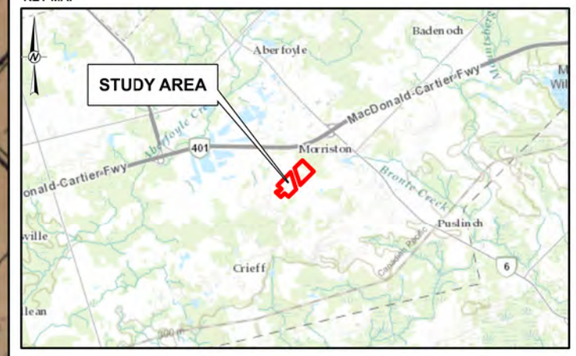

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PROJECT

SAFARIK PIT

TITLE

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CONSULTANT

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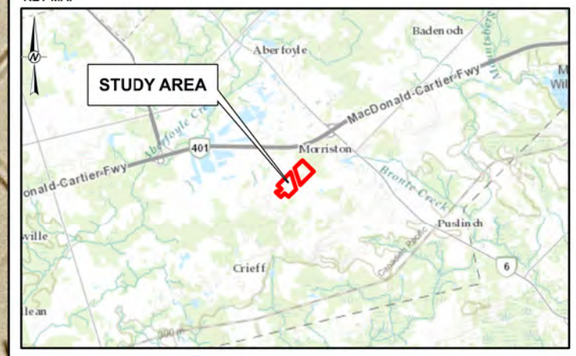

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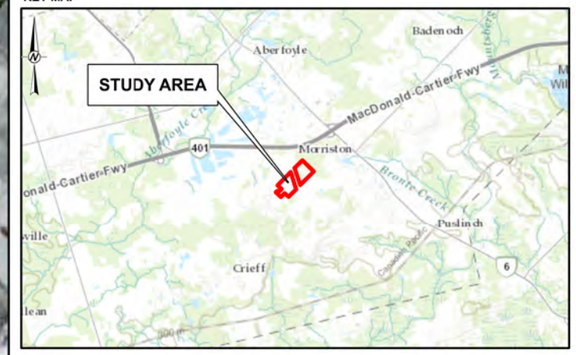

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4. LICENSE AND EXTRACTION PROVIDED BY MHBC MARCH 2025

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PROJECT
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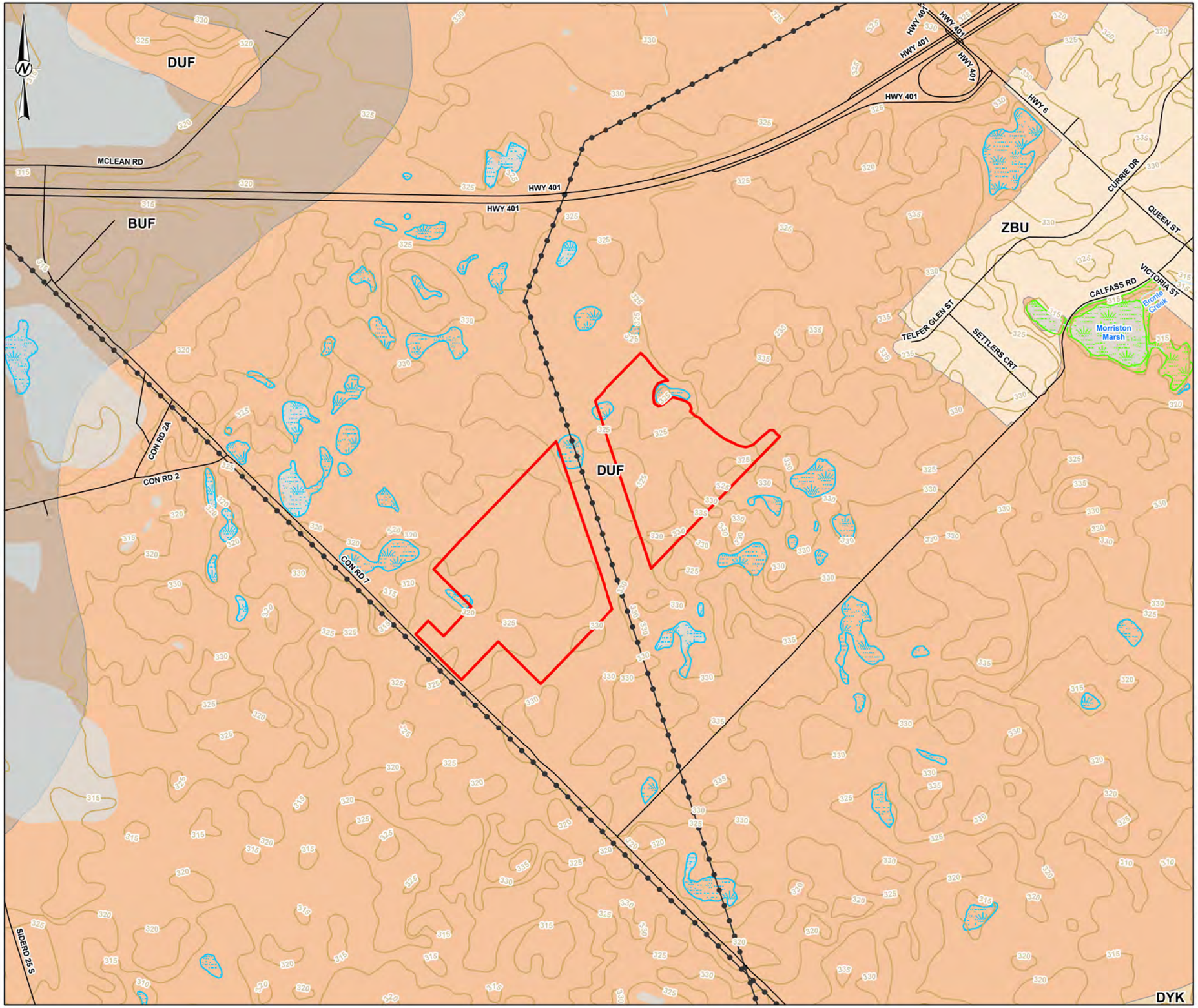

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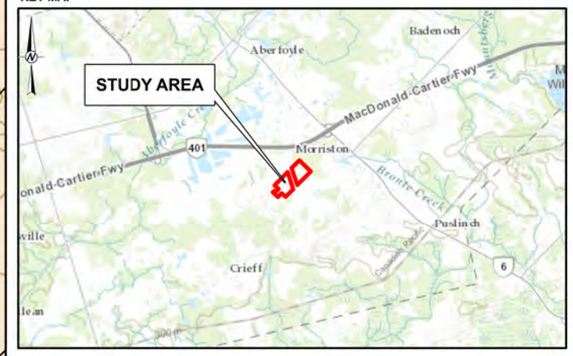

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- WATERCOURSE

WETLAND SIGNIFICANCE

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- EVALUATED WETLAND (NO SIGNIFICANCE)
- WATERBODY

SOIL SURVEY COMPLEX

- BUF,BURFORD LOAM
- DUF,DUMFRIES SANDY LOAM
- DYK,DONNYBROOK SANDY LOAM
- ZBU,BUILT UP AREA
- LICENCE BOUNDARY

0 100 200 400

1:10,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. BASE MAP: CITY OF HAMILTON, TOWN OF MILTON, PROVINCE OF ONTARIO, ONTARIO MNR, ESRI CANADA, ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS, AAFC, NRCAN
3. COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 17N
4. LICENSE AND EXTRACTION PROVIDED BY MHBC MARCH 2025

CLIENT

CBM AGGREGATES, A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT

SAFARIK PIT

TITLE

SOILS AND ELEVATION WITHIN THE STUDY AREA

CONSULTANT

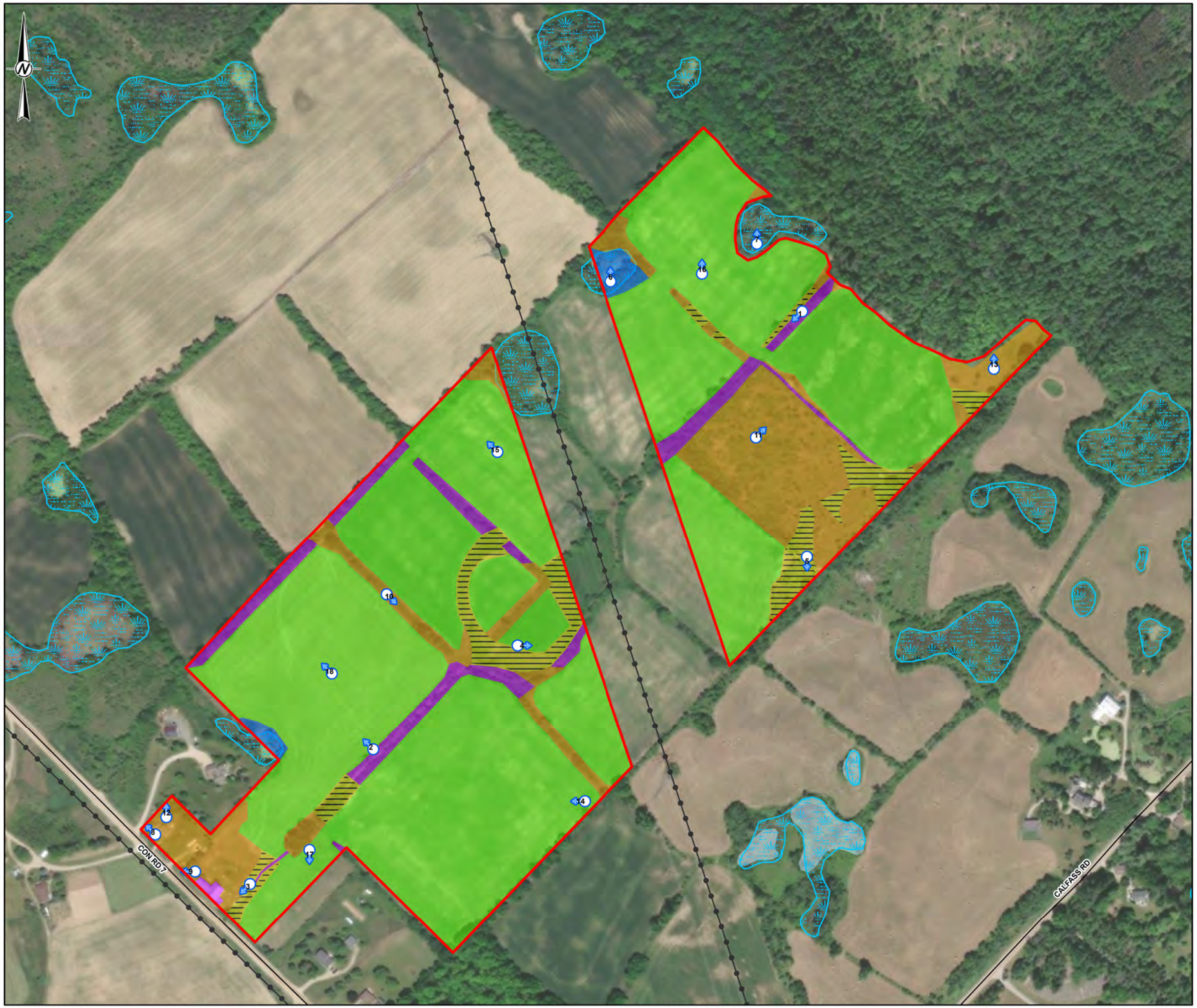
wsp

YYYY-MM-DD	2025-07-15
DESIGNED	SO
PREPARED	AP
REVIEWED	RF
APPROVED	DE

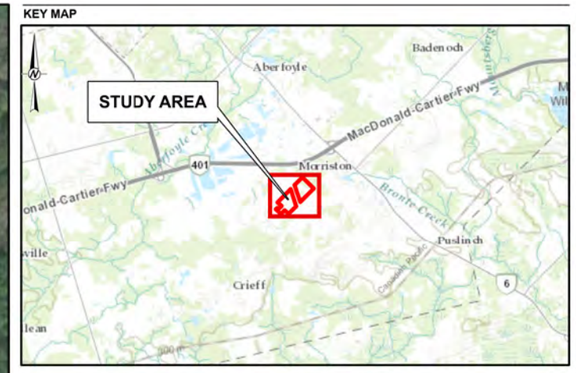
PROJECT NO.	CONTROL	REV	MAP
21476582	0003	0	6

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

PATH: S:\Clients\Votorantim_Cimentos\Aleabauer_Priv\69_PROJ\21476582_Safarik_Pit_Expansion\40_PROD\0003_Arch_St_1_21476582-0003-HA-0000.aprx, PRINTED ON: AT 2:44:33 PM



KEY MAP



SCALE: 1:150,000

LEGEND

- PHOTO LOCATION AND DIRECTION
- ROADWAY
- HYDRO LINE

WETLAND SIGNIFICANCE

- UNEVALUATED WETLAND
- WATERBODY
- LICENCE BOUNDARY
- TEST PIT SURVEY AT 5M
- PEDESTRIAN SURVEY AT 5M
- DISTURBED
- SLOPE
- PERMANENTLY WET

0 50 100 200

1:4,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. BASE MAP: CITY OF HAMILTON, TOWN OF MILTON, PROVINCE OF ONTARIO, ONTARIO MNR, ESRI CANADA, ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS, AAFC, NRCAN, TOWN OF OAKVILLE, MAXAR
3. COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 17N
4. LICENSE AND EXTRACTION PROVIDED BY MHBC MARCH 2025

CLIENT

CBM AGGREGATES, A DIVISION OF ST. MARYS CEMENT INC. (CANADA)

PROJECT

SAFARIK PIT

TITLE

STAGE 1 AND 2 ASSESSMENT RESULTS AND PHOTO LOCATIONS

CONSULTANT

wsp

YYYY-MM-DD	2025-07-15
DESIGNED	SO
PREPARED	AP
REVIEWED	RF
APPROVED	DE

PROJECT NO.	CONTROL	REV.	MAP
21476582	0003	0	7

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

PATH: S:\Clients\Votorantim_CimentosNeubauer, PM\99_PROJ\21476582_Safarik_Pit_Expansion\40_PROD\0003_Arch_St_1_21214765820003-HA-0000.aprx, PRINTED ON: AT: 2:43:08 PM

10.0 CLOSURE

WSP Canada Inc.

[redacted]

Alex Mullan, MA
Archaeology Team Lead

[redacted]

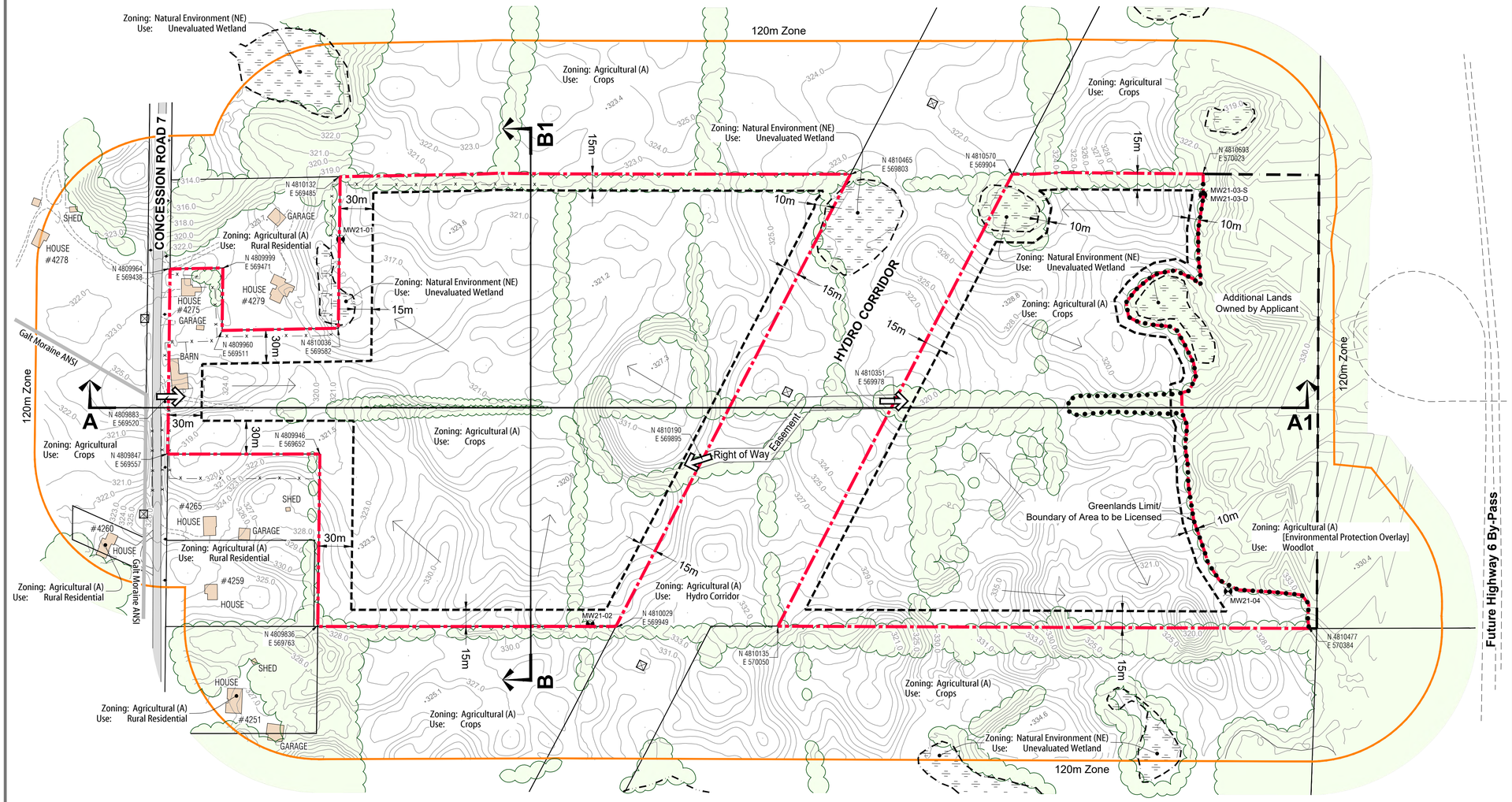
Michael Teal, MA
Principal Archaeologist, Technical Lead

AM/MT/ld

c:\users\cald042350\downloads\p468-0103-2022_25sep2025_re.docx

APPENDIX A

Resource Extraction Map



Notes

A. General

1. This site plan is prepared under the Aggregate Resources Act (ARA) for a Class A licence for a pit below the ground water table and follows the Aggregate Resources of Ontario: Site Plan Standards August 2020, specifically Existing Features for all sites (Numbers 1-26 in the standards).
2. Area Calculations:
   Licence Area: 27.7 hectares (68.4 acres)
   Limit of Extraction: 21.5 hectares (53.1 acres)
3. All measurements shown are in metres unless specified otherwise.

B. References

1. Topographic information compiled by GeoOptic (a division of Aeon Egmond Ltd.). Data from GeoOptic was produced from aerial photography that was flown on April 25, 2023. Mapping is produced in real world scale and coordinates (NAD83 UTM Zone 17N). Contour interval is 1m. All elevations are geodetic (HT2 2010v70).
2. Plan 61R-1622 prepared by Ontario Hydro (May 30, 1977).
3. Parcel Fabric from Wellington County GIS/Open data.
4. The subject lands are zoned Agricultural (A) and Natural Environment (NE) in the Township of Puslinch Comprehensive Zoning By-law No. 023-18 [Consolidation Date: May 2021].
5. Grand River Conservation Authority (GRCA) for wetland boundaries.
6. Land use information compiled from 2023 imagery, site visits and client input.

C. Drainage

1. Surface drainage on and within 120 metres of the licence boundary is by overland flow in the directions shown by arrows on the plan view or by infiltration.

D. Groundwater

1. Based on the available groundwater elevation data, the maximum predicted water table on the site is 306.85 masl in the western portion of the site (as measured at MW21-01) to 308.19 masl in the east portion of the site (as measured at MW21-03-S).

E. Site Access and Fencing

1. There is an existing field access to the site from Concession Road 7 in the location shown on the plan view. Also, a right of way easement exists across the hydro corridor for access to the easternmost parcel.
2. Post and wire fencing (unless noted otherwise) exists in the locations shown on the plan view.

F. Aggregate Related Site Features

1. There are no existing aggregate operations or features on-site such as processing areas with stationary or portable equipment, stockpiles, recyclable materials, scrap, haul roads, fuel storage, berms or excavation faces.

G. Significant Natural Features

1. On-site: TBD
2. Off-site within 120m:

I. Human-made Features

1. On-site:
2. Off-site within 120m:

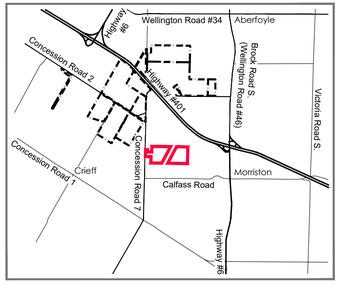
H. Cross Sections

1. As shown on this page. Detailed sections are shown on page 5 of 5.
2. Cross section locations are identified on the plan view for each drawing.

I. Report References

1. Noise: "Noise Impact Assessment, Neubauer Pit Expansion" 2025 (Source: WSP)
2. Natural Environment: "Natural Environment Report, Proposed Neubauer Pit Expansion" 2025 (Source: WSP)
3. Hydrogeology: "Water Report Level 1/2 Neubauer Pit Expansion" 2025 (Source: WSP)
4. Maximum Predicted Water Table Report: "Maximum Predicted Water Table Report" 2025 (Source: WSP)
5. Archaeology: (Source: WSP)
6. Traffic: (Source: TYLin)
7. Agricultural Review:
8. Dust: (Source: WSP)

Key Plan



Subject Lands

Additional Lands Licensed by Applicant

north

SCALE
0 1.0 2.0 3.0
KILOMETRES

Legal Description

PART OF LOT 29
CONCESSION 7
(Geographic Township of Puslinch)
TOWNSHIP OF PUSLINCH
COUNTY OF WELLINGTON

Legend

- Boundary of Area to be Licensed
- Additional Lands Owned by Applicant
- Existing Fence — POST & WIRE FENCE UNLESS OTHERWISE NOTED
- Public Road - Paved
- Driveway - Gravel
- Driveway - Paved
- Existing Access
- Hydro Pole
- Hydro Tower
- 120m Zone
- Unevaluated Wetland — GRCA OPEN DATA
- Provincially Significant Wetland — GRCA OPEN DATA
- MW21-04 Groundwater Monitor — WSP 2023
- Significant Woodland — WSP 2025
- Limit of Extraction — ALL SETBACKS ARE DRAWN TO SCALE AND SHOW LABELLED DISTANCES
- 304.0 Contour with Elevation — METRES ABOVE SEA LEVEL
- 328.8 Existing Spot Height Elevation — METRES ABOVE SEA LEVEL
- Building/Structure — LOCATION AND USE FOR BUILDINGS ON-SITE AND WITHIN 120m ARE SHOWN
- Existing Vegetation
- Direction of Surface Drainage (IF ANY)
- Parcel Fabric — LOCATION APPROXIMATE
- A1 Cross Sections — SEE PAGE 5 OF 5 FOR EXISTING AND REHABILITATED CROSS SECTIONS

Site Plan Amendments

No.	Date	Description	By

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
200-540 BINGEMANS CENTRE DR, KITCHENER, ON. N2B 3X9 | P: 519.576.3650 | WWW.MHBCPLAN.COM

MNR Approval Stamp

Stamp

DRAFT

north

Applicant

VOTORANTIM cimentos cbm

55 Industrial St. 4th Floor Toronto, Ontario M4G 3W9
Telephone: (416) 696-4411

Applicant's Signature

DRAFT

David Hanratty
Votorantim Cimentos - North American Aggregates
Director, Land & Resources

Project

Safarik Pit

ARA Licence Reference No.

Pre-approval review:

For client review - March 2025

Plan Scale **1:2,000 (Arch D)**

SCALE
0 25 50 100
METRES

Plot Scale 1:2.0 [1mm = 2.0 units] MODEL

Drawn By D.G.S.

Checked By N.D.

File No. Y321AR

File Name

EXISTING FEATURES PLAN

Drawing No.

1 OF 5

K:\Y321AR-CBM-Safarik Pit\A\CBM Safarik Pit Exfeplan 1of5 March2025.dwg

APPENDIX B

Location 1 Complete Artifact Catalogue

APPENDIX B
Location 1 Complete Artifact Catalogue

FUNCTION 1	FUNCTION 2	OBJECT	FRAGMENT	ATTRIBUTE 1	ATTRIBUTE 2	MANUFACTURE	ALTERATION	LESS THAN 1.6mm	# OF ARTIFACTS	# OF OBJECTS	MAKER'S MARK	TAG CODE	NOTE
structural	hardware	nail: common	fragment	head and partial shank		machine cut			1	1		NCU	
utilitarian	domestic	hollowware	body	glazed	1 pale grey glazed; 1 clear glazed				2	2		CRE	
utilitarian	domestic	hollowware	body	unglazed					2	2		CRE	
utilitarian	domestic	hollowware	body	glazed	brown glazed				2	2		CRE	
		bone	fragment	large mammal	indeterminate species				2	2		BAF	
utilitarian	domestic	hollowware	body	exfoliated					3	3		CRE	
food/beverage	tableware	flatware	base	undecorated		ironstone			2	1		VWE	pieces mend
structural	hardware	nail: common	fragment	head and partial shank		machine cut			2	2		NCU	
		bone	fragment	large mammal	mixed fragments		1 cut		5	5		BAF	
		tooth	fragment	large mammal	indeterminate species				2	2		BAF	
utilitarian	storage	metal can	fragment	1 rim; 1 body					2	2		CAN	
structural	hardware	fence staple	complete						1	1		MMH	
structural	hardware	fence wire	fragment						1	1		MMH	
structural	building materials	window pane	fragment		pale aqua				3	3		GWI	
food/beverage	beverage container	bottle: paneled	body	embossed lettering	pale aqua	partial indeterminate lettering			3	1		GBO	
food/beverage	beverage container	bottle: paneled	body		pale aqua				5	1		GBO	
structural	building materials	brick	fragment		red				1	1		BRI	
furnishings	lighting	chimney lamp	body		pale aqua	T: 0.75 mm			2	2		GCL	
utilitarian	domestic	hollowware	body	glazed	brown glazed				1	1		CRE	
structural	hardware	nail: common	complete			wrought			1	1		NWR	
food/beverage	tableware	flatware	body	undecorated					1	1		RWE	
food/beverage	tableware	hollowware	base	undecorated					1	1		RWE	
food/beverage	tableware	flatware	body	undecorated					2	2		VWE	very fragmentary
food/beverage	beverage container	bottle: cylindrical	body		pale aqua				2	2		GBO	
structural	building materials	window pane	fragment		pale aqua			1	2	2		GWI	
utilitarian	domestic	hollowware	body	glazed	clear glazed				2	2		CRE	
food/beverage	tableware	flatware	base	undecorated					1	1		VWE	
utilitarian	food storage	mason jar	finish	screw top finish	pale aqua				1	1		JAR	
utilitarian	domestic	hollowware	body	glazed	brown glazed				1	1		CRE	
structural	building materials	brick	fragment		red				1	1		BRI	
utilitarian	domestic	indeterminate	fragment	exfoliated					2	2		CRE	hard to tell if these are extremely exfoliated brick or CRE vessel fragments
structural	building materials	window pane	fragment		pale aqua			2	3	3		GWI	
		bone	fragment	vertebrae	medium sized avian				1	1		BAF	
		bone	fragment	long bone	small to medium mammal				2	2		BAF	
food/beverage	beverage container	bottle: cylindrical	body		pale aqua				2	2		GBO	
food/beverage	tableware	indeterminate	body	majolica	bright green and yellow				1	1		MAJ	very fragmentary
structural	hardware	nail: common	fragment			machine cut			2	2		NCU	
structural	hardware	nail: common	fragment			wrought			1	1		NWR	
food/beverage	tableware	flatware	base	undecorated		semi-porcelain			1	1		VWE	
food/beverage	tableware	hollowware	body	moulded	Rockingham glaze; moulded partial lettering [REBEK...]				2	1		SMO	pieces mend
food/beverage	beverage container	bottle: cylindrical	body		colourless				4	4		GBO	
food/beverage	beverage container	bottle: indeterminate	body	square or rectangular	colourless				1	1		GBO	
structural	building materials	brick	fragment		red				1	1		BRI	

APPENDIX B
Location 1 Complete Artifact Catalogue

FUNCTION 1	FUNCTION 2	OBJECT	FRAGMENT	ATTRIBUTE 1	ATTRIBUTE 2	MANUFACTURE	ALTERATION	LESS THAN 1.6mm	# OF ARTIFACTS	# OF OBJECTS	MAKER'S MARK	TAG CODE	NOTE
food/beverage	tableware	flatware	body	undecorated					5	5		RWE	
utilitarian	domestic	hollowware	body	glazed	clear glazed				1	1		CRE	
utilitarian	storage	metal can	body						2	2		CAN	
structural	hardware	nail: common	fragment	shank only		machine cut			1	1		NCU	
structural	building materials	window pane	fragment		pale aqua			2	5	5		GWI	
food/beverage	tableware	flatware	body	undecorated					1	1		RWE	
utilitarian	domestic	hollowware	body	glazed	clear glazed				1	1		CRE	
		bone	fragment	long bone	small avian				2	2		BAF	
structural	building materials	brick	fragment		red				1	1		BRI	
food/beverage	tableware	hollowware	base/body	undecorated					1	1		RWE	
food/beverage	tableware	indeterminate	body	undecorated					5	5		RWE	very fragmentary
food/beverage	tableware	indeterminate	base	undecorated			thermally altered		1	1		VWE	increased vitrification may be due to thermal alteration
food/beverage	beverage container	bottle: cylindrical	body		colourless				5	5		GBO	
food/beverage	indeterminate container	indeterminate	indeterminate		colourless				1	1		GBO	very fragmentary
structural	building materials	window pane	fragment		pale aqua			2	2	2		GWI	
		bone	fragment	possibly long bone	medium to large mammal				1	1		BAF	
		bone	fragment	long bone	large mammal		saw cut; rodent gnawing		1	1		BAF	
utilitarian	domestic	hollowware	body	glazed	brown glazed				1	1		CRE	
		bone	fragment	1 long bone; 1 indeterminate	medium to large mammal		1 cut		2	2		BAF	
		bone	fragment	long bone	medium to large mammal				2	2		BAF	
		bone	fragment	indeterminate fragments	indeterminate mammal size				5	5		BAF	very fragmentary
		tooth	complete	L2 or L3 incisor	likely sheep/goat				1	1		BAF	
structural	hardware	strapping	fragment						1	1		MMH	
food/beverage	beverage container	bottle: paneled	body	indeterminate vessel shape	colourless				9	9		GBO	indeterminate amount of vessels
structural	hardware	nail: common	fragment	1 head and partial shank; 1 shank only		machine cut			2	2		NCU	
food/beverage	beverage container	bottle: cylindrical	body		dark olive green		melted		1	1		GBO	
structural	building materials	brick	fragment		red				2	2		BRI	
food/beverage	tableware	flatware	base	transfer printed	brown: floral motif				1	1		VWE TR	
food/beverage	tableware	flatware	body	flow transfer printed	blue: indeterminate motif				1	1		RWE FT	very fragmentary
food/beverage	tableware	flatware	body	undecorated					2	2		RWE	
utilitarian	domestic	hollowware	body	glazed	light greyish green glaze				1	1		CYE	
structural	building materials	brick	fragment	exfoliated	red				2	2		BRI	small exfoliated fragments
		bone	fragment	indeterminate fragment	indeterminate mammal size				1	1		BAF	
		bone	fragment	indeterminate fragment	indeterminate mammal size		calcined		1	1		BAF	
structural	hardware	nail: common	fragment	2 head and partial shank; 1 shank only		machine cut			3	3		NCU	
utilitarian	domestic	hollowware	body	glazed	4 clear glazed; 1 brown glazed				5	5		CRE	
food/beverage	beverage container	bottle: cylindrical	body		pale aqua				2	2		GBO	
structural	building materials	window pane	fragment		pale aqua				1	1		GWI	
utilitarian	domestic	hollowware	rim	glazed	clear glazed				1	1		CRE	
utilitarian	domestic	hollowware	body	glazed	clear glazed		thermal alteration		3	3		CRE	
food/beverage	tableware	flatware	body	undecorated					1	1		RWE	
structural	building materials	window pane	fragment		colourless				1	1		GWI	
		bone	fragment	indeterminate mammalian fragment	indeterminate mammal size		blackened / charred		1	1		BAF	
food/beverage	beverage container	bottle: indeterminate	finish/neck	oil finish	colourless	thick construction; 1 partial seam mould on neck, but nothing on finish; could be applied finish			1	1		GBO	

APPENDIX B
Location 1 Complete Artifact Catalogue

FUNCTION 1	FUNCTION 2	OBJECT	FRAGMENT	ATTRIBUTE 1	ATTRIBUTE 2	MANUFACTURE	ALTERATION	LESS THAN 1.6mm	# OF ARTIFACTS	# OF OBJECTS	MAKER'S MARK	TAG CODE	NOTE
food/beverage	beverage container	bottle: cylindrical	body		colourless				1	1		GBO	very fragmentary
		bone	fragment	indeterminate mammalian fragment	indeterminate mammal size		calcined		1	1		BAF	
		bone	fragment	indeterminate mammalian fragment	indeterminate mammal size		blackened / charred		1	1		BAF	
structural	building materials	brick	fragment	exfoliated	red				1	1		BRI	very fragmentary
food/beverage	tableware	flatware	body	undecorated			thermal alteration		8	8		RWE	likely all part of the same vessel
		bone	fragment	indeterminate mammalian fragment	small to medium mammal				3	3		BAF	
structural	hardware	nail: common	fragment	head and partial shank		wrought			1	1		NWR	
structural	hardware	misc.	fragment	curled over fence wire end with partial machine cut nail attached; shank only					1	1		MMH	
utilitarian	food storage	mason jar	lid	pressed seal style lid; likely wire clamp or cam lever; embossed lettering [REGISTERED...] registered trademark	pale aqua				1	1		JAR	
food/beverage	indeterminate container	indeterminate	body		colourless				1	1		GLA	
structural	building materials	window pane	fragment		pale aqua				1	1		GWI	
furnishings	lighting	chimney lamp	fragment	T: 1 mm	colourless				1	1		GCL	
utilitarian	domestic	hollowware	body	glazed	2 brown glazed; 1 clear glazed				3	3		CRE	
		bone	fragment	indeterminate mammalian fragment	medium to large mammal				1	1		BAF	
		bone	fragment	long bone	small mammal				1	1		BAF	
		bone	fragment	indeterminate mammalian fragment	indeterminate mammal size				2	2		BAF	
structural	building materials	brick	fragment	exfoliated	red				3	3		BRI	
		bone	fragment	long bone	large mammal				1	1		BAF	
utilitarian	domestic	hollowware	rim	glazed	brown glazed				1	1		CRE	
utilitarian	domestic	hollowware	body	glazed	brown glazed				1	1		CRE	
structural	hardware	nail: common	fragment	head and partial shank		machine cut			2	2		NCU	
food/beverage	tableware	hollowware	rim	hand painted	pale green: abstract floral motif				1	1		VWE PA	
food/beverage	beverage container	bottle: cylindrical	body		pale aqua				1	1		GBO	
structural	hardware	nail: common	fragment	head and partial shank		machine cut			1	1		NCU	
structural	building materials	brick	fragment	exfoliated	red				1	1		BRI	
structural	building materials	window pane	fragment		pale aqua				1	1		GWI	
structural	hardware	nail: common	fragment	head and partial shank		machine cut			1	1		NCU	
structural	building materials	window pane	fragment		pale aqua				1	1		GWI	
food/beverage	beverage container	bottle: cylindrical	body	embossed lettering	pale aqua	partial embossed lettering; [SO..]			1	1		GBO	
food/beverage	beverage container	bottle: cylindrical	body		pale aqua				1	1		GBO	
food/beverage	tableware	flatware	body	flow transfer printed	blue: indeterminate motif				1	1		RWE FT	
structural	hardware	nail: common	fragment	head and partial shank		machine cut			1	1		NCU	
		bone	fragment	indeterminate mammalian fragment	small to medium mammal				1	1		BAF	
structural	building materials	brick	fragment	exfoliated	red				1	1		BRI	
		bone	fragment	indeterminate mammalian fragment	medium to large mammal				1	1		BAF	
food/beverage	tableware	flatware	body	undecorated					1	1		RWE	
food/beverage	tableware	flatware	body	undecorated					1	1		RWE	
utilitarian	domestic	hollowware	body	exfoliated					1	1		CRE	
structural	hardware	nail: common	complete			machine cut			1	1		NCU	
utilitarian	domestic	hollowware	body	glazed	clear glazed				2	2		CRE	

APPENDIX B
Location 1 Complete Artifact Catalogue

FUNCTION 1	FUNCTION 2	OBJECT	FRAGMENT	ATTRIBUTE 1	ATTRIBUTE 2	MANUFACTURE	ALTERATION	LESS THAN 1.6mm	# OF ARTIFACTS	# OF OBJECTS	MAKER'S MARK	TAG CODE	NOTE
utilitarian	domestic	hollowware	body	glazed	light greyish green glaze				1	1		CYE	
utilitarian	domestic	hollowware	body	unglazed					1	1		CRE	
structural	hardware	nail: common	fragment	head and partial shank		machine cut			2	2		NCU	
personal	cosmetics	bottle: hexagonal/teardrop	complete	complete bottle; small size (H: 40 mm; W: 24 mm; T: 9.5 mm); screw top finish	colourless		partially melted		1	1		GBC	likely nail polish or a fragrance sample bottle; likely a two part mould, but partial melting has made it difficult to determine; also likely 20th century although difficult to determine
food/beverage	tableware	indeterminate	foot ring	undecorated					1	1		RWE	
food/beverage	tableware	flatware	body	undecorated					1	1		RWE	
structural	hardware	fence staple	complete						1	1		MMH	
structural	hardware	nail: common	complete			machine cut			1	1		NCU	
food/beverage	beverage container	bottle: indeterminate	body	indeterminate vessel shape	colourless				2	2		GBO	square or rectangular vessel shape
food/beverage	beverage container	bottle: indeterminate	body	indeterminate vessel shape	pale green				1	1		GBO	square or rectangular vessel shape
		bone	fragment	long bone	medium to large mammal				1	1		BAF	
structural	hardware	nail: common	fragment	head and partial shank		machine cut			1	1		NCU	
structural	hardware	strapping	fragment						1	1		MMH	
utilitarian	domestic	hollowware	rim	glazed	dark brown glaze				1	1		CRE	
		bone	fragment	indeterminate mammalian fragments	exfoliated bone; indeterminate mammalian size				4	4		BAF	
structural	hardware	nail: common	fragment	heavily corroded		indeterminate nail type			1	1		N--	
food/beverage	tableware	flatware	body	undecorated					1	1		RWE	
food/beverage	beverage container	bottle: indeterminate	body	indeterminate vessel shape	colourless				1	1		GBO	likely square or rectangular
food/beverage	beverage container	bottle: cylindrical	body		colourless				1	1		GBO	
food/beverage	tableware	flatware	rim	undecorated					1	1		VWE	
structural	hardware	nail: finish/flooring	fragment	head and partial shank		wrought			1	1		NWR	flat square head almost in line with shank; likely a finish nail for flooring or other such application where the head of the nail has to reside below the surface
		bone	fragment	long bone	medium to large mammal				2	2		BAF	
		bone	fragment	partially or completely exfoliated; indeterminate mammalian fragments	indeterminate mammal size				5	5		BAF	
structural	hardware	nail: common	fragment	head and partial shank		machine cut			1	1		NCU	
structural	hardware	nail: common	fragment	head and partial shank		wrought			1	1		NWR	
utilitarian	domestic	hollowware	body	glazed	brown glazed				1	1		CRE	
structural	building materials	window pane	fragment		very pale aqua			1	1	1		GWI	
food/beverage	beverage container	bottle: rectangular	finish/neck/shoulder	Extract finish with added rounded bead detail at bottom of neck	colourless	seam moulds on either side			1	1		GBO	

APPENDIX C

Location 2, Location 3, and Location 4 Complete Artifact Catalogue

Appendix C
Location 2

Catalogue No.	Date	Unit	Layer	Depth (cm)	Material Type	Class 1	Class 2-Debitage Description	Class 3-Tool Type	Portion	Projectile Point Type	Thermally Altered	Frequency	Length	Width	Thickness	Comments
1	11-May	CSP 1	Surface	n/a	Onondaga	Lithics	Biface Thinning Flake					1				
2	11-May	CSP 2	Surface	n/a	Haldimand	Lithics	Flake Fragment					1				

Appendix C
Location 3

Catalogue No.	Date	Unit	Layer	Depth (cm)	Material Type	Class 1	Debitage Descriptio	Class 3-Tool Type	Portion	Projectile Point Type	Thermally Altered	Frequency	Length	Width	Thickness	Comments
1	11-May	CSP 1	Surface	n/a	Ancaster	Lithics	Flake Fragment					1				

Appendix C
Location 4

Catalogue No.	Date	Unit	Layer	Depth (cm)	Material Type	Class 1	Debitage Descriptio	Class 3-Tool Type	Portion	Projectile Point Type	Thermally Altered	Frequency	Length	Width	Thickness	Comments
1	11-May	CSP 1	Surface	n/a	Onondaga	Lithics	Tool	Biface	Incomplete	maybe Adena		1	35.42*	30.51*	6.04*	just the base and a bit of a shoulder

ALEXANDRA MULLAN, M.A.

Senior Archaeologist

Areas of practice

Archaeological Assessments for Municipal Infrastructure Projects

Linear Corridor Projects

Archaeological Assessment for Provincial Infrastructure Projects

Archaeological Assessments of Residential/Private Developments

Material Cultural Analysis

Archaeological Report Production

PROFILE

Alexandra Mullan is a Professional Archaeologist licensed by the Ministry of Citizenship and Multiculturalism (P1006). She holds a Master's degree in Archaeology from the University of Liverpool, and an Honour's Bachelor's degree in Prehistoric Archaeology and Near and Middle Eastern Civilizations from the University of Toronto.

Ms. Mullan has over 14 years of experience in cultural resource management, and for the past 5 years has been managing projects for municipal bodies, the MTO, and private clients throughout Ontario. She has extensive experience working in collaboration with Indigenous communities and has worked diligently to build respectful relationship with First Nations in southern Ontario. Alex has conducted Stage 1-4 archaeological assessments in a number of contexts, including linear corridor projects and in urban settings, and is proficient in completing these assessments in accordance with the *Standards and Guidelines for Consultant Archaeologists* (2011). Alex also has over 7 years of experience as an archaeological field director. Alex has directed crews ranging in size from 2-30 people on a variety of site types, including lithic scatters, large-scale village sites, and Euro-Canadian homesteads. She has experience analyzing lithic artifacts and has been responsible for the cataloguing of artifacts for sites throughout Ontario.

EDUCATION

M.A., Department of Archaeology, Specialization: Ceramic Analysis, University of Liverpool, Liverpool, United Kingdom	2011–2012
Honours B.A. Double Major: Prehistoric Archaeology and Near and Middle Eastern Civilizations, University of Toronto, Toronto, Ontario	2006–2011

PROFESSIONAL DEVELOPMENT

Ontario Archaeology Licence (Professional) – P1006	Since 2013
MTO RAQ Certified Qualified Person – Archaeology	Since 2024
WHMIS	2021

PROFESSIONAL ASSOCIATIONS

Member of the Ontario Archaeological Society	OAS

CAREER

Senior Archaeologist, WSP	2021–Present
Senior Archaeologist, Parslow Heritage Consultancy Ltd.	2020–2021
Archaeological Field Director, Aecom Ltd.	2013–2020
Archaeological Field Technician, URS Canada	2011-2013

PROFESSIONAL EXPERIENCE

Select Project Experience

- Gordie Howe International Bridge Canadian Site Sandwich Street Improvements, Windsor, ON (2021-ongoing): Project Manger and license holder for the Stage 2, Stage 3, and Stage 4 archaeological assessments. Windsor-Detroit Bridge Authority.
- Trinity Bellwoods Park Access and Circulation Project, Toronto, ON (2025-ongoing). Archaeology Task Lead for the Stage 1 archaeological assessment. Client: City of Toronto.
- Line 1 Subway Capacity Enhancement Program, Toronto, ON (2023-ongoing). Archaeology Task Lead and license holder for multiple Stage 1 and Stage 2 archaeological assessments. Client: Toronto Transit Commission.
- Vaughan Metro Centre Municipal Class Environmental Assessment, Vaughan, ON (2024). Archaeological Task Lead and license holder for the Stage 1 archaeological assessment. Client: City of Vaughan.
- Tributary 5 Markham Centre Environmental Assessment, Schedule B Municipal Class Environmental Assessment, Markham, ON (2024). Archaeology Task Lead and license holder for the Stage 1 archaeological assessment. Client: Enterprise Boulevard Inc.
- Hilda Street & North Welland/Niagara College Trail Connections Project, Welland, ON (2024-ongoing). Archaeology Task Lead and licensed archaeologist for the Stage 1-2 archaeological assessment. Client: City of Welland.
- Proposed Redevelopment of 192 Front Street West, Hastings, ON (2023-ongoing): Project Manager for the Stage 1-2, Stage 3, and Stage 4 archaeological assessments. Client: Grey Jay Develoments.
- Highway 89 and Essa 5th Line (GWP 2022-22-00), Simcoe County, ON (2024): Archaeological Task Lead and license holder for the Stage 1 archaeological assessment. MTO
- Proposed Development 50 Gilmore Road, Fort Erie, ON (2024): Project Manager and license holder for the Stage 1-2 archaeological assessment. Niagara Region.
- Proposed Development 192 Front Street West, Trent Hills, ON (2023-ongoing): Project Manager for the Stage 1-4 archaeological assessments. Grey Jay Developments.
- Gordie Howe International Bridge Canadian Site Sandwich Street Improvements, Windsor, ON (2021-ongoing): Project Manger and license holder for the Stage 2, Stage 3, and Stage 4 archaeological assessments. Windsor-Detroit Bridge Authority.
- Trent University Symons Campus Additional Lands, Peterborough, ON (2023): Project Manager for the Stage 1 and Stage 2 archaeological assessments. Trent University.
- Basement Flooding Protection Program – Area 34-05, Toronto, ON (2023): Archaeological Task Lead, license holder, and report writer for the Stage 1 archaeological assessment. City of Toronto.
- Basement Flooding Protection Program – Area 19-06, Toronto, ON (2023): Archaeological Task Lead and license holder for the Stage 2 archaeological assessment. City of Toronto.

- Proposed Development 5359 Dundas Street West, Toronto, ON (2023): Project Manager, license holder, and report writer for the Stage 1 archaeological assessment. Client: CentreCourt.
- Proposed Residential Development at 24 Brookside Road, Richmond Hill, ON (2023): Project Manager, license holder, and report writer for the Stage 1 and Stage 2 archaeological assessments. Client: Monage Corp.
- Holland Street East and Holland Street West Corridor, Bradford West Gwillimbury, ON (2022). License holder, field director, and report writer for the Stage 1 archaeological assessment. Client: Town of Bradford West Gwillimbury.
- Dufferin County Road 109 / 2nd Line Realignment Environmental Assessment, Orangeville, ON (2022): Project coordinator and license holder for the Stage 1 archaeological assessment. Client: Dufferin County.
- Beaver River Bridge Replacement and Beaverton Bridge Rehabilitation, Beaverton, ON (2022): Project manager, license holder, and report writer for the Stage 1 archaeological assessment. Client: Durham Region.
- Fort Erie New Trunk Watermain, Fort Erie, ON (2022): Project coordinator for the Stage 1 archaeological assessment. Client: Niagara Region.
- Beach Street Diversion Class EA, Mississauga, ON (2022). License holder and report writer for the Stage 1 archaeological assessment. Client: Regional Municipality of Peel.
- Bartley Smith Greenway Trail, Vaughan, ON (2021). License holder for the Stage 1 archaeological assessment. Client: City of Vaughan.
- Line 1 Subway Capacity Enhancement Program, Toronto, ON (2023-ongoing): Archaeological Task Lead for the Stage 1 and Stage 2 archaeological assessments. Toronto Transit Commission.
- Proposed Development 1485 Water Street, Peterborough, ON (2024): Project Manager and license holder for the Stage 2 archaeological assessment. London Property Corp.
- Connor Building Redevelopment Project, Richmond Hill, ON (2023-ongoing): Project Manager, license holder and report writer for the Stage 1 and Stage 2 archaeological assessments. Client: York Region
- Redevelopment at 385 Lansdowne Street, Peterborough, ON (2023): Project Manager, license holder, and report writer for the Stage 1 archaeological assessment. Client: Peterborough Action for Tiny Homes.
- Proposed Development at 0 Trafalgar Road, Oakville, ON (2023): Project Manager, license holder, and report writer for the Stage 1 archaeological assessment. Client: Crystal Homes.
- Royal Rose Court Development, Owen Sound, ON (2023-2024): Project Manager for the Stage 1 and Stage 2 archaeological assessments. Client: Fushioncorp Developments Inc.
- Proposed Development 5359 Dundas Street, Etobicoke, ON (2023): Project Manager, license holder, and report writer for the Stage 1 archaeological assessment. Client: CentreCourt.

- FGF Foods Manufacturing Campus, Phase 2, Pickering, ON (2022-ongoing): Project Manager and license holder for the Stage 1 and Stage 2 archaeological assessments. Client: Caplink Limited.
- Proposed Development 0 Trafalgar Road, Oakville, ON (2023): License holder, Project Manager, and report writer for the Stage 1 archaeological assessment: Client: Trafalgar Road (Oakville) Developments Ltd.
- Proposed Development 3650 Eglinton Avenue West, Mississauga, ON (2023): Project Manager, license holder and report writer for the Stage 1 and Stage 2 archaeological assessments. Client: Sangar Construction
- Basement Flooding Protection Program – Area 34-05, Toronto, ON (2023): License holder and report writer for the Stage 1 archaeological assessment. Client: City of Toronto
- Proposed Development 2970 Highway 3, Port Colborne, ON (2023): Project Manager for the Stage 1 and 2 archeological assessments. Client: Laverick Properties Inc.
- Archaeological Assessment of the Vanderburgh Site (AgGt-295), Thorold, ON (2022). Project manager and license holder for the Stage 3 archaeological assessment. Client: Kasian Architecture Ontario Limited.
- Highway 11/17 Twinning Pearl Lake to CPR Overhead (GWP 129-90-00), Pearl Lake, ON (2022): License holder and report writer for the Stage 2 archaeological assessment. Client: MTO Northwest Region.
- Detail Design Services 2 Bridge Rehabilitations on Highway 7, Norval, ON (2022). License holder, field director, report writer for the Stage 2 archaeological assessment. Client: Consor
- Mitigation of AjGw-671, Eldorado Park, Brampton, ON (2022). Project coordinator and license holder for the Stage 4 mitigation. Client: Serdika Consulting.
- 931 Yonge Street Residential Development, Toronto, ON (2022). License holder and report writer for the Stage 1 archaeological assessment. Client: CreateTO
- Highway 141 Rock Cut Site NE-141-B3 (GWP 5066-13-00), Huntsville, ON (2022-Ongoing). Coordinator, license holder, and report writer for the Stage 1 archaeological assessment. Client: MTO Northeast Region.
- Replacement of Six Bridges on Highway 553 and 810 – GWP 135-88-00, District of Algoma, ON (2022-Ongoing). License holder and report writer for the Stage 1-2 archaeological assessment. Client: MTO Northeast Region.
- Greenwich Lake #30 Aggregate Permit, Thunder Bay District, ON (2022-ongoing). License holder for the Stage 1 archaeological assessment. Client: North Rock Engineering Services.
- QEW Garden City Skyway (GCS) Twinning and Rehabilitation, St. Catharines, ON (2020-Ongoing): Assistant lead and report writer. Stage 1-2 Archaeological Assessment. Client: MTO, Central Region
- 3 Cassels Road East Residential Development, Whitby, ON (2022). License holder and report writer for the Stage 1-2 archaeological assessment. Client: Biglieri Group.
- Enbridge Operations Centre, Thorold, ON (2022). Project Manager for the Stage 1-2 archaeological assessment. Client: Kasian Architecture Ontario Incorporated.

- Existing Stations Renovations, Bronte GO and Appleby GO, Burlington, ON (2022). Project Manager, field director, and report writer for the Stage 2 archaeological assessments. Client: Metrolinx.
- Site-Specific Excavation of the Thompson Site (BcGs-17), Beaverton, ON (2022). License holder for the Stage 3 archaeological assessment. Client: Beaverton Mara Homes.
- Enbridge Operations Centre, Peterborough, ON (2022). Project Manager for the Stage 1 and Stage 2 archaeological assessments. Client: Kasian Architecture Ontario Incorporated
- 230 KV Transmission Project Class Environmental Assessment, Sault Ste. Marie, ON (2022). Project Manager and report writer for the Stage 1 archaeological assessment. Client: PUC Services Inc.
- Finch-Kennedy SmartTrack Station, Toronto, ON (2022). Project Manager, field director, and report writer for the Stage 1-2 archaeological assessment. Client: Metrolinx
- Burlington GO Station Existing Station Renovation, Burlington, ON (2021): License holder, field director, and report writer for the Stage 2 archaeological assessment. Client: Metrolinx.
- Proposed Widening of Confederation Line – Highway 40 / CNR Bridge Replacement Project, Sarnia, ON (2021). License holder and report writer for the Stage 1 archaeological assessment. Client: MTO West Region.
- Harwood Avenue Class Environmental Assessment, Ajax, ON (2021). License holder for the Stage 1 archaeological assessment. Client: Town of Ajax.
- Fifth Line Improvements from Derry Road to Highway 401, Milton, ON (2021): License holder for the Stage 1-2 archaeological assessment. Client: Town of Milton.
- Highway 417 East Expansion Project, Ottawa, ON (2021): License Holder for the Stage 1 archaeological assessment. Client: Ministry of Transportation, Eastern Region
- YTO14 – Toubner Site, Markham, ON (2021): License Holder and responsible for the Stage 1 archaeological assessment report. Client: Morrison Hershfield Group Inc.
- Sanitary Forcemain Replacement (Group 2): Fallingbrook, Bluffer's Park, Greyabbey, Cumber, and Island Road Alignments, City of Toronto, ON (2021): License holder for the Stage 1 archaeological assessment. Client: City of Toronto.
- Sanitary Forcemain Replacement (Group 2): New Toronto and Mimico Alignments, City of Toronto, ON (2021). License holder for the Stage 1 archaeological assessment. Client: City of Toronto.
- Sanitary Forcemain Replacement (Group 2): Humber and Skydome Alignments, City of Toronto, ON (2021): License holder for the Stage 1 archaeological assessment. Client: City of Toronto.
- Cando Sarnia Storage Facility, Sarnia, ON (2021): License holder for the Stage 1-2 archaeological assessment. Client: Cando Rail.
- Town of Erin Urban Centre Wastewater Servicing, Erin, ON (2021): License holder for the Stage 1-2 archaeological assessment. Client: Town of Erin.

- The Extension of Wyecroft Road (RR 45) from East of Burloak Drive (RR 21) to Bronte Road (RR 25), Oakville, ON (2021): License holder for the Stage 1-2 archaeological assessment. Client: Regional Municipality of Halton.
- Archaeological Assessment of AfHo-54, Sarnia, ON (2021): License holder and archaeologist for the Stage 3 archaeological assessment. Client: Cando Rail.
- Proposed Condominium Development 254-260 Adelaide Street West, Toronto, ON (2021): License holder for the Stage 1 archaeological assessment. Client: CentreCourt.
- Proposed Condominium Development 5251 Dundas Street West, Toronto, ON (2021): License holder and archaeologist responsible for completing Stage 1 archaeological assessment property inspection and report. Client: CentreCourt.
- Proposed Subdivision in the Town of Beaverton, Ontario (2021): Archaeologist and Licence Holder for the Stage 2 archaeological assessment. Client: Beaverton Mara Inc.
- Sandwich Street Upgrades, City of Windsor, Ontario (2021): Archaeologist and license holder. Responsible for completing the Stage 3 archaeological assessment of Location 1. Client: Windsor Detroit Bridge Authority.
- Oakville Crosstown Trail Improvements between Bristol Circle and Winston Churchill Boulevard (2021): Archaeologist. Responsible for completing the Stage 1-2 archaeological assessment. Client: Town of Oakville.
- Proposed Development at 8736 Huntington Road (Part C) in the City of Vaughan, Ontario (2021): Archaeologist. Responsible for completing the Stage 3 archaeological assessment. Client: LiUANA Local 183.
- North Whitby and North Oshawa Sanitary Sewer Diversion Strategy, Region of Durham, Ontario (2021): Archaeologist. Responsible for completing the property inspection and report for the Stage 1 archaeological assessment. Client: Regional Municipality of Durham.
- Proposed Condominium Development at 12355 Mill Road, Vaughan (2021): Archaeologist. Responsible for completing the property inspection for the Stage 1 archaeological assessment. Client: Vito Pacifico.
- Severance of Plan 410, Park Lot 77, Wingham, ON (2021): Licensed Archaeologist, Project Manager, and Report Writer. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: Precision Builders.
- 245 Spillsbury Drive Townhouse Development, Peterborough, ON (2021): Licensed Archaeologist, Project Manager, and Report Writer. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: PGL Environmental Consultants.
- Severance of 515 Oakwood Drive, Pickering, ON (2021): Licensed Archaeologist, Field Director, and Report Writer. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: Private Landowner.
- Hydro One Minden Transmission Station New Pole Yard EA, Minden Hills, ON (2021): Licensed Archaeologist, Project Manager, and Report Writer. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: Greer Galloway Consulting Engineers.

- Condominium Development at McLeod Road, Niagara Falls, ON (2021): Licensed Archaeologist, Project Manager, and Report Writer. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: 2773765 Ontario Limited.
- Station Meadows West, Smithville, ON (2020): Licensed Archaeologist, Field Director, and Report Writer. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: Private Landowner.
- 2259 Markham Road Warehouse Expansion, Scarborough, ON (2020): Licensed Archaeologist, Field Director, and Report Writer. Stage 1 Archaeological Assessment. Project completed prior to joining WSP. Client: Acadian Construction.
- Severance of 2128 Newtownville Road, Newtonville, ON (2020): Licensed Archaeologist, Project Manager, and Report Writer. Stage 1 Archaeological Assessment. Project completed prior to joining WSP. Client: Private Landowner.
- Stage 3 Archaeological Assessment Zhishodewe Site (AjGw-512) East to West Diversion Sanitary Trunk Sewer, Mississauga, ON (2019-2021). Field archaeologist. Stage 3 Archaeological Assessment. Project completed prior to joining WSP. Client: Region of Peel.
- Highway 6 & 401 from Hamilton North Limits to Guelph South Limits Preliminary Design, EA Update and Detail Design-Build Ready Status; and Highway 6 (Hanlon Expressway) Improvements, Guelph; and Owner's Engineering Services, Guelph, ON (2019). Field Director. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- Highway 427 Expansion from Highway 7 to Major Mackenzie Drive, McGillivary Road Realignment EA, Vaughan, ON (2019): Field Director. Stage 2 Archaeological Assessment. Project completed prior to joining WSP. Client: Ministry of Transportation Ontario (MTO).
- Ottawa Light Rail Transit Project EA, Ottawa, ON (2019): Field Director. Stage 2 Archaeological Assessment. Project completed prior to joining WSP. Client: City of Ottawa.
- QEW Improvements from East Cawthra Road to The East Mall Detail Design and Class EA, Mississauga, ON (2019): Field Director. Stage 2 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- Additional Lands King City GO Station Improvements EA, King City, ON (2019): Field Director. Stage 1 Archaeological Assessment. Project completed prior to joining WSP. Client: Metrolinx.
- Rehabilitation of Highway 401 Eastbound Collector Lanes Between Avenue Road and Warden Avenue. Toronto, ON (2019). Field Director. Stage 2 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- Queen Elizabeth Way and Bowen Road Interchange Improvements, Fort Erie, ON (2014-2019): Field Director. Stage 2 and 3 Archaeological Assessments. Project completed prior to joining WSP. Client: MTO.
- Ambassador Bridge Project, Windsor, ON (2018-ongoing): Field Director. Stage 4 Archaeological Mitigation. Project begun prior to joining WSP. Client: Walpole Island First Nation.

- Site 340 and 346 Indian Road AbHs-30, Windsor, ON (2018): Licensed Archaeologist and Field Director. Stage 4 Archaeological Mitigation. Project completed prior to joining WSP. Client: Walpole Island First Nation.
- QEW Bertie CN Bridge, Oriole Site (AfGr-50), Fort Erie, ON (2018): Licensed Archaeologist and Field Director. Stage 3 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- QEW Bertie CN Bridge, Boyer Site (AfGr-60), Fort Erie, ON (2018): Licensed Archaeologist and Field Director. Stage 3 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- QEW Bertie CN Bridge, Beadroot Site (AfGr-49), Fort Erie, ON (2018): Field Director. Stage 3 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- Ottawa OLRT Confederation East, Ottawa, ON (2017). Field Director. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: City of Ottawa.
- Ottawa OLRT Confederation West, Ottawa, ON (2017): Field Director. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: City of Ottawa.
- Ottawa OLRT Trillium Line, Ottawa, ON (2017): Field Director. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: City of Ottawa.
- Highway 401 West Expansion, Owners Engineer Services, Mississauga, ON (2017-2018): Field Director. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- Circuit H9K Transmission Line Upgrade EA, Kapuskasing, ON (2017): Field Director. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: Hydro One.
- Highway 401 Road Improvements from Regional Road 25 to the Credit River EA, Peel, ON (2017): Field Director. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- Barrie to Essa Transmission Line Upgrade EA, Barrie, ON (2016): Field Director. Stage 1 Archaeological Assessment. Project completed prior to joining WSP. Client: Hydro One.
- Finch West Light Rail Transit Project Additional Lands EA, Toronto, ON (2016): Field Director. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: Metrolinx.
- Sir Adam Beck Transmission Station EA, Niagara Falls, ON (2016): Field Director and Report Writer. Stage 1 Archaeological Assessment. Project completed prior to joining WSP. Client: Hydro One.
- Scarborough Subway Expansion, Scarborough, ON (2016): Field Director. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: Metrolinx.
- Forestry Point Fire Station, Red Lake, ON (2016). Field Archaeologist. Stage 1-4 Archaeological Assessment. Project completed prior to joining WSP. Client: Infrastructure Ontario.

- Hindle Schoolhouse Site (BbGw-77), Innisfil, ON (2016): Field Director. Stage 3 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- Waterloo LRT Corduroy Road, Waterloo, ON (2016): Field Archaeologist. Stage 3-4 Archaeological Mitigation. Project completed prior to joining WSP. Client: City of Waterloo.
- Thunder Bay Courthouse Project, Thunder Bay, ON (2015): Field Director. Stage 4 Archaeological Mitigation. Project completed prior to joining WSP. Client: Infrastructure Ontario.
- Highway 427 Expansion Project, Vaughan, ON (2015): Field Director. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- Highway 427 Expansion, Jeffery Site, Vaughan, ON (2015): Field Director. Stage 3 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- Black Sturgeon River Tower Relocation and Replacement EA, Red Rock, ON (2015): Field Director and Report Writer. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: Hydro One.
- Nipigon Hydro Distribution Centre EA, Nipigon, ON (2015): Field Director and Report Writer. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: Hydro One.
- Madsen Distribution Centre EA, Madsen, ON (2015): Field Director. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: Hydro One.
- Highway 400/69 and Parry Sound Drive Interchange EA, Parry Sound, ON (2015): Field Director and Report Writer. Stage 1-2 Archaeological Assessment. Project competed prior to joining WSP. Client: MTO.
- Highway 12 Memorial Drive to Horseshoe Valley Road Operational and Safety Improvements, Orillia, ON (2015). Field Director. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- Highway 400 Highway 11 to Highway 89 Road Expansion, Simcoe County, ON (2015). Field Director. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- Widening of County Road 4, Brandford 8th Line to 1 Kilometre North of County Road 89. Simcoe County, ON (2014). Field archaeologist. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- Highway 417 Rehabilitation and Improvements Shaw's Creek and Bear Brook, Ottawa, ON (2014). Field archaeologist. Stage 2 Archaeological Assessment. Project completed prior to joining WSP. Client: MTO.
- Jericho Wind Energy Project. Bosanquet Township, ON (2013). Field Director. Stage 3 Archaeological Assessments for numerous sites. Project completed prior to joining WSP. Client: NextEra.
- Adelaide Wind Energy Centre Project. Adelaide-Metcalfe Township, ON (2013): Field Director. Stage 3 & 4 Archaeological Assessments for numerous sites. Project completed prior to joining WSP. Client: NextEra.
- Bornish Wind Energy Centre Project. East Williams Township, ON (2013): Field Director. Stage 3 & 4 Archaeological Assessments for numerous sites. Project completed prior to joining WSP. Client: NextEra.

- East Durham Wind Energy Centre Project. East Durham Township, ON (2013): Field Director. Stage 3 & 4 archaeological assessments for numerous sites. Project completed prior to joining WSP. Client: NextEra.
- Mattawa Hydro Distribution Centre, Mattawa, ON (2013): Field archaeologist. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: Hydro One.
- Nestor Falls Distribution Station, Chapple Township, ON (2013): Field archaeologist. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: Hydro One.
- Barwick Distribution Station, Mattawan Township, ON (2013): Field archaeologist. Stage 1-2 Archaeological Assessment. Project completed prior to joining WSP. Client: Hydro One.
- Summer Haven Wind Centre Project, Rainham Township, ON (2012): Field archaeologist. Stage 3 Archaeological Assessment of numerous sites. Project completed prior to joining WSP. Client: NextEra.
- Highway 400 King Road to Canal Road Expansion, King City, ON (2012): Field archaeologist. Stage 3 Archaeological Assessment of numerous sites. Project completed prior to joining WSP. Client: MTO.
- Highway 407 East Owner's Engineer Assignment, Oshawa and Whitby, ON (2011): Field archaeologist. Stage 3 Archaeological Assessment of numerous sites. Project completed prior to joining WSP. Client: Archaeological Services Inc.

Mike Teal, MA

Principal Archaeologist, Technical Lead

Areas of practice

Ontario Archaeology Assessment and Mitigation

Federal Canadian Archaeology

Project Management

Languages

English

PROFILE

Mike Teal is a Principal Archaeologists and Technical Lead within WSP's Environmental Planning division in Ontario. He is located in London, Ontario and has been with the company for 13 years. Mike is a licensed professional Ontario archaeologist (P364) with over 27 years of experience in cultural resource management, including 10 years with the federal government at Parks Canada and 17 years in non-federal and private sectors.

At WSP, Mike is responsible working with a team of 11 full time archaeologists and many field technicians to complete archaeological projects across Ontario. He provides technical guidance and leadership in the development and implementation of field work programs, the delivery of technical reports, project management, preparing cost estimates and proposals, and carrying out fieldwork for all stages of archaeological investigation. Mike is a primary contact at WSP for clients' requests for information, technical advice, and action regarding archaeology. His work experience has given him a strong understanding of regulatory requirements for archaeology in Ontario and on Canadian federal lands.

In addition, Mike has supported the growth and development of WSP's relationships with many Indigenous communities in Ontario by: establishing Master Service Agreement for archaeological field technician services; creating sub-consultant agreements with Indigenous owned businesses; providing archaeological services for Indigenous-led projects and businesses; participating in Indigenous consultation and engagement awareness events; and, helping to create mentor work placement agreements to provide work experience for Indigenous youth.

EDUCATION

MA Anthropology and Archaeology, Memorial University of Newfoundland, St. John's	2001
BA (Honours) Archaeology, Wilfrid Laurier University, Waterloo	1998

PROFESSIONAL DEVELOPMENT

Professionally Licensed Archaeologist, Ontario	Year
Member in Good Standing Ontario Archaeology Society	Year

RAQS certified to provide archaeological services for Ministry of Transportation projects.

CAREER

WSP E&I Canada Ltd. – London, Ontario Principal Archaeologist, Technical Lead	2021 – Present
Golder Associates Ltd. – London, Ontario Associate, Senior Archaeologist, Team Lead	2012 – 2021
Parks Canada Agency – Ontario Service Centre, Cornwall Archaeologist	2002 – 2012
Various Consultancies Archaeologist	1997 – 2001

PROFESSIONAL EXPERIENCE

Proposed Limestone Quarry Bruce County
Bruce County, Ontario

Project Manager. Stage 1 and 2 archaeological assessment of 15.5 ha land parcel for proposed pit. No archaeological sites were identified, and no further work was recommended. Role included communication with the client, health and safety plan preparation, and budget and schedule management. Planned and coordinated field program for Stage 2 archaeological assessments, interpreted all archaeological data, and conducted technical review of prepared report. Active engagement with interested First Nations communities.

Paris Pit Due Diligence
Paris, Ontario

Project Manager. Stage 1 and 2 archaeological assessments for CRH Canada Group Inc. of 9.4 ha land parcel prior to extraction activities. Role included communication with the client, health and safety plan preparation, and budget and schedule management. Planned and coordinated field program for Stage 2 archaeological assessments, interpreted all archaeological data, and conducted technical review of prepared report.

Proposed St Marys Thomas Quarry Extension
St Marys, Ontario

Project Manager. Stage 1 and 2 archaeological assessments for CRH Canada Group Inc. of 27.5 ha land parcel for proposed pit extension. Role included communication with the client, health and safety plan preparation, and budget and schedule management. Planned and coordinated field program for Stage 2 archaeological assessments, interpreted all archaeological data, and conducted technical review of prepared report. Active engagement with interested First Nations communities.

Proposed Flamborough Quarry Extension
Flamborough, Ontario

Archaeology Lead and Task Manager. Stage 1, 2, and 3 archaeological assessments for Votorantim Cimentos North America of 45 ha land parcel for proposed pit extension. Role included communication with the client, health and safety plan preparation, and budget and schedule management. Planned and coordinated field program for Stage 2 and 3 archaeological assessments, interpreted all archaeological data, and conducted technical review of prepared report. Stage 4 recommended to mitigate impacts to identified mid-19th century historical sites. Active engagement with interested Indigenous communities.

Stony Point Clearance and Remediation Project – Archaeological Investigations
Former Camp Ipperwash, Ontario
(2016 – ongoing)

Archaeological field leader/senior archaeologist. Providing archaeological support services during UXO clearance activities at Stony Point, Ontario for the Department of National Defence (DND). Archaeological objectives are to identify, protect, and assess the significance of cultural resources encountered during UXO investigations and to determine the need for archaeological mitigation through either excavation or avoidance and protection.

TC Energy Northern Ontario Infrastructure Operations and Maintenance Program Various Locations, Northern Ontario
(2017 – 2022)

Project manager. Provided technical guidance and oversight for Stage 1 and Stage 2 Archaeological Assessments at various TC Energy work sites in northern Ontario. Coordinated field activities with field personnel; completed daily quality control and quality assurance reviews of field data; and ensured compliance fieldwork and reporting was being completed to MTCS Standards and Guidelines.

Proposed Caledon Quarry/Pit
Caledon, Ontario
(2020-ongoing)

Archaeology Task Lead, and archaeology licensee for Stage 1 -2 Archaeological Assessment of proposed Caledon Quarry/Pit and subsequent Stage 3 Archaeological Assessments of 14 historical Euro-Canadian and pre-contact Indigenous sites. Role included communication with the client, health and safety plan preparation, and budget and schedule management. Planned and coordinated field program for Stage 1-2 and Stage 3 Archaeological Assessments, interpreted all archaeological data, and conducted senior technical review of prepared Stage 1-2 report. Stage 3 reports are currently in progress. Active engagement with interested Indigenous communities.

W12A Landfill Site Expansion
London, Ontario
(2018 - 2020)

Archaeology Lead. Stage 2 archaeological assessment in support of Environmental Assessment for proposed City of London landfill site expansion. Project involved the archaeological survey of approximately 78.25 ha, which resulted in the identification of six sites. Five of the sites were concluded to need no further archaeological assessment, while one site was concluded to require Stage 3 archaeology assessment prior to impacts. Project involved consultation with municipal government and local Indigenous communities.

Three Grand River Crossings Environmental Assessment
Brantford, Ontario
(2019-2020)

Archaeology lead for Stage 1 Archaeological Assessment for Environmental Assessment for the Three Grand River Crossings project in Brantford, Ontario. Field work included a property inspection and reporting included background desktop research, evaluation of archaeological potential, and recommendations for appropriate Stage 2 assessment, where required. Assessment involved engagement with interested Indigenous communities.

Amherstburg Wastewater Servicing Plan
Amherstburg, Ontario
(2016)

Archaeology lead for Stage 1 Archaeological Assessment for 4.2 km long study corridor. Following a property inspection reporting included background desktop research, evaluation of archaeological potential, and recommendations for appropriate Stage 2 assessment, where required.

Brantford Water Treatment Complex Brantford, Ontario
(2015)

Archaeology lead for Stage 1 and 2 Archaeological Assessments for the Brantford Water Treatment Complex. Field work included a property inspection followed by Stage 2 test trenching to identify potential cultural resources. Stage 1 reporting included desktop research, evaluation of archaeological potential, and recommendations for appropriate Stage 2 assessment. Stage 2 reporting involved summarizing field assessment results and making recommendations for further work, where required.

Town of Caledon Cemetery Asset Management
Alton, Ontario
(2021-2022)

Project Director. Project involved a GPR survey investigation of an active historical Euro-Canadian cemetery and the subsequent development of an online web mapping tool to display the cemetery property, aerial imagery, and headstone location. This information was used to determine the number of burials within the cemetery so that the Town of Caledon could better manage the property.

Woodhull Cemetery London, Ontario
(2017-2019)

Project Manager. Stage 1 background study followed by Stage 2 archaeology survey and GPR survey to identify potential archaeological sites and unmarked burial features. Fieldwork resulted in the identification of one archaeological site and several possible burial features that were recommended for further investigation to meet regulatory requirements. Project involved consultation with municipal and provincial governments and local Indigenous communities.

Mud Creek Sub-Watershed Class Environmental Assessment
London, Ontario

Archaeology lead for Stage 1 Archaeological Assessment for study area comprised of 31 land parcels in the City of London. Reporting included background desktop research, evaluation of archaeological potential, and recommendations for appropriate Stage 2 assessment, where required.

Kayanase Proposed Facility Expansion
Six Nations Reserve No. 40, Ontario

Project manager for Stage 1 and 2 Archaeological Assessment of 4 ha land parcel prior to a proposed facility expansion by Kayanase Greenhouse. Assessment resulted in the identification of several pre-contact Indigenous and historical sites, of which three were recommended for further assessment. Avoidance and protection plans were developed for the three sites through engagement with the Indigenous community. Construction monitoring services were also provided as part of the avoidance and protection plan.

Port Colborne Quarry Expansion
Port Colborne, Ontario
(2019 – ongoing)

Archaeology Task Lead, and archaeology licensee for Stage 3 Archaeological Assessments of nine pre-contact Indigenous sites for license application to expand Port Colborne Quarry. Role included communication with the client, health and safety plan preparation, and budget and schedule management. Planned and coordinated field program for Stage 3 archaeological assessments, interpreted all archaeological data, and conducted technical review of prepared reports. Active engagement with interested Indigenous communities.

RHIANNON FISHER , MSc, RPA.

Lead Archaeologist, Human Osteologist

Education Background:
MSc Bioarchaeology, Human Osteology, University of Exeter, Exeter, United Kingdom (2016)

BSc Double Major in Biology and Bioarchaeological Anthropology, University of Western Ontario, London, Ontario (2011)

Career:
Golder Associates Ltd. – Mississauga & London – Ontario (2011 to 2022)
WSP Canada Inc. – Mississauga, Ontario (2022 to present)

Rhiannon is a professionally licensed archaeologist in Ontario (P468) and a Lead Archaeologist within WSP's Earth and Environment Group. Rhiannon has a Master's degree in Bioarchaeology specializing in Human Osteology. Rhiannon has managed the excavation of archaeological sites across southern Ontario ranging from the Archaic Period to the late 19th century. She has largely worked on projects which span over several years such as the Enbridge Line 10 Replacement Project.

Rhiannon works primarily in a project management role where she manages multidisciplinary projects and archaeological projects including Stage 1, 2, and 3 assessments and Stage 4 mitigation. She also carries out archaeological surveys, test excavations, and mitigative excavations in the field, and responds to clients' requests. Rhiannon works closely with Indigenous groups incorporating their traditional knowledge and expertise into archaeological strategies. Rhiannon has developed several archaeological chance finds and monitoring programs for large scale rehabilitation and development projects such as the Port Hope Area Initiative and the Darlington New Nuclear Project.

CERTIFICATIONS AND AFFILIATIONS

- Canadian Archaeological Association (CAA)
- Certified in Standard First Aid CPR/AED Level C
- Chartered Institute for Archaeologists (CIfA)
- CSCS Card Holder (UK)
- Ontario Archaeological Society (OAS)
- Professionally Licensed Archaeologist in Ontario (P468)
- Registered Professional Archaeologist (RPA)

PROFESSIONAL EXPERIENCE (NIAGARA)

- **Niagara Region, Catherine Street and Lakeshore Road SPS Municipal Class EA, Town of Fort Erie, ON (2021 – Present):** Project manager and professionally licensed Archaeologist for the Stage 1 and 2 terrestrial assessments of the properties prior to impacts from the proposed new intakes at the Water Treatment Plants as part of the Schedule B Class EA. Project manager and professionally licensed Archaeologist for the Stage 3 assessment and Stage 4 Mitigation of Archaeological Site AfGr-112 at the Catherine Street SPS.
- **Niagara Region, Rosehill Water Treatment Plant New Intake Schedule B Class EA, Town of Fort Erie, ON (2020 – 2021):** Project manager and professionally licensed Archaeologist for the Stage 1 and 2 terrestrial assessments of the property. Project manager for the Marine assessment of the property prior to impacts from the proposed new intake at the Water Treatment Plant as part of the Schedule B Class EA.
- **NPC, Clifton Hill Sidewalk Expansion Project, Niagara Falls, ON (2020-2021):** Project manager, professionally licensed Archaeologist, and report co-author for the Stage 1-2 and 3 assessments and Stage 4 mitigation of site AgGs-431 on the property prior to impacts from the proposed sidewalk extension project. Responsible for site strategy development, client relations, Indigenous relations, correspondence with the MCM and overseeing staff on the project.
- **NPC, McFarland Park, Niagara Falls, ON (2019-2020):** Project manager, professionally licensed Archaeologist, and report co-author for the Stage 1-2 assessments of the property. Responsible for site strategy development, client relations, Indigenous relations, correspondence with the MCM and overseeing staff on the project.

- **NPC, Niagara River Recreation Trail Expansion, Niagara Falls, ON (2019-2020):** Project manager, professionally licensed Archaeologist, and report co-author for the Stage 1-2 assessments of the property. Responsible for site strategy development, client relations, Indigenous relations, correspondence with the MCM and overseeing staff on the project.
- **GMBP/Niagara Region, South Niagara Falls WWTP and Servicing Class EA, ON (2019):** Archaeology Task Lead, professionally licensed Archaeologist, and report co-author for the Stage 1 assessment for the Municipal Class EA for the Region.

PROFESSIONAL EXPERIENCE (CEMETERY & OSTEOLOGICAL)

- **Town of Caledon, Alton Cemetery Retaining Wall Replacement, Caledon, ON (2019-Present):** Project Manager, Professionally Licensed Archaeologist and Human Osteologist for the Stage 3 Cemetery Investigation and Stage 4 Mitigation for the replacement of the retaining wall at Alton Cemetery.
- **Omagh Cemetery Utility Installation, Milton, ON (2023-Present):** Project Manager and Human Osteologist for the Stage 3 Cemetery Investigation in advance of utility installation at Omagh Cemetery.
- **11970 Hwy 50 Development / Shiloh Cemetery Investigation, Brampton, ON (2019-Present):** Project Manger, Professionally Licensed Archaeologist and Human Osteologist for the Cemetery Investigation at Shiloh Cemetery in advance of a residential development.
- **Town of Caledon, Alton Cemetery Asset Management Project, Caledon, ON (2019-2023):** Project Manager and Professionally Licensed Archaeologist for the Asset Management Project of the Cemetery.
- **Minto, York Downs Residential Development Cemetery Investigation, Markham, ON (2017-2022):** Project Manager, Professionally Licensed Archaeologist and Human Osteologist for the Stage 3 Cemetery Investigation at York Downs Golf Course.
- **Promita Holdings, 310 Kingston Road, Ajax, ON (2019-2020):** Project Manager, Professionally Licensed Archaeologist and Human Osteologist for the Stage 3 Cemetery Investigation at 310 Kingston Road.

PROFESSIONAL EXPERIENCE (FEDERAL / PARKS CANADA)

- **Esson Lake, Trent Severn Waterway, ON (2022-Present):** Project Manager, Professionally Licensed Archaeologist and Report Author for the Dam Rehabilitation at Esson Lake.
- **Peterborough Earthen Dams, Trent Severn Waterway, ON (2021-2022):** Project Manager, Principal Investigator and Report Author for the Peterborough Earth Dams Rehabilitation Project.
- **Rouge National Urban Park, ON (2021-2022):** Principal Investigator and Report Author for various Archaeological Impact Assessments within the Park including the Gateway Project, New Offices and Bob Hunter Trail Expansion.
- **Douro Dam Rehabilitation, Douro, ON (2020):** Archaeologist for the Archaeological Impact Assessment for the Project.
- **OASIS Project; Lock 9 Meyers and Lock 10 Hagues Reach, Trent Severn Waterway, Campbellford, ON (2019):** Principal Investigator and Report Author for the Archaeological Impact Assessment for the Project.

- **Ranney Falls Dam 10 Rehabilitation, Trent Severn Waterway, Campbellford, ON (2019-2020):** Principal Investigator and Report Author for the Archaeological Impact Assessment for the Project.
- **Trenton Dam 1 Rehabilitation, Trent Severn Waterway, Quinte West, ON (2019):** Archaeologist for the Archaeological Impact Assessment for the Project.
- **Rouge National Urban Park, Markham, ON (2018):** Principal Investigator for the Archaeological Impact Assessment of the Reesor North Node and Connector Trails.

PROFESSIONAL EXPERIENCE (PROVINCIAL)

- **ES Fox, DNNP Archaeological Monitoring and Chance Finds Program, Darlington ON (2023 – Present):** Professional Archaeologist providing consulting services on an "as required" basis for work at their Darlington Facility. Providing presentations to ES Fox staff and other subconsultants on the Archaeological Monitoring Program and Chance Finds Procedure.
- **CNL, PHAI Archaeological Monitoring and Chance Finds Program, Port Hope ON (2022 – Present):** Professional Archaeologist providing consulting services on an "as required" basis for ongoing work in Port Hope as part of the PHAI.
- **GMBP/Region of Peel, Municipal Class EA for the Finch Stormwater Pumping Station Upgrades, ON (2022 – Present):** Project manager for the multidisciplinary studies for the project including natural heritage, archaeological and cultural heritage. Professionally licensed archaeological for the Stage 1 terrestrial assessment prior to impacts from the proposed upgrades.
- **CIMA+/Region of Peel, Caledon East 6 Municipal Supply Well and Caledon East 3 Treatment Facility, Schedule B Municipal Class EA, ON (2022 – Present):** Project manager for the multidisciplinary studies for the project including geotechnical, contamination overview, environmental, natural environment, archaeological, and cultural heritage. Professionally licensed archaeologist for the Stage 1 and 2 terrestrial assessments prior to impacts from the proposed upgrades.
- **GMBP/Region of Peel, Municipal Class EA for the Stormwater Servicing Plan for Regional Road Infrastructure, ON (2021 – Present):** Archaeology Task Lead, professionally licensed Archaeologist, and report co-author for the Stage 1 assessment for the Municipal Class EA for the Region.
- **GMBP/Region of Peel, Hiawatha and Elmwood Municipal Class EA, ON (2020 - Present):** Archaeology Task Lead and professionally licensed Archaeologist for the project.
- **GMBP/Region of Peel, Municipal Class EA for the Capacity Expansion of the Central Mississauga Wastewater System, ON (2019-2020):** Archaeology Task Lead, professionally licensed Archaeologist, and report co-author for the Stage 1 assessment for the Municipal Class EA for the Region.
- **Hasty Tract EA, Township of Springwater, ON (2018):** Project manager and professionally licensed Archaeologist for the Stage 1 assessment of the property.
- **Area 39 Basement Flooding Prevention, Township of Etobicoke, County of York, ON (2018 – 2019):** Project manager and professionally licensed Archaeologist for the Stage 1 and 2 assessments on the project.
- **Yonge Street/Highway 7 Water and Wastewater Servicing Class EA, ON (2018):** Professionally licensed Archaeologist on the project for the Stage 1 and 2 Archaeological Assessment.

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