ORIGINAL REPORT

Stage 1 and 2 Archaeological Assessment

Milton Quarry East Extension, Part of Lots 11 and 12, Concession 1, Former Esquesing Township, Halton County, Now the Town of Halton Hills, Regional Municipality of Halton

Submitted to:

Kevin Mitchell
CRH Canada Group Inc.
2300 Steeles Avenue West, 4th Floor,
Concord, Ontario,
L4K 5X6

Submitted by:

Golder Associates Ltd.
309 Exeter Road, Unit #1, London, Ontario, N6L 1C1, Canada

+1 519 652 0099

20142012-R01

30 April 2021

Licensee: Rhiannon Fisher (P468)

PIF #: P468-0060-2020

Distribution List

1 PDF Copy - CRH Canada Group Inc.

1 PDF Copy - Ministry of Heritage, Sport, Tourism and Culture Industries

1 PDF Copy - Golder Associates Ltd.

Project Personnel

Project Director	Michael Teal, M.A. (P364), Associate, Senior Archaeologist
Project Manager	Rhiannon Fisher, M.Sc., RPA (P468), Archaeologist
Archaeological Licensee	Rhiannon Fisher
Field Directors	Rebecca Parry, M.A. (P1013), Archaeologist Connor Schmid, B.A. (R1119), Archaeologist Lafe Meicenheimer, M.A. (P457), Archaeologist Martha Tildesley, M.A. (P399), Archaeologist
Field Assistants	Jessica Figura, Adam Goodlet (A1011), William Pettes, B.A., David Schmoll, Martha Tildesley, M.A., (P399), Jordan Aitken, B.A., (R1267)
Indigenous Liaisons	**Mississaugas of the Credit First Nation:** Cody Bushell, Dennis LaForme **Six Nations First Nation:** Ryan Nanticoke, John Miller
Report Production	Rebecca Parry Connor Schmid Randy Hahn, Ph.D. (P1077), Archaeologist
GIS/Mapping	Dave Hoskings, Senior Drafter
Technical Review	Rhiannon Fisher
Senior Review	Michael Teal
Administrative Support	Liz Yildiz, Environmental Group Administrator

Acknowledgements

We respectfully acknowledge that the Study Area is located in the traditional territory of multiple Indigenous groups which include the Mississaugas of the Credit First Nation and Six Nations First Nation (the Haudenosaunee).

Executive Summary

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

Golder Associates Ltd. (“Golder”) was retained by Dufferin Aggregates, a division of CRH Canada Group Inc. (CRH), to conduct a Stage 1 and 2 Archaeological Assessment for the proposed Milton Quarry East Extension (the Study Area) in support of an application to expand the Milton Quarry located at 9410 Dublin Line, Milton. The Study Area is approximately 30.24 hectares (ha) of former agricultural lands overgrown with well-established mature grassland, located adjacent to the northern boundary of the existing Milton Quarry within Lots 11 and 12, Concession 1, former Esquesing Township, Halton County, now the Town of Halton Hills, Regional Municipality of Halton (Map 1). The Stage 1 and 2 assessment was conducted as part of the aggregate pit licensing process, as outlined in Section 2.3 of the Provincial Standards under the *Aggregate Resources Act, R.S.O. 1990, c.A.8* (Government of Ontario 1990a). The assessment was also conducted as part of land use approvals required under the *Niagara Escarpment Planning and Development Act R.S.O. 1990, c.N.2.* and the *Planning Act R.S.O. 1990, c.P.13* (Government of Ontario 1990c and 1990d).

The Stage 1 Archaeological Assessment determined that the Study Area exhibited potential for both pre-contact Indigenous and historical Euro-Canadian archaeological resources, based on the presence of three registered archaeological sites within 300 m of the Study Area, soils used for cultivation and pasture, and the fact that the Study Area is located in an area of Esquesing Township that has a history of Euro-Canadian occupation dating back to the mid-19th century. As a result, it was determined that a Stage 2 Archaeological Assessment would be required.

The Stage 2 Archaeological Assessment of the Study Area consisted of a combination of pedestrian and shovel test pit survey at 5 m intervals, which resulted in the identification of three artifact producing locations. Location 1 consists of a single, non-diagnostic, pre-contact Indigenous artifact. Location 2 (AjGx-306) consists of 250 historical Euro-Canadian artifacts recovered from an area measuring approximately 70 m by 75 m. Location 3 consists of a single, non-diagnostic, pre-contact Indigenous artifact.

Based on these findings, it was concluded that Locations 1 and 3 do not have further cultural heritage value or interest (CHVI) as they do not meet the criteria identified in Section 2.2 and Table 3.2, of the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) for determining the need to compete Stage 3 Archaeological Assessment. Location 2 (AjGx-306) was concluded to have further CHVI, as it is associated with at least 20 artifacts that date the site to before 1900, meeting the criteria identified in Section 2.2, Standard 1c and Table 3.2 of the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) for requiring Stage 3 Archaeological Assessment.

The above conclusions form the basis for the following recommendations:

1) Location 1 and Location 3 have been sufficiently assessed and documented, and no further archaeological assessment is recommended.

2) Location 2 (AjGx-306) should be subject to Stage 3 Archaeological Assessment prior to any intrusive activity that may disturb or destruct the site. Given that Location 2 consists of three artifact concentrations within a 70m by 75 m area, the excavation of test units will follow the Stage 3 strategy for large, plough disturbed,

sites. Excavation grids will be placed over the three artifact concentrations with each grid consisting of one-metre square test units spaced at 5 m intervals (*Section 3.2.3, Table 3.1, Standard 5, Government of Ontario 2011*). Additional test units will be placed and excavated, amounting to 20% of each of the initial grid unit total, between the areas of concentration to document areas of lower concentration (*Section 3.2.3, Table 3.1, Standard 6, Government of Ontario 2011*). Further additional units amounting to 10% of the initial grid unit total will be placed on the periphery of the surface scatter to determine the site extent and examine the periphery (*Section 3.2.3, Table 3.1, Standard 7, Government of Ontario 2011*).

3) No further archaeological assessment is recommended for the remainder of the Study Area where no archaeological sites or resources were identified.

The Ontario Ministry of Heritage, Sport, Tourism and Culture Industries is asked to review the results and recommendations presented herein, accept this report into the Provincial Register of archaeological reports and issue a standard letter of compliance with the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licencing.

Study Limitations

Golder 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 Golder by CRH (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 Golder's express written consent. If the report was prepared to be included for a specific permit application process, then upon the reasonable request of the Client, Golder may authorize in writing the use of this report by the regulatory agency as an Approved User for the specific and identified purpose of the applicable permit review process. Any other use of this report by others is prohibited and is without responsibility to Golder. The report, all plans, data, drawings, and other documents as well as electronic media prepared by Golder are considered its professional work product and shall remain the copyright property of Golder, who authorizes only the Client and Approved Users to make copies of the report, but only in such quantities as are reasonably necessary for the use of the report by those parties. The Client and Approved Users may not give, lend, sell, or otherwise make available the report or any portion thereof to any other party without the express written permission of Golder. The Client acknowledges that electronic media is susceptible to unauthorized modification, deterioration, and incompatibility and therefore the Client cannot rely upon the electronic media versions of Golder'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, if any, comply with those identified in the Ministry of Heritage, Sport, Tourism and Culture Industries 2011 *Standards and Guidelines for Consultant Archaeologists*.

Table of Contents

TABLES

IMAGES

MAPS

APPENDICES

1.0 PROJECT CONTEXT

1.1 Development Context

Golder Associates Ltd. (“Golder”) was retained by Dufferin Aggregates, a division of CRH Canada Group Inc. (CRH), to conduct a Stage 1 and 2 Archaeological Assessment for a proposed extraction area of lands (the Study Area) in support of an application to expand the Milton Quarry located at 9410 Dublin Line, Milton. The Study Area is approximately 30.24 hectares (ha) of former agricultural lands overgrown with well-established mature grassland, located adjacent to the northern boundary of the existing Milton Quarry within Lots 11 and 12, Concession 1, former Esquesing Township, Halton County, now the Town of Halton Hills, Regional Municipality of Halton (Map 1). The Stage 1 and 2 assessment was conducted as part of the aggregate pit licensing process, as outlined in Section 2.3 of the Provincial Standards under the *Aggregate Resources Act, R.S.O. 1990, c.A.8* (Government of Ontario 1990a). The assessment was also conducted as part of land use approvals required under the *Niagara Escarpment Planning and Development Act R.S.O. 1990, c.N.2.* and the *Planning Act R.S.O. 1990, c.P.13* (Government of Ontario 1990c and 1990d).

The Stage 1 and 2 assessment was conducted under professional license P468, issued to Rhiannon Fisher of Golder by the Ontario Ministry of Heritage, Sport, Tourism, and Culture Industries (MHSTCI) (PIF# P468-0060-2020). All activities undertaken during the assessment followed the *Ontario Heritage Act* and the MHSTCIs (2011) *Standards and Guidelines for Consultant Archaeologists.* All fieldwork occurred between September 8 and October 2, 2020 and April 19 and 20, 2021. Permission to access the property to conduct all required archaeological fieldwork activities, including recovery of artifacts, was granted by Kevin Mitchell of CRH.

1.2 Objectives

The Stage 1 and 2 Archaeological Assessment were completed with the following objectives:

- To provide information about the Study Area’s geography, environment, cultural history, previous archaeological fieldwork and current land condition as a means to evaluate its archaeological potential.
- To document archaeological resources within the Study Area.
- To determine the need for further assessment and/or mitigation of development impacts for archaeological sites identified.
- Provide recommendations for further archaeological work and future conservation.

1.3 Historical Context

The general culture history of southern Ontario based on Ellis and Ferris (1990), spanning the entire pre- and post-contact Period is summarised in Table 1, while Map 2 displays the pre-contact Indigenous culture history of southern Ontario.

Table 1: Overview of cultural chronology of southern Ontario.

Period		Time Period (circa)	Characteristics
Paleo	Early	9000 - 8400 BC	Gainey, Barnes, and Crowfield traditions; small bands; mobile hunters and gatherers and large territories; fluted projectiles.

Period		Time Period (circa)	Characteristics
	Late	8400 - 8000 BC	Holcomb, hi-Lo and Lanceolate biface traditions; continuing mobility; campsite/way-station sites; smaller territories are utilized; non-fluted projectiles.
Archaic	Early	8000 - 6000 BC	Side-notched, Corner-notched (Nettling, Thebes) and Bifurcate Base traditions; growing diversity of stone tool types; heavy woodworking tools appear (e.g., ground stone axes and chisels).
	Middle	6000 - 2500 BC	Stemmed (Kirk, Stanley/Neville), Brewerton side- and corner-notched traditions; reliance on local resources; populations increasing; more ritual activities; fully ground and polished tools; net-sinkers common; earliest copper tools.
	Late	2000 - 950 BC	Narrow Point (Lamoka), Broad Point (Genesee), and Small Point (Crawford Knoll) traditions: less mobility; use of fish-weirs; more formal cemeteries appear; stone pipes emerge; long-distance trade (marine shells and galena).
Woodland	Early	950 - 400 BC	Meadowood tradition; cord-roughened ceramics emerge; Meadowood cache blades and side-notched points; Bands of up to 35 people.
	Middle	400 BC - AD 500	Saugeen tradition; stamped ceramics appear; Saugeen projectile points; cobble spall scrapers; seasonal settlements and resource utilization; post holes, hearths, middens, cemeteries, and rectangular structures identified.
	Transitional	AD 550 - 900	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 75 people.
	Late (Early Iroquoian*)	AD 900 - 1300	Glen Meyer tradition; settled village-life based on agriculture; small villages (0.4 ha) with 75-200 people and 4-5 longhouses; semi-permanent settlements.
	Late (Middle Iroquoian*)	AD 1300 - 1400	Uren and Middleport traditions; classic longhouses emerge; larger villages (1.2 ha) with up to 600 people; more permanent settlements (30 years).
	Late (Late Iroquoian*)	AD 1400 - 1600	Pre-contact Neutral tradition; larger villages (1.7 ha); examples up to 5 ha with 2,500 people; extensive croplands; also, hamlets, cabins, camps, and cemeteries; potential tribal units; fur trade begins ca. 1580; European trade goods appear.

**Ontario Iroquoian was historically used as a temporal period marker and is not meant to imply assumptions regarding ethnicity*

1.3.1.1 Pre-Contact Indigenous Occupation of Southern Ontario

Previous archaeological assessments and research has demonstrated that the Town of Halton Hills was intensively occupied by pre-contact Indigenous communities from the Paleo period up to the time of contact. The following subsections outline the cultural or temporal periods recognized for southern Ontario more generally.

1.3.1.1.1 Paleo Period

The first 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, southern Ontario was finally ice free by 12,500 years ago.

The first human settlement can be traced back 11,000 years, when this area was settled by Indigenous groups that had been living south of the Great Lakes. The period of these early 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 6 ha. 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.

The most recent research suggests that population densities were very low during the Early Paleo Period, and, as such, archaeological examples of sites from this time are rare (Ellis and Deller 1990:54).

The Late Paleo Period (8400-8000 BC) has been less well researched, and is consequently more poorly understood. By this time the environment of southern 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, become extinct.

Like the Early Paleo peoples, Late Paleo peoples covered large territories as they moved about in response to seasonal resource fluctuations. On a province wide basis 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.

1.3.1.1.2 Archaic Period

During the Early Archaic Period (8000-6000 BC), the jack and red pine forests that characterized the Late Paleo-Indian environment were replaced by forests dominated by white pine with some associated deciduous trees (Ellis, Kenyon and Spence 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 (6000-2500 BC) 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, natural copper tools manufactured from a source located northwest of Lake Superior were being widely traded (Ellis, Kenyon and Spence 1990:66). By 3500 BC the local environment had stabilized in a near modern form (Ellis, Kenyon and Spence 1990:69).

During the Late Archaic (2500-950 BC) 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 the first true cemeteries appear. Before this time individuals were interred close to the location where they died. During the Late Archaic, if an individual died while his or her group happened to be at some distance from their group cemetery, the bones would be kept until they could be placed in the cemetery. Consequently, it is not unusual to find disarticulated skeletons, or even skeletons lacking minor elements such as fingers, toes or ribs, in Late Archaic burial pits.

The appearance of 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. Natural 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.

1.3.1.1.3 Woodland Period

The Early Woodland Period (940 to 400 BC) 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 are often friable when found archaeologically. 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 these pottery 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 life-ways 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 (300 BC to 500 AD) 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 hastily impressed designs covering the entire exterior surface and upper portion of the vessel interior. Consequently, even very small fragments of Middle Woodland vessels are easily identifiable.

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 AD 600 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 AD 500-1050), 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 (Zea mays) 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 southern Ontario. Researchers have suggested that a warming trend during this time may have encouraged the spread of maize into this part of the province, 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).

One such site, located on the Grand River near Cayuga, Ontario is the Grand Banks site (AfGx-3). As of 1997, 40 maize kernels and 29 cupules had been recovered at this site (Crawford et al. 1997). The earliest AMS radiocarbon assay run on maize from palaeosol II produced a date of approximately AD 500 (Crawford et al. 1997:116). This site is interpreted as a long-term basecamp that may have been used year-round or nearly year-round (Crawford and Smith 1996:785). This growing sedentism is seen as a departure from Middle Woodland hunting and gathering and may reflect growing investment in care of garden plots of maize (Smith 1997:15). The riverine location of Grand Banks (AfGx-3) may have also provided light, nutrient-rich soil for agriculture (Crawford et al. 1998). While Levanna projectile points are formal tools, Princess Point Complex toolkits are predominantly characterized by informal or expedient flake tools and ground stone and bone artifacts are rare (Ferris and Spence 1995:103; Shen 2000). At Grand Banks, experimental archaeology suggests that chert flakes were put to a variety of use tasks, from butchering to bone-working to wood-working to plant-working. Formal bifaces and projectile points had less evidence of usewear (Shen 2000). Local cherts appear to have been used, although Onondaga, albeit also a local resource, was preferred at Grand Banks (AfGx-3) (Shen 1997).

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. Categorized as "Early Ontario Iroquoian" (AD 900-1300), many archaeologists believe that it is possible to trace a direct line from the Iroquoian groups which later inhabited southern Ontario at the time of first European contact, back to these early villagers.

Village sites dating between AD 900 and 1300 , share many attributes with the historically reported Iroquoian sites, including the presence of longhouses and sometimes palisades. However, these early longhouses were actually not all that large, averaging only 12.4 m 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 2018). It seems likely that Early

Ontario Iroquoians 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 Ontario Iroquoian economy. However, it had not reached the level of importance it would in the Middle and Late Ontario Iroquoian Periods. There is ample evidence to suggest that more traditional resources continued to be exploited, and comprised a large part of the subsistence economy. Seasonally occupied special purpose sites relating to deer procurement, nut collection, and fishing activities, have all been identified. While beans are known to have been cultivated later in the Late Woodland Period, they have yet to be identified on Early Ontario Iroquoian sites.

The Middle Ontario Iroquoian Period (AD 1300-1400) 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. Moreover, villages, which averaged approximately 0.6 hectares in extent during the Early Ontario Iroquoian Period, now consistently range between one and two hectares.

House lengths also change dramatically, more than doubling to an average of 30 metres, while houses of up to 45 metres 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 AD 1300. Other possible explanations involve changes in economic and socio-political organization (Dodd et al. 1990:357). One suggestion is that during the Middle Ontario Iroquoian Period small villages were amalgamating to form larger communities for mutual defense (Dodd et al. 1990:357). If this was the case, the more successful military leaders may have been able to absorb some of the smaller family groups into their households, thereby requiring longer structures. 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 Ontario Iroquoian villages which had no palisades present (Dodd et al. 1990). More research is required to evaluate these competing interpretations.

The lay-out of houses within villages also changes dramatically by AD 1300. During the Early Ontario Iroquoian Period villages were haphazardly planned, with houses oriented in various directions. During the Middle Ontario Iroquoian Period villages are organized into two or more discrete groups of tightly spaced, parallel aligned, longhouses. It has been suggested that this change in village organization may indicate the initial development of the clans which were a characteristic of the historically known Iroquoian peoples (Dodd et al. 1990:358).

Initially at least, the Late Ontario Iroquoian Period (AD 1400-1650) continues many of the trends which have been documented for the proceeding century. For instance, between AD 1400 and 1450 house lengths continue to grow, reaching an average length of 62 metres. One longhouse excavated on a site southwest of Kitchener was an incredible 123 metres (Lennox and Fitzgerald 1990:444-445). After AD 1450 , house lengths begin to decrease, with houses dating between AD 1500 and 1580 averaging 30 metres in length.

Why house lengths decrease after AD 1450 is poorly understood, although it is believed that the even shorter houses witnessed on Historical Period sites can be at least partially attributed to the population reductions associated with the introduction of European diseases such as smallpox (Lennox and Fitzgerald 1990:405, 410).

Village size also continues to expand throughout the Late Ontario Iroquoian Period, with many of the larger villages showing signs of periodic expansions. The Late Middle Ontario Iroquoian Period and the first century of the Late Ontario Iroquoian 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. Late Ontario Iroquoian village expansion has been clearly documented at several sites throughout southwestern and south-central Ontario. The ongoing excavations at the Lawson site, a large Late Iroquoian 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).

During the late 1600s and early 1700s, the French explorers and missionaries reported a large population of Iroquoian peoples clustered around the western end of Lake Ontario. The area which was later to become Halton Region was known to have been occupied by ancestors of two different Late Ontario Iroquoian groups who evolved to become the historically known Neutral and Huron. For this reason the Late Ontario Iroquoian groups which occupied parts of south-central Ontario prior to the arrival of the French are often identified as "Prehistoric Neutral" and “Prehistoric Huron” (Lennox and Fitzgerald 1990; Smith 1990:283).

1.3.2 Post-Contact Indigenous Occupation of Southern Ontario

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

Following the introduction 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, ”written accounts of material life and livelihood, the correlation of historically recovered villages to their archaeological manifestions, 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). As a result, Indigenous peoples of southern Ontario have left behind archaeologically significant resources that 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 Geographical Township of Esquesing, Town of Halton Hills, Regional Municipality of Halton, Ontario. According to Euro-Canadian documentation, the Study Area first enters the historical record when the Mississauga First Nations entered into Treaty Number 13A, with William Claus, Superintendent-General of Indian Affairs on 2 August 1805 for 1,000 pounds on behalf of His Majesty King George III:

> *“Commencing at the eastern bank of the mouth of the River Etobicoke, being in the limit of the western boundary line of the Toronto Purchase, in the year 1787; then north twenty-two degrees west, six miles; thence south 38 degrees west, twenty-six miles more or less, until it intersects a line on the course north 45 degrees west, produced from the outlet of Burlington Bay; then along the said produced line, one mile more or less to the lands granted to Captain Brant; then north 45 degrees east, one mile and a half; then south 45 degrees east, three miles and a half more or less to Lake Ontario; then north easterly*

along the waters edge of Lake Ontario to the eastern bank of the River Etobicoke being the place of the beginning."

Reserving to Ourselves and Mississague Nation the sole right of the Fisheries in the Twelve Mile Creek, the Sixteen Mile Creek, the Etobicoke River, together with the flats or low grounds on said creeks and rivere which we have heretofore, cultivated and where have our camps and also the sole right of the Fishery in the River Credit with one mile on each side of said river.

This treaty comprises the fronts of the Townships of Toronto, Trafalgar and Nelson, except the 3,450 acres granted to Chief Brant in 1797.

(Morris 1943:22)

1.3.3 Euro-Canadian Settlement

1.3.3.1 Halton County

The County of Halton was named for William Halton who was engaged as the secretary of Francis Gore, who acted as the Lieutenant-Governor of Upper Canada (Halton Region 2015). The County was originally a part of the Gore District but in 1816 the Gore district became its own entity separate from the united counties of Halton and Wentworth. In 1853 the two counties separated and in 1857 the Towns of Oakville and Milton were added to County Council (Walker and Miles 1877). The County of Halton included the townships of Esquesing, Nassagaweya, Nelson, and Trafalgar. Surveys of Halton County were undertaken in 1806 and 1819, after Indigenous communities ceded parts of their lands. In the early maps of Halton County there was an area of 960 acres that was listed as First Nations land. This land was ceded to the Crown by the Mississauga's and immediately surveyed and made available for sale; purchased by Colonel William Chisolm in 1867 this land would become Oakville.

By 1881, Halton County was described as entirely settled in a provincial survey. Nearly all settlers had replaced the early log cabins with more substantial farmsteads. As many as 74% of the 1881 Census respondents reported dwellings constructed of brick, stone, or first-class frame (Ontario Agricultural Commission 1881: 178). Market facilities were reported to be excellent, particularly given the access throughout the county to long established markets. While the division of acreage ranged from township to township, generally, pasture lands represented the largest usage of land, followed by cultivation of hay, and fall wheat (Ontario Agricultural Commission 1881:185-186).

1.3.3.2 Esquesing Township

The Township of Esquesing gained its name from the Mississauga word *ishkwessin* meaning "land which lies at the end" (Armstrong 1930: 100). When the township was surveyed by Richard Bristol in 1819, it was done so according to the double front survey system. This system, which was commonly used between 1815 and 1829, produced a rectangular pattern of ten 100-acre lots (two deep and five wide) bounded on all four sides by road allowances. In Esquesing Township, the concession lines were oriented east to west and numbered south to north, while the side roads crossed the township running north to south.

Settlement of the township began shortly after the crown survey when families from the British Isles began arriving in the area in 1819. In just two years' time, the population had reached 424 and the first town meetings were being held in a tavern located on the Seventh Line (Walker and Miles 1877). When the York Road, which connected Toronto with Guelph, was constructed through the township in 1832, it appears to have brought an exception amount of growth to the area. By 1850, all lands in Esquesing Township had been settled and the

population had grown to 3,340 (Smith 1850). Three grist mills and 11 sawmills were also operating in the township at this time. By 1860, the population of Esquesing Township had nearly doubled, reaching 6,076 (Sutherland 1868). The pace of growth witnessed in the township between 1850 and 1860 is undoubtedly the result of the completion of the Sarnia-Toronto line of the Grand Trunk Railway in 1856, which passed through the northern half of the township. During the late 19th century, a general shift away from agricultural production toward industrial and commercial enterprises in urban centres caused the growth of Esquesing Township to plateau, with populations declining to 4,742 by 1881 (Ontario Agricultural Commission 1880).

In 1974, Esquesing Township was amalgamated with the Towns of Georgetown and Acton to form the Town of Halton Hills in the new Regional Municipality of Halton. Population growth since then has been modest. In 2006, the population numbered 55,289, while in 2016 it had grown to 61,161 (Statistics Canada 2006, 2016).

1.3.3.3 Study Area and Land Use History – Lots 11 and 12, Concession 1

Information on the 19th and 20th century history of the Study Area can be derived from several sources including maps, land registry records, Canada Census records, and aerial photographs. Land registry records for Lot 12, Concession 1 of the Township of Esquesing show the Study Area was first granted to Alexander McNaughton in 1852 (Instr No. 113.2). The 1858 map of Hastings County (Map 3) show that Lot 12 was severed into two parts with A. McNaughton owning the southern quarter and the remaining portion owned by Thos. Hume. The land registry records indicate that Alexander McNaughton owned the property until 1866 when he sold his land to Thomas Hume (Instr No. 492). No structures are shown on the map.

Alexander McNaughton could not be found in the 1861 Canada Census records. Thomas Hume, who owned the northern portion of the property, is listed as a 38-year-old farmer born in England and residing with his wife, Margaret (30), and their 4 children who range in age from 3 to 11. Thomas Hume appears to have owned land in multiple lots. The 1858 map (Map 3) shows a structure under the name Thos. Hume in Lot 12, Concession 4 so he may have lived on that property and only used his lands within the Study Area for farming. The census records list his residence as a one-story log house.

The 1877 map of the south half of Esquesing Township (Map 4) shows that Thos. Hume still owned the northern two thirds of the lot. The southern portion of the property is now owned by Wm. Clusholm. No structures are shown on the map and Hume's house remains visible in Lot 12, Concession 4 so he likely was still only using the Study Area for agriculture. William Clusholm first appears in the land registry records in 1875 as William Chisholm and is shown as purchasing the land from John White and wife (Instr No. 1845). He is recorded as giving his land to Thomas Chisholm in 1883 (Instr No. 3971). Thomas Hume is recorded as selling the land to a David whose last name is not legible in 1888 (Instr No. 5113). The remainder of the 19th century land registry records for Lot 12, Concession 1 are largely illegible.

William Clusholm or Chisholm could not be found in the 1881 Canada Census records, but two Thomas Chisholm appears in the 1888 Farmers and Business Directory for Hastings County (Union 1888) as residing on Lot 6, Concession 2 so the Chisholm's may have only used Lot 12, Concession 1 for farming. Two names appear on the directory for Lot 12, Concession 1, John Tragonna and John Hume who are both listed as a freeholders. Whether either freeholder had lived on their properties or used them solely for farming could not be determined.

A 1954 aerial photograph (Map 5) shows that the Study Area has not changed significantly since the 1950s, consisting of agricultural fields with no visible structures.

1.4 Archaeological Context

1.4.1 The Natural Environment

The Study Area is situated within the Flamborough Plains physiographic region, which is described as:

> *An isolated tract of shallow drift on the Niagara cuesta…It is an area of about 150 square miles, bounded on the northwest by the Galt Moraine, and on the south by the silts and sands of glacial Lake Warren. A few drumlins are found scattered over this limestone plain and swamps are plentiful. The limestone has been swept bare in places…what little overburden there is on the bedrock, apart from the drumlins, is either bouldery glacial till or sand and gravel…Good soil is not plentiful in the little region: the soil is either wet or stony and shallow.*
>
> Chapman & Putnam:129-130

The localized topography of the Study Area is generally flat to gently undulating. The Study Area is approximately 344 to 347 metres above sea level. The soils of the Study Area are comprised of Dumfries Loam and Farmington Loam-Rocky Phase (Map 6). Dumfries soils consist of coarse dark gray-brown loam or sandy loam used for cultivation by early settlers, although most acreages have now been retired to permanent pasture (Gillespie et al. 1971). Farmington soils are commonly found on level limestone plains that extend out from the escarpment and consist of dark grayish brown granular loam. These soils are primarily used for unimproved pasture, as the thin and droughty qualities of the soil are not suitable for cultivation. The Farmington rocky phase is most typical to woodland, as it is not suitable for grazing land (Gillespie et al. 1971). The closest potable water source is Middle Sixteen Mile Creek, which flows approximately 550 m northeast of the Study Area. Middle Sixteen Mile Creek is part of the Sixteen Mile Creek Watershed that spans 372 km^2 and drains into Lake Ontario at the Oakville waterfront (Oakvillegreen Conservation Authority 2020).

The bedrock deposits in the vicinity date to the Middle and Lower Silurian Periods and consist of the Lockport-Amabel Formation (Hewitt 1972). The Guelph-Lockport Dolomites form the cap of the Niagara Escarpment, outcropping from Niagara Falls though Dundas and Guelph up to the Bruce Peninsula. The Lockport Dolomites consists of three members: Gasport Dolimitic Limestone, Goat Island Dolomite and Eramosa Dolomite. Similarly, the Amabel Formation also consists of three members, including: a finer crystalline blocky dolomite named Lions Head Member, a fine to medium crystalline dolomite named Wiarton Member, and a brown, thin-bedded fine crystalline dolomite named Eramosa Member (Hewitt 1972).

The Study Area lies within the Mixed-wood Plains ecozone of Ontario (The Canadian Atlas Online 2015). Although largely altered by recent human activity, this ecozone once supported a wide variety of deciduous trees, such as various species of ash, birch, chestnut, hickory, oak, and walnut, as well as a variety of birds and small to large land mammals, such as raccoon, red fox, white tailed deer, and black bear.

1.4.2 Previous Archaeological Work

For an inventory of archaeological resources to be compiled, the registered archaeological site records kept by the MHSTCI were consulted. In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database maintained by the MHSTCI. This database contains archaeological sites registered according to the Borden system. Under the Borden system, Canada is divided into grid blocks based on latitude and longitude. A Borden block is approximately 13 km east to west and approximately 18.5 km north

to south. Each Borden block is referenced by a four-letter designator and sites within a block are numbered sequentially as they are found. The Study Area is located within Borden block *AjGx.*

Table 2 lists 12 archaeological sites registered in the OASD within a 1 km radius of the Study Area (MHSTCI 2020a). Three of these sites are within 300 m of the Study Area.

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

Borden Number	Site Name	Cultural Affiliation	Site Type
AjGx-89	Milton Quarry Findspot 4	Pre-Contact	findspot
AjGx-88	Milton Quarry Findspot 3	Pre-Contact	findspot
AjGx-87*	Milton Quarry Findspot 2	Pre-Contact	findspot
AjGx-86*	Milton Quarry Findspot 1	Pre-Contact	findspot
AjGx-85*	St. Helena	Post-Contact, Woodland, Late	cabin, longhouse, midden
AjGx-73	Duff Estates #2	Pre-Contact	scatter
AjGx-72	Duff Estates #1	Pre-Contact	findspot
AjGx-37	Ritterspack		
AjGx-35	Maple Ridge Farm		
AjGx-26	Glengate Farms		
AjGx-25	McCallum		
AjGx-23	Dupras		

*Site located within 300 m of the Study Area.

Three archaeological assessments have taken place within 50 m of the Study Area.

In 1998, the London Museum of Archaeology (LMA) conducted a Stage 2 Archaeological Assessment of lands to be potentially impacted within the Milton Quarry expansion area, immediately north-northwest of the current Study Area. The study area consisted of an approximately 132 ha tract of land near Speyside in Halton County and was located on both sides of Townline Road. A substantial amount of the study area was over-grown former agricultural fields, with smaller amounts of pasture, woodlot, reforested areas, and areas of previous disturbance. Five pre-contact Indigenous sites were identified during the assessment, the St. Helena Site (AjGx-85) and four other find spots; AjGx-86, AjGx-87, AjGx-88, and AjGx-89. The four find spots were determined to have no cultural heritage value or interest and did not require any further assessment. The St. Helena Site (AjGx-85) spanned an 80 m by 40 m area and was located within 100 m of the current Study Area. A total of 67 pre-contact Indigenous artifacts were recovered during the controlled surface collection of the site, including 33 pieces of lithic debitage, 31 pottery sherds, one ground stone tool, and two faunal items. The St. Helena site was determined to have further cultural heritage value or interest and required Stage 3 Archaeological Assessment (LMA 1998).

The Stage 3 Archaeological Assessment for the St. Helena Site (AjGx-85) involved the surface collection of an additional 17 artifacts and the excavation of 34 test units across the site, yielding a total of 228 artifacts. The Stage 3 artifact assemblage consisted of 127 pieces of lithic debitage, 83 pottery sherds (49 body sherds and 34 fragmentary sherds), 13 bone fragments, seven fragmentary rim sherds, six neck sherds, two celts, and single examples of a hammer/anvil stone, projectile point, drill, scraper, pipe stem, and juvenile ceramic sherd. Due to the relatively minimal number of artifacts present within the plough zone and lack of evidence for basal midden layers below the topsoil, it was determined that there were no true middens on the site. The site was

recommended for Stage 4 mitigation that proceeded directly to mechanical topsoil stripping to observe and record sub-surface cultural features and post moulds (LMA 1998).

The Stage 4 mitigation of the St. Helena Site (AjGx-85) produced a total of 1,406 pre-contact Indigenous artifacts and was interpreted as a special purpose agricultural cabin site dating to the Late Woodland period. The remains of two longhouses, two middens, and one semi-subterranean sweat lodge were uncovered during the Stage 4 mitigation (MHSTCI 2020b).

In 1999, a supplemental Stage 2 Archaeological Assessment was conducted by the LMA to assess an additional 0.8 ha of lands. These additional lands were located adjacent to the lands previously assessed by the Museum in 1998, specifically at the southern extent of the study area east of Townline Road. The lands consisted of four small parcels that each contained a residential property and wooded area. No archaeological resources were found during the supplemental Stage 2 assessment (LMA 1999).

To the best of our knowledge, no additional archaeological assessments have been performed within a 50 m radius of the Study Area.

Information concerning specific site locations is protected by provincial policy and is not fully subject to the *Freedom of Information Act*. The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to all media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MHSTCI will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

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 MHSTCI'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 MHSTCI 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 criteria outlined above, the Study Area was determined to have archaeological potential for both pre-contact Indigenous and historical Euro-Canadian sites. This determination is based on the presence of three registered archaeological sites within 300 m of the Study Area, soils used for cultivation and pasture, as well as the fact that the Study Area is located in an area of Esquesing Township that has a history of Euro-Canadian occupation dating back to the mid-19th century.

2.0 METHODOLOGY

The Stage 1 and 2 Archaeological Assessment of the Study Area was conducted over ten days between September 8 and October 2, 2020 and April 19 and 20, 2021 under archaeological consulting license P468, issued to Rhiannon Fisher of Golder. Golder archaeological supervisors Rebecca Parry (P1013), Connor Schmid (R1119) Lafe Meicenheimer (P457) and Martha Tildesley (P399) acted as the licensed field supervisors during the Stage 2 field survey. The Stage 1 and 2 Archaeological Assessment results and photographic image locations are provided on Map 7.

The weather during the assessment was variable (see Table 3). At no time were the conditions detrimental to the observation or recovery of archaeological material.

Table 3: Weather and Licensed Supervisor during the Stage 1 and 2 Assessment.

Date	Temperature	Comments	Licensed Archaeological Supervisor
September 8, 2020	15°C	Overcast	Lafe Meicenheimer
September 9, 2020	14°-20°C	Overcast, occasional drizzle	Rebecca Parry
September 10, 2020	18°-23°C	Overcast/Partly Cloudy	Rebecca Parry
September 11, 2020	11°-19°C	Partly Cloudy/Sunny	Rebecca Parry
September 14, 2020	12°-18°C	Mostly Sunny	Rebecca Parry
September 15, 2020	6°-20°C	Mostly Sunny	Rebecca Parry
October 1, 2020	15°C	Overcast	Connor Schmid
October 2, 2020	14°C	Overcast, occasional drizzle	Connor Schmid
April 19, 2021	15°C	Partly Cloudy/Sunny	Martha Tildesley
April 20, 2021	5°C	Overcast, occasional drizzle	Martha Tildesley

All activities undertaken during the assessment were in compliance with the *Ontario Heritage Act* (Government of Ontario 1990b) and the *Standards and Guidelines for Consultant Archaeologists* (Governement of Ontario 2011).

All GPS points were recorded with a Trimble Nomad GPS unit using its internal receiver, achieving a minimal accuracy of 3 m.

2.1 Existing Conditions

The Study Area is comprised of 30.24 ha of land, of which 16.63 ha was ploughed and 13.61 ha was mature overgrown grasslands (Image 1 to Image 3). The Study Area also contains several small areas of slope (Image 4 to Image 6) and two small permanently wet (wetland) areas (Image 7 and Image 8). The larger of the two wetland areas is located centrally and the smaller is located in the northernmost portion of the Study Area. In addition, two large rock piles were found within the Study Area (Image 9 and Image 10); one approximately 15 m by 10 m pile adjacent to the southeast edge of the ploughed area, and one approximately 20 m by 20 m pile adjacent to the northwest edge of the ploughed area (see Map 7) .

2.2 Field Survey Methods

Approximately 16.63 ha of the Study Area was ploughed, disked and sufficiently weathered and therefore assessed using the standard pedestrian survey method at 5 m intervals (Image 11 and Image 12). Areas subject to ploughing were sufficiently weathered prior to commencement of the assessment and the surface visibility was excellent (90-100%) and at no time were the conditions detrimental to the recovery of artifacts (Image 13 and

Image 14). When an artifact was encountered during the pedestrian survey, the initial artifact was marked, and survey intervals were reduced to 1 m to intensify within at least a 20 m radius of the find. Any additional artifacts identified while conducting the intensified survey were also marked. This process continued until the full extent of the surface scatter was defined (Image 15 to Image 17). To take advantage of good site conditions at the time, a controlled surface pick-up (CSP) that met all requirements outlined in Section 3.2.1 of the MHTSCI's *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) was conducted for locations, if applicable, as part of the Stage 1 and 2 assessment. Once the full extent of a location was defined, all of the artifacts identified in the scatter were retained for laboratory analysis and their positions documented with a Trimble Nomad GPS unit using its internal receiver, achieving a minimal accuracy of 3 m.

Areas that could not be ploughed, amounting to approximately 13.61 ha, were assessed through shovel test pit survey at 5 m intervals (Image 18 to Image 20 and Image 27 to Image 28). Test pits were at least 30 cm in diameter and excavated at least 5 cm into underlying natural subsoil. All soil was screened through 6 mm wire mesh to facilitate the recovery of artifacts. Open test pits were examined for changes in stratigraphy, cultural features, and evidence of fill, and backfilled to the original grade upon completion. No artifact-yielding test pits were encountered during the Stage 2 test pit survey.

A total of three archaeological locations were discovered during the Stage 1 and 2 assessment of the Study Area. All three locations were identified during the pedestrian survey and were subject to the intensification process described above. Relevant UTM coordinates for all locations are presented in the Supplementary Documentation, separate from this report. The Supplementary Documentation also contains a Tile showing the specific site locations.

3.0 RECORD OF FINDS

The Stage 1 and 2 Archaeological Assessment was conducted employing the methods described in Section 2.0. Map 7 shows the areas assessed and techniques employed, while Image 1 to Image 20 and Image 27 to Image 28 illustrate the Stage 1 and 2 survey conditions. The Stage 1 and 2 Archaeological Assessment resulted in the identification of three locations producing archaeological material, each of which is discussed below.

For a list of terms and definitions regarding the pre-contact Indigenous cultural material discussed in the present report, see Appendix A.

Artifacts recovered from the Stage 1 and 2 Archaeological Assessment are contained in one banker's box stored at Golder's London office at 309 Exeter Road, London, Ontario

Table 4 provides an inventory of the documentary record generated in the field, while artifact catalogues from each location may be found in Appendix B.

Table 4: Inventory of Documentary Record

Document Type	Current Location of Document	Additional Comments
Field Notes	Golder Office in London	16 pages from original field book stored in project folder and digitally in project file.
Hand Drawn Maps	Golder Office in London	Nine maps stored in project folder and digitally in project file.
Maps Provided by Client	Golder Office in London	One map stored in project folder and stored digitally in project file.
Digital Photographs	Golder Office in London	110 digital photos stored digitally in project file.

3.1 Stratigraphy and Disturbances

The stratigraphy encountered was largely consistent across the entire Study Area apart from one small area that exhibited fill soil capping.

The typical stratigraphic sequence consisted of moderately compacted dark-brown sandy loam topsoil followed by moderately compacted sandy-loam subsoil that varied from pale yellow to red-brown in colour (Image 21, Image 22 and Image 29). The occasional test pit exhibited a stratigraphic sequence of dark-brown sandy-loam topsoil over bedrock (Image 23). Test pits ranged from approximately 5 to 40 cm in depth. Soils tended to have a slightly higher clay content in areas of dense vegetation within the southern portion of the Study Area, and stratigraphy in these areas was characterized by dark-brown clay-loam topsoil followed by yellow brown or red-brown clay-loam subsoil (Image 24).

A small area of fill-capped test pits was encountered immediately adjacent to the bottom of a slope that parallels the southeast corner of the ploughed field (Image 25; Map 7). Test pits exhibited 20 cm of gravel fill on top of natural soils (Image 26).

3.2 Location 1

Location 1 is located within the northeast section of the ploughed field within the greater Study Area. A single isolated, non-diagnostic, pre-contact Indigenous artifact was recovered from Location 1; a primary thinning flake manufactured from Onondaga chert (Image 30).

Onondaga chert is a high-quality raw material found within the Onondaga Formation that outcrops along the north shore of Lake Erie west of the mouth of the Grand River as far west as Nanticoke, east of the mouth of the Grand River as far east as Fort Erie, and along the Onondaga Escarpment between Cayuga and Hagersville (Telford and Tarrant 1975). This material can also be recovered from secondary, glacial deposits across much of southwestern Ontario, east of Chatham (Eley and von Bitter 1989; Fox 2009:361-362).

3.3 Location 2 (AjGx-306)

Location 2 (AjGx-306) is located within the southwest portion of the ploughed field within the greater Study Area. The site was identified during pedestrian survey and subject to a subsequent CSP, which resulted in the recovery of 250 Euro-Canadian artifacts across an area measuring approximately 70 m north-south by 75 m east-west. Three artifact concentrations are apparent within the 70 m by 75 m area, with the densest concentration situated on the western half of the site and two smaller concentrations on the eastern half of the site.

3.3.1 Euro-Canadian Artifacts

The Euro-Canadian artifact assemblage from Location 2 (AjGx-306) includes: 152 food and beverage-related artifacts (60.80% of total assemblage), 65 artifacts with an indeterminate function (26.00% of total assemblage), 29 structural-related artifacts (11.60% of total assemblage) and four personal/societal-related artifacts (1.60% of total assemblage) (Image 31 to Image 39). Each artifact class is discussed in detail below in Section 4.2.

3.4 Location 3

Location 3 is in the northeast section of the ploughed field portion of the Study Area, approximately 140 m southeast of Location 1. A single isolated pre-contact Indigenous artifact was recovered from Location 3; a rough-stone tool fragment that appears to be a possibly celt preform manufactured from a basalt-like stone (Image 40). The tool measures 86.36 mm long, 43.56 mm wide, and 24.58 mm thick. It appears the tool was produced by pecking the stone into a rough shape, and that the final polishing and shaping of the tool was not finished.

4.0 ANALYSIS AND CONCLUSIONS

A Stage 1 and 2 Archaeological Assessment of the Study Area resulted in the identification of three artifact-producing locations, each of which is discussed below.

4.1 Location 1

As described above, Location 1 consists of a single piece of lithic debitage, manufactured from Onondaga chert. Onondaga chert is discussed above in Section 3.2. Lithic debitage is not a diagnostic artifact type, therefore occupational time periods and specific cultural affiliation cannot be determined for Location 1.

The isolated nature of the artifact suggests it likely relates to transient use of the area by Indigenous peoples during the pre-contact period.

Given the isolated nature of the find, Location 1 is considered to have no further CHVI as it does not meet the criteria identified in Section 2.2, Standards 1a or b of the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) for determining the need for Stage 3 site-specific assessment.

4.2 Location 2 (AjGx-306)

As described in Section 3.3, the artifact assemblage from Location 2 (AjGx-306) includes 250 Euro-Canadian artifacts. The assemblage is predominately food and beverage-related artifacts, followed by lesser amounts of artifacts with an indeterminate function, structural-related artifacts and personal/societal-related artifacts (Image 31 to Image 39). Each artifact class is discussed in detail below.

4.2.1 Food and Beverage

A total of 152 food and beverage-related artifacts were recovered from Location 2 (AjGx-306), all of which were ceramic sherds, including vitrified white earthenware (VWE), refined white earthenware (RWE), porcelain, Albany-slip coarse earthenware, and Rockinghamware. Table 5 provides a breakdown of the ceramic assemblage by ware type, while Table 6 provides a summary of decorative styles present on the ceramic tableware.

Table 5: Location 2 (AjGx-306) Ceramic Assemblage by Ware Type

Ware Type	Freq.	% of Total
Vitrified White Earthenware	129	51.60%
Coarse Earthenware	11	4.40%
Refined White Earthenware	6	2.40%
Porcelain	3	1.20%
Stoneware	2	0.80%
Rockinghamware	1	0.40%

Table 6: Location 2 (AjGx-306) Ceramic Assemblage by Decorative Style

Ceramic/Decorative Style	Freq.	% of Total
VWE, Plain/Undecorated	117	46.80%
VWE, Moulded	9	3.60%
VWE, Transfer Printed	2	0.80%
VWE, Industrial Slip	1	0.40%
Coarse Earthenware, Salt Glaze	10	4.00%
Coarse Earthenware, Albany Slip	1	0.40%
RWE, Plain/Undecorated	4	1.60%
RWE, Transfer Printed	2	0.80%
Porcelain, Plain/Undecorated	3	1.20%
Stoneware, Salt Glaze	2	0.80%
Rockinghamware	1	0.40%

White Earthenwares

Refined white earthenware 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 (Adams et al 1994; Miller 2000:10, 13). A total of six RWE sherds were recovered from Location 2 (AjGx-306), including four plain/undecorated sherds and two transfer-printed sherds (Image 31).

Vitrified white earthenware, also known as white granite, graniteware, white stone ironstone, or simply ironstone 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 (MACL 2015a). A total of 129 VWE sherds were recovered from Location 2 (AjGx-306), including 117 plain/undecorated sherds, nine moulded sherds, two transfer-printed sherds and a single industrial slip decorated sherd (Image 32, Image 33) Two sherds of VWE have partial maker's marks, though they are not intact enough to definitively associate them with a particular ceramics manufacturer.

Vitrified white earthenware is often decorated with raised moulded designs. The most popular and enduring of these was the "wheat" or Ceres, pattern, which in addition to other harvest or grain motifs, was popular from the 1860s to the turn of the 20th century (Sussman 1985). Other common moulded motifs include foliage, geometric, paneled/scalloped, classical, and ribbed. Broadly speaking, up until the 1870s, potters produced wares with detailed molding or sharp angles. After this period, the use of moulded motifs decreased or disappeared, and vessel lines became simpler (Wetherbee 1996:10). The nine moulded fragments recovered from Location 2 (AjGx-306) (Image 32) included two wheat patterns, one floral pattern, and six indeterminate patterns

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). 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 were common, while in the 1890s and later a wide variety of colours were in use (Adams *et al.* 1994:101). Transfer-printed wares recovered from Location 2 (AjGx-306) include both RWE and VWE sherds. The two RWE sherds are decorated with a brown transfer print (Image 31) while the two VWE sherds are decorated with a black transfer print (Image 32).

Industrial slip wares are produced by mechanized slip decorating introduced in the 18th century. This ware type is known by a number of other names, many referring to a specific type of decoration, rather than the decoration group as a whole (MACL 2015b; Sussman 1997). The one industrial slip sherd of VWE from Location 2 (AjGx-306) has a banded design (Image 33) Banded wares were decorated with horizontal bands of coloured slip applied in varying widths. Banding colours are predominantly muted earth tones including, black, green, brown, orange, yellow, grey, and pale blue. Banded patterns can be found on white earthenwares from about 1830 through the 20th century and occurred both as a primary decorative element and in conjunction with other design elements such as cabling or 'finger trailing' found on mocha ware after 1836 (Sussman 1997). Examples from the first half of the 19th century are fairly elaborate with multiple colours, while most banded wares from the last half of the 19th century tend to be plainer, often consisting of nothing but bands of blue slip (Adams *et al.* 1994:101).

Coarse Earthenware and Stoneware

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. A total of 11 coarse earthenware sherds were recovered from Location 2 (AjGx-306), 10 of which have salt glazing, while one sherd has a combination of salt glazing and Albany slip (Image 34) Salt glaze is a high-temperature glaze formed by the addition of salt into the kiln when it is at its highest temperature. The vaporized sodium combines with the silica on the surface of the ceramics to create a glossy, hard glaze with a characteristic 'orange peel' texture. Salt glazing has been around for hundreds of years and is therefore not a viable indicator of date (MACL 2015c). Albany slip is a varying brown slip originally created from alluvial clays in New York. It has since come to refer to any dark brown or black slip. Albany slip was invented in the early 19th century; however, it did not become widespread and popular until the mid- to late-19th century (MACL 2015c).

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. A total of two stoneware sherds were Location 2 (AjGx-306) (Image 34), both of which have a clear salt glaze exterior and a black slip glaze interior.

Porcelain and Rockinghamware

Porcelain is made from a mixture of china clay (kaolin) and china stone (petuntse). Porcelaneous ware was first made in China, hence its common name *china.* Chinese porcelain is less vitrified (and therefore softer) than its modern European counterpart, which was developed in Germany in the early 18th century. Porcelain is a highly vitrified pottery with a white, fine-grained body that is usually translucent, as distinguished from earthenware, which is porous, opaque, and coarser (MACL 2016). Though there was a large amount of porcelain produced in England and Europe as early as the 18th century, on North American archaeological sites, it is most often found in

post-1850 contexts (MACL 2016). The three porcelain sherds from Location 2 (AjGx-306) are undecorated (Image 35)

Rockingham glaze is an uneven brown glaze that was often combined with moulded decoration on cooking vessels, teapots, pitchers, and spittoons manufactured from coarse earthenware and stoneware (MACL 2015d). It was first produced by English potters after 1788, however it was not widespread in North America until potters began producing it here in the mid-19th century (Spargo 1926; Collard 1967). Rockingham-glazed vessels were manufactured from the mid-19th century into the early 20th century, with peak popularity during the 1890s (Burke 1991). A single Rockinghamware sherd was recovered from Location 2 (AjGx-306) (Image 35).

4.2.2 Indeterminate

A total of 65 artifacts recovered from Location 2 (AjGx-306) have an indeterminate function, including 62 glass shards and three metal artifacts. Glass artifacts consist of container or bottle fragments, including six container finishes and six container bases. The three metal artifacts include two fragments from indeterminate objects, and a single iron washer.

Artifacts from this group that provide relative dates for Location 2 (AjGx-306) include the six container finishes, one of the bottle bases, and some colours of glass.

Container finishes include one champagne finish, one double ring finish, one oil finish, one packer finish, one prescription finish, and one ground jar finish (Image 36)

The champagne finish is characterised by a flat band of glass wrapped around the outside circumference of the upper neck just below the top rim/lip of the bottle. Despite the name, this type of finish is found on a wide array of bottle types and has been in use since the early 19th century up until the present day (Lindsey 2020).

The double ring finish is characterised by two connected rings; a thicker, rounded ring along the lip of the bottle, and a thinner rounded or flattened band immediately below. This style of finish was popular on medicine and liquor bottles from the 1840s to the 1920s, with the most widespread use occurring between 1850 and 1910 (Lindsey 2020)

The oil finish is a one-part finish that is characterised by its height being about equal or greater than its width, with a gradually widening taper to the bottom of the finish. The oil finish was widely used on a variety of different bottles, with its period of greatest use being between 1850 and 1920, though some examples of this finish appear on bottles as early as 1830 (Lindsey 2020)

The packer finish is a one-part finish characterised by its even diameter from top to bottom and being taller than it is wide. The packer finish was used on a wide variety of bottles throughout the 19th and early 20th centuries (Lindsey 2020) and as such is less useful as a diagnostic artifact when compared to the rest of the container glass assemblage present at Location 2 (AjGx-306).

The prescription finish is characterised by a flared finish with a wide lip in which the upper surface of the finish tapers inwards towards the bore of the bottle. Shaping the finish in this manner allowed for precise measurement when pouring the contents of a bottle, allowing for the counting of drops. The prescription finish is most common on medicinal bottle made between the mid-1870s to the early-1920s, eventually dropping out of use as machine made bottles became more common (Lindsey 2020)

The ground jar finish is characterised by a flat upper surface that has been ground down to better seal the jar with some form of closure. This type of finish is most common on canning jars produced between the late 1850s to 1910 (Lindsey 2020).

Glass container bases can have several diagnostic features which allow them to be assigned a date, such as the location of seams, pontil marks, and maker's marks. Five of the six bottle bases from Location 2 (AjGx-306) are too fragmentary for such features to be visible, but one base does exhibit diagnostic features (Image 37) It has two mould seams along the sides, with a mould seam running along the heel of the bottle. The base is flat with a shallow concave depression in the centre, with no maker's marks, pontil scars or basal seams. These features are consistent with mould-blown bottles produced from a cup mould. A cup mold is a three-piece bottle mold, where the base plate of the mold had a shallow depression that "cupped" the base of the bottle. These types of molds are believed to have been in use as early as 1850, and continued to be used up until the invention and widespread use of automatic bottle making machines by the late 1910s (Lindsey, 2020)

Various colours of glass are represented in this assemblage, including: clear/colourless (n=19), dark olive green (n=16), light aqua (n=13), brown (n=5), light blue (n=4), light green (n=3), green (n=1) and manganese-tinted (n=1). Typically, the colour of bottle glass has limitations in providing dates of manufacture (Lindsey 2020; Jones and Sullivan 1989); however, some colours are useful. One study suggests that most manganese-tinted, or purple-coloured, glass typically dates between 1875 and 1920 (Lockhart 2006). During this period, manganese was often added during the manufacturing process to produce colourless glass. The manganese reacts when exposed to sunlight, turning the glass light purple in colour over time.

4.2.3 Structural

A total of 29 structural artifacts were recovered from Location 2 (AjGx-306), including 20 shards of glass and nine metal artifacts. The glass artifacts are all windowpane glass shards. The metal artifacts are nine machine-cut nails (Image 38)Machine-cut nails were cut from flat sheets of iron creating a nail that is of even thickness when viewed from the side, not tapered on all sides like hand-made nails, with a square and flat head. Invented about 1790, cut nails were in common use from the 1830s until the 1890s when they were largely replaced by wire nails (Adams et al. 1994: 94).

4.2.4 Personal/Societal

A total of four artifacts with a personal/societal function were recovered from Location 2 (AjGx-306), all of which are made from ceramic. The artifacts include a four-hole clothing button, a fragment of a porcelain doll's head, a white clay smoking pipe bowl and a white clay smoking pipe stem (Image 39) All four artifacts have some degree of diagnostic utility.

The button from Location 2 (AjGx-306) is a ceramic Prosser button. Prosser buttons are manufactured by a process called dust-pressing, which was invented and patented by Richard Prosser of Birmingham, England in 1840 (Darby 2017). The dust-pressing process involved mixing fine, dry clay and quartz or finely ground ceramic wasters with a small amount of moisture, pressing the mixture into moulds at high pressure, then firing the buttons at high temperature, producing very vitrified ceramic buttons (Sprague 2002).

Porcelain dolls, also known as bisque dolls, are made of bisque porcelain, an unglazed form of porcelain that has a matte texture which is considered more skin like. Manufacturing of bisque dolls began in the 1860s in France and Germany, continuing well into the early 20th century (History of Dolls 2020).

White ball clay smoking pipes were widely manufactured during the 19th century, falling out of use in the 1890s as briar pipes and cigarettes became more popular. Without maker's marks or distinctive decoration, they are of little diagnostic use (Adams et al. 1994). The smoking pipe stem from Location 2 (AjGx-306) is broken, with part of the maker's mark visible on the stem indicating that it was produced in Glasgow. Given the Glasgow mark, this pipe was likely manufactured by one of the five Scottish producers (Alexander Coghill, William Murray, William White, Duncan McDougall, and T. Davidson) who monopolized pipe exports during the 19th century from 1826 to 1864 (Bradley 2000:117).

Overall, the artifact assemblage from Location 2 (AjGx-306) consists of material that is typically associated with domestic occupation such as food and beverage-related items, glass containers of indeterminate function, structural artifacts, and personal/societal related items. In terms of age, the assemblage contains artifacts with datable attributes that span from the mid-19th century to early 20th century. Given that there are at least 20 artifacts that date Location 2 (AjGx-306) to before 1900, the site meets the criteria identified in Section 2.2, Standard 1c and Table 3.2 of the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) for having cultural heritage value or interest (CHVI) and is therefore required to undergo Stage 3 Archaeological Assessment prior to any intrusive activity that may disturb or destruct the site. The purpose of the Stage 3 assessment will be to determine the extent of the site, if it will require mitigation of prior to proposed impacts, and to provide appropriate recommendations for Stage 4 mitigation, if needed.

The roughly 70-year timespan represented by the artifact assemblage makes it difficult to tie Location 2 (AjGx-306) to a specific 19th century landowner. The portion of the Study Area where Location 2 (AjGx-306) is situated changed hands several times in the latter half of the 19th century. As the assemblage contains material that dates to the last quarter of the 19th century, it seems unlikely that the artifacts at Location 2 (AjGx-306) can be associated with Alexander McNaughton and his family, as land registry records show him selling the land back to Thomas Hume in 1866, giving Hume ownership of the entire lot. Hume eventually sold the land formerly owned by McNaughton to a William Clusholm/Chisholm, whose name appears in the land registry records in 1875, and on 1877 historical mapping. The land was later transferred to a Thomas Chisholm in 1888, presumably a relative of William. As Location 2 (AjGx-306) lies entirely within the lands formerly owned by the Chisholm family, it would suggest that the artifact assemblage recovered is associated with either Chisholm's ownership of the land. As mentioned, the broad date range makes it difficult to associate with a specific Chisholm – recovery of additional artifacts during a Stage 3 Archaeological Assessment would likely aid in narrowing down a more specific date of occupation.

Location 2 also meets criteria identified in Section 7.12 of the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) requiring it to be registered as an archaeological site. As such, it was registered with the MHSTCI and received the Borden number AjGx-306

4.3 Location 3

As described above, Location 3 consists of a single rough-stone artifact that appears to be a possible celt preform. Tools of this kind were used from the Archaic period up until the post-contact period, and as such are not useful for dating.

The isolated nature of the artifact from Location 3 suggest it is related to transient use of the area by Indigenous peoples that occurred during the pre-contact period.

Given the isolated nature of the find, Location 3 is considered to have no further CHVI as the site does not meet the criteria identified in Section 2.2, Standards 1a or b of the *Standards and Guidelines for Consultant* (Government of Ontario 2011) for determining the need for Stage 3 site-specific assessment.

5.0 RECOMMENDATIONS

The results of the Stage 1 and 2 Archaeological Assessment of the Study Area, and the analysis and conclusions presented in Section 4.0, provide the basis for the following recommendations:

1) Location 1 and Location 3 have been sufficiently assessed and documented, and no further archaeological assessment is recommended.

2) Location 2 (AjGx-306) should be subject to Stage 3 Archaeological Assessment prior to any intrusive activity that may disturb or destruct the site. Given that Location 2 consists of three artifact concentrations within a 70m by 75 m area, the excavation of test units will follow the Stage 3 strategy for large, plough disturbed, sites. Excavation grids will be placed over the three artifact concentrations with each grid consisting of one-metre square test units spaced at 5 m intervals (*Section 3.2.3, Table 3.1, Standard 5, Government of Ontario 2011*). Additional test units will be placed and excavated, amounting to 20% of each of the initial grid unit total, between the areas of concentration to document areas of lower concentration (*Section 3.2.3, Table 3.1, Standard 6, Government of Ontario 2011*). Further additional units amounting to 10% of the initial grid unit total will be placed on the periphery of the surface scatter to determine the site extent and examine the periphery (*Section 3.2.3, Table 3.1, Standard 7, Government of Ontario 2011*).).

3) No further archaeological assessment is recommended for the remainder of the Study Area where no archaeological sites or resources were identified.

The Ontario Ministry of Heritage, Sport, Tourism and Culture Industries is asked to review the results and recommendations presented herein, accept this report into the Provincial Register of archaeological reports and issue a standard letter of compliance with the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licencing.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Heritage, Sport, Tourism and Cultural Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act* (Government of Ontario 1990b). The report is prepared 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 Heritage, Sport, Tourism and Culture Industries, a letter will be issued by the Ministry stating that there are no further concerns with regards to alterations to archaeological sites by the proposed development.

It is an offence under Section 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alterations to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological reports referred to in Section 65.1 of the *Ontario Heritage Act* (Government of Ontario 1990b).

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* (Government of Ontario 1990b).

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 (Government of Ontario 2002). It is recommended that the Registrar of Cemeteries at the Ministry of Consumer Services is also immediately notified.

7.0 BIBLIOGRAPHY

Adams, Nick, Ian Kenyon, Dena Dorszenko

1994 *Field Manual for Avocational Archaeologists in Ontario.* Ontario Archaeological Society Inc., Archaeological Stewardship Project.

Armstrong, G. H.

1930 *The Origin and Meaning of Place Names in Canada*. The Macmillan Company, Toronto.

Bradley, Charles S.

2000 Smoking Pipes for the Archaeologist. In *Studies in Material Culture Research*, edited by Karlis Karklins. Society for Historical Archaeology, Anthropology Section, California University of Pennsylvania, California, Pennsylvania; pp. 104-133.

Burke, Charles Alexander

1991 *Nineteenth Century Ceramic Artifacts from a Seasonally Occupied Fishing Station on Saddle Island, Red Bay, Labrador.* Thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts. The School of Graduate Studies, Memorial University of Newfoundland, St. John's, Canada.

Canadian Atlas Online, The

2015 "Mixedwood Plains Ecozone." Electronic resource: http://www.canadiangeographic.ca/atlas/themes.aspx?id=mixedwood&sub=mixedwood_basics_ecozones, Last accessed December 2020.

Chapman, Lyman John and Donald F. Putnam

1984 *The Physiography of Southern Ontario.* 3rd ed. Ontario Geological Survey Special Volume 2. Ontario Ministry of Natural Resources, Toronto.

Collard, Elizabeth

1967 *Nineteenth-Century Pottery and Porcelain in Canada*. McGill University Press, Montreal.

Coysh, A.W. and Henrywood, R.W.

1982 A Century of Blue and White Printed Pottery 1780-1880. In *The Dictionary of Blue and White Printed Pottery 1780-1880*. Baron Publishing, Suffolk, England.

Crosby, Peter

1874 *Lovell's Gazetteer of British North America.* Montreal: J. Lovell

Darby, Susan
2017 *The Second Story: The Dust-Pressed Process: The Button Wars & The Tile Revolution.* Susan Darby.

Ellis, Chris J. and D. Brian Deller

1990 Paleo-Indians. In: The Archaeology of Southern Ontario to AD 1650, edited by Chris J. Ellis and Neal Ferris. Occasional Publication of the London Chapter, Ontario Archaeological Society, Number 5: 37-64.

Ellis, Chris, Ian T. Kenyon and Michael W. Spence

1990 The Archaic. In The Archaeology of Southern Ontario to AD 1650, edited by Chris J. Ellis and Neal Ferris, Occasional Publication of the London Chapter, Number 5. Ontario, pp. 65-124.

Eley, Betty and Peter von Bitter
1989 *Cherts of Southern Ontario*. Royal Ontario Museum, Toronto.

Ferris, Neal

2009 The Archaeology of Native-Lived Colonialism: Challenging History in the Great Lakes. University of Arizona Press, Tucson.

Ferris, Neal and Michael Spence

1995 The Woodland traditions in southern Ontario. Revista de Arqueología Americana 9:83-138.

Fisher, J.

2009 *Milton Operations Centre Town of Milton, Regional Municipality of Halton. Archaeological Stage 1: Background Research and Stage 2: Assessment. Final Report.* Report on file with the MTCS.

Fox, William

1990 The Middle Woodland to Late Woodland Transition. In: The Archaeology of Southern Ontario to AD 1650, edited by Chris J. Ellis and Neal Ferris. Occasional Publication of the London Chapter, Ontario Archaeological Society, Number 5: 171-188.

2009 "Ontario Cherts Revisited." In *Painting the Past with a Broad Brush: Papers in Honour of James Valliere Wright*, edited by David Keenlyside and Jean-Luc Pilon, pp. 353-370. Mercury Series, Archaeology Paper 170. Canadian Museum of Civilization, Gatineau.

Gillespie, J.E., R.E. Wicklund, and M.H. Miller

1971 Soils of Halton County, Report No. 43 of the Ontario Soil Survey

Government of Ontario

1990a *Aggregate Resources Act, R.S.O. 1990, c.A.8.* Electronic resource: https://www.ontario.ca/laws/statute/90a08. Accessed April 28, 2021.

1990b *The Ontario Heritage Act*. Electronic document: http://www.search.e-laws.gov.on.ca/en/isysquery/22cb421e-c632-498a-a9d8-0fe5ff80454f/1/doc/?search=browseStatutes&context=#hit1 Accessed January 29, 2013.

1990c *Niagara Escarpment Planning and Development Act, R.S.O., 1990, c.N.2.* Electronic resource: https://www.ontario.ca/laws/statute/90n02. Accessed April 28, 2021.

1990d *Planning Act, R.S.O. 1990, c.P.13.* Electronic resource: https://www.ontario.ca/laws/statute/90p13. Accessed April 28, 2021.

2002 *Funeral, Burial and Cremation Services Act. Electronic document:* http://www.search.e-laws.gov.on.ca/en/isysquery/4df81715-b552-4fa4-8098-d72607430cdb/1/doc/?search=browseStatutes&context=#hit1 Accessed January 29, 2013.

2011 *Standards and Guidelines for Consultant Archaeologists*. Ministry of Tourism, Culture & Sport, Toronto.

Hewitt, D.F.

1972 *Paleozoic Geology of Southern Ontario*. Geological Report No. 105, Ontario Division of Mines, Toronto.

History of Dolls

2020 *History of Porcelain Dolls.* Electronic resource: http://www.historyofdolls.com/doll-history/history-of-porcelain-dolls/

Lennox, P. A. and Fitzgerald, W.R.

1990 The Culture History and Archaeology of the Neutral Iroquoians. In: The Archaeology of Southern Ontario to AD 1650 edited by Chris J. Ellis and Neal Ferris. Occasional Publication of the London Chapter, Ontario Archaeological Society, Number 5: 405-456

Lindsey, Bill

2020 "Historic Glass Bottle Identification and Information Website." http://www.sha.org/bottle/index.htm, The Bureau of Land Management, Society for Historical Archaeology.

London Museum of Archaeology (LMA)

1998 *Report on the Stage 2 Archaeological Assessment of Lands to be Potentially Impacted in the Milton Quarry Project Area, Halton Region, and Stage 3 Assessment of the St. Helena Site AjGx-85.* Directed by Robert Pearce for the LMA. Report on file with the MHTSCI.

1999 *Addendum to: Report on the Stage 2 Archaeological Assessment of Lands to be Potentially Impacted in the Milton Quarry Project Area, Halton Region, and Stage 3 Assessment of the St. Helena Site AjGx-85.* Directed by Robert Pearce for the LMA. Report on file with the MHTSCI.

Maryland Archaeological Conservation Laboratory (MACL)

2015a [2002] "Post-Colonial Ceramics." Electronic resource: https://apps.jefpat.maryland.gov/diagnostic/Post-Colonial%20Ceramics/index-PostColonialCeramics.htm. Last accessed December 8, 2020

2015b [2002] "Dipped Earthenware." Electronic resource: https://apps.jefpat.maryland.gov/diagnostic/Post-Colonial%20Ceramics/DiptWares/index-dippedwares.htm Last accessed December 8, 2020

2015c [2002] "North American Stoneware." Electronic resource: https://apps.jefpat.maryland.gov/diagnostic/Post-Colonial%20Ceramics/NorthAmericanStoneware/index-NorthAmericanStoneware.html. Last accessed December 8, 2020.

2015d [2002] "Rockingham Ware." Electronic resource: https://apps.jefpat.maryland.gov/diagnostic/Post-Colonial%20Ceramics/Less%20Commonly%20Found/Rockingham/index-Rockingham.html. Last accessed December 8, 2020.

2016 [2002] "European Hard Paste Porcelain." Online resource: https://www.jefpat.org/dateable/Porcelain/PorcelainWareDescriptions/EuropeanHardPastePorcelain-intro.html. Last accessed December 8, 2020.

Martin, Scott

2004 Lower Great Lakes Region Maize and Enchainment in the First Millennium AD. Ontario Archaeology 77/78:135-159.

McEvoy, Henry

1869 *The Province of Ontario Gazetteer and Directory.* Ontario: Robertson & Cook.

Morris, J.L.

1943 Indians of Ontario. 1964 reprint. Department of Lands and Forests, Government of Ontario.

Oakvillegreen Conservation Authority

2020 *Sixteen Mile Creek: Heart of the Halton Region.* Electronic resource: https://oakvillegreen.org/discover-your-creek/sixteen-mile-creek-heart-of-the-halton-region/

Omagh Presbyterian Church

2018 Omagh Presbyterian Church – A unique Country Church in Milton Ontario http://omaghpresbyterianchurch.ca/

Ontario Agricultural Commission

1880 *Report of the Commissioners (and Appendices A to S)*. C. Blackett Robinson, Toronto.

Ontario Ministry of Heritage, Tourism, Sport, and Culture Industries (MHTSCI)

2020a Sites within a One Kilometre Radius of the Study Area Provided from the Ontario Archaeological Sites Database, Accessed 1 December 2020.

2020b *Site Record Form, AjGx-85.* Accessed from the MHTSCI Registered Sites Database, Accessed 4 December 2020.

Pearce, Robert J.

2018 Southwestern Ontario: The First 12,000 Years. Electronic Document: http://www.diggingontario.uwo.ca Accessed March 16, 2018.

Pope, J.H.

1877 Illustrated Historical Atlas of the County of Halton, Ontario. Walker & Miles. Toronto.

Ritchie, William

1971 A Typology and Nomenclature for New York Projectile Points. Revised Edition. New York State Museum and Science Service, Bulletin Number 384. The University of the State of New York, The State Education Department, Albany, New York.

Samford, Patricia

1997 “Response to a Market: Dating English Underglaze Transfer-Printed Wares.” *Historical Archaeology* 31(2):1-30.

Schmalz, Peter S.

1991 The Ojibwa of Southern Ontario. University of Toronto Press, Toronto.

Shen, Chen

1997 Towards a Comprehensive Understanding of the Lithic Production System of the Princess Point Complex, Southwestern Ontario. Ph.D. Dissertation, Graduate Department of Anthropology, University of Toronto. 2000 Tool use-patterning at the Grand Banks site of the Princess Point Complex, southwestern Ontario. Northeast Anthropology 60:63-87.

Smith, Wm. H.

1846 *Smith's Canadian Gazetteer: Comprising Statistical and General Information Respecting All Parts of the Upper Province or Canada West*. H. & W. Rowsell, Toronto.

1850 *Canada: Past, Present and Future, Being a Historical, Geographical, Geological and Statistical Account of Canada West*. Thomas Maclear, Toronto.

Smith, David G.

1990 Iroquoian Societies in Southern Ontario: Introduction and Historic Overview. In: The Archaeology of Southern Ontario to AD 1650, edited by Chris J. Ellis and Neal Ferris. Occasional Publication of the London Chapter, Ontario Archaeological Society, Number 5: 279-290. 1997 Recent Investigations of Late Woodland Occupations at Cootes Paradise, Ontario. Ontario Archaeology 63:4-16.

Spence, Michael, Robert Pihl and Carl Murphy

1990 Cultural Complexes of the Early and Middle Woodland periods. In The Archaeology of Southern Ontario to AD 1650, edited by Christopher Ellis and Neal Ferris, pp. 125-169. Occasional Papers of the London Chapter, Ontario Archaeological Society, No. 5. London, Ontario: Ontario Archaeological Society.

Sprague, Roderick

2002 "China or Prosser Button Identification and Dating." *Historical Archaeology,* Vol. 36, No. 2, pp. 111-127.

Statistics Canada

2006 *2006 Census: Census Trends. Selected Trend Data for Halton Hills.* Online resource: https://www12.statcan.gc.ca/census-recensement/2006/dp-pd/92-596/P1-2.cfm?Lang=eng&T=CSD&PRCODE=35&GeoCode=24015&GEOLVL=CSD&TID=0. Last accessed December 2020.

2016 *Cenus Profile, 2016 Census. Halton Hills, Town.* Online resource: https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?B1=All&Code1=3524015&Code2=35&Data=Count&Geo1=CSD&Geo2=PR&Lan

g=E&SearchPR=01&SearchText=Halton+Hills&SearchType=Begins&TABID=1. Last accessed December 2020

Stothers, David and Richard Yarnell

1977 An agricultural revolution in the lower Great Lakes. In Geobotany, edited by R. C. Romans, pp. 209-232. Plenum, New York.

Sussman, Lynne

1985 *The Wheat Pattern.* Parks Canada.

1997 "Mocha, Banded, Cat's Eye, and Other Factory-Made Slipware." *Studies in Northeast Historical Archaeology*, No. 1.

Sutherland, James

1868 *County of Halton Gazetteer and Directory for 1869-70*. A. Lawson & Co., Toronto.

Telford, P.G. and Tarrant, G.A.

1975 Paleozoic Geology of the Dunnville Area, Southern Ontario; Preliminary Map P. 988, Geological Series. NTS 1:50,000. Ontario Division of Mines.

Union Publishing Co.

1888 Farmers' and Business directory for counties of Brant, Haldimand, Halton, Lincoln, Welland & Wentworth.

Walker & Miles

1877 *Illustrated Historical Atlas of the County of Halton, Ontario*. Walker & Miles, Toronto.

Wetherbee, Jean

1996 White Ironstone; A Collector's Guide. Antique Trader Books, Dubuque, Iowa.

Williamson, Ronald F.

1990 The Early Iroquoian Period of Southern Ontario. In: The Archaeology of Southern Ontario to AD 1650, edited by Chris J. Ellis and Neal Ferris. Occasional Publication of the London Chapter, Ontario Archaeological Society, Number 5: 291-320.

8.0 IMAGES

Image 1: Study Area overview, ploughed field; facing southeast, September 8, 2020.

Image 2: Study Area overview, mature grassland; facing northeast, September 8, 2020.

Image 3: Study Area overview, mature grassland; facing northeast, September 10, 2020.

Image 4: Representative example of sloped area; facing southeast, September 9, 2020.

Image 5: Representative example of sloped area; facing northwest, September 11, 2020.

Image 6: Representative example of sloped area; facing north, October 1, 2020.

Image 7: Wetland area; facing south, September 8, 2020.

Image 8: Wetland area; facing northwest, September 14, 2020.

Image 9: Immovable rock pile adjacent to northwest edge of ploughed area; facing northwest, October 2, 2020.

Image 10: Immovable rock pile adjacent to southeast edge of ploughed area; facing southwest, September 11, 2020.

Image 11: Pedestrian survey at 5 m intervals; facing east, September 14, 2020.

Image 12: Pedestrian survey at 5 m intervals; facing north, October 2, 2020.

Image 13: A representative example of pedestrian survey field conditions; facing north, September 14, 2020.

Image 14: A representative example of pedestrian survey field conditions; facing southwest, September 14, 2020.

Image 15: Pedestrian survey, Location 1 intensification at 1 m intervals; facing north, September 14, 2020.

Image 16: Pedestrian survey, Location 2 intensification at 1 m intervals; facing southeast, September 14, 2020.

Image 17: Pedestrian survey, Location 3 intensification at 1 m intervals; facing northwest, September 14, 2020.

Image 18: Test pit survey at 5 m intervals; facing south, September 8, 2020.

Image 19: Test pit survey at 5 m intervals; facing south-southeast, September 10, 2020.

Image 20: Test pit survey at 5 m intervals; facing north, October 1, 2020.

Image 21: A representative example of typical test pit stratigraphy; facing south, September 10, 2020.

Image 22: A representative example of typical test pit stratigraphy; facing north, September 10, 2020.

Image 23: A representative example of test pit stratigraphy over bedrock; facing west, September 8, 2020.

Image 24: A representative example of typical test pit stratigraphy with higher clay content; facing west, September 15, 2020.

Image 25: Overview of area with fill capped test pits; facing east, September 15, 2020.

Image 26: A representative example of fill soil capped test pit stratigraphy; facing northeast, September 15, 2020.

Image 27: Test Pit Survey at 5 m intervals; facing southwest, April 19, 2021.

Image 28: Test Pit Survey at 5 m intervals; facing northwest, April 19, 2021.

Image 29: A representative example of typical test pit stratigraphy; facing north, April 20, 2021.

Image 30: Primary thinning flake (Onondaga chert) from Location 1

Image 31: A representative selection of refined white earthenware ceramics from Location 2 (AjGx-306). Left to right; plain/undecorated, brown transfer print

Image 32: A representative selection of vitrified white earthenware ceramics from Location 2 (AjGx-306). Top row: black transfer print (x2). Bottom row: moulded (x2)

Image 33: A representative selection of vitrified white earthenware ceramics from Location 2 (AjGx-306). Left to right: banded industrial slip, incomplete maker's mark

Image 34: A representative selection of coarse earthenware and stoneware from Location 2 (AjGx-306). Top row: salt-glazed coarse earthenware (x2). Bottom row (left to right): Albany-slip coarse earthenware, salt glazed stoneware.

Image 35: A selection of ceramics from Location 2 (AjGx-306). Left to right: Rockinghamware, undecorated porcelain.

Image 36: Glass container finishes from Location 2 (AjGx-306). Top row (L to R): double ring finish, champagne finish. Middle row (L to R): prescription finish, oil finish. Bottom row (L to R): packer finish, ground jar finish

Image 37: Cup moulded bottle base from Location 2 (AjGx-306)

Image 38: A representative selection of cut nails from Location 2 (AjGx-306)

Image 39: Personal/societal related items from Location 2 (AjGx-306). Top row (L to R): porcelain/bisque doll head, Prosser button. Bottom row (L to R): smoking pipe bowl, smoking pipe stem

Image 40: A rough ground stone tool (possibly a celt) from Location 3

9.0 MAPS

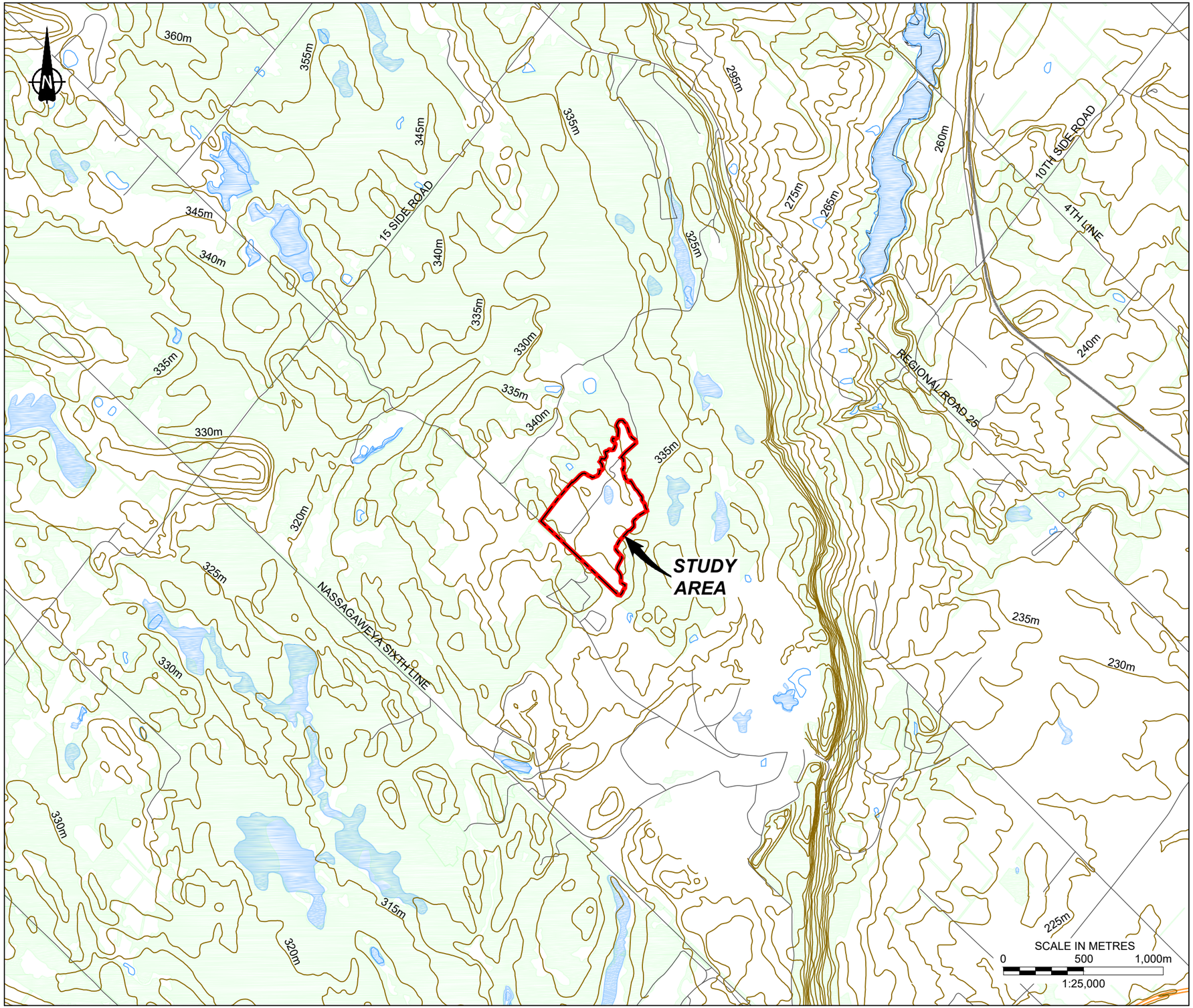
All maps follow on the succeeding pages.

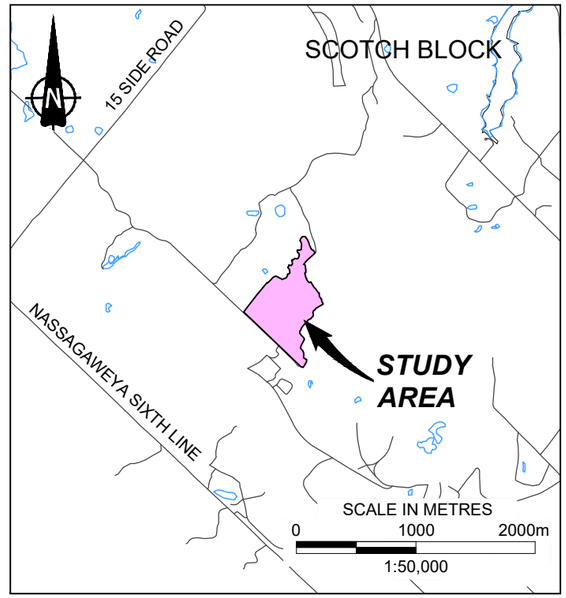
Client: CRH Canada Group Inc.

Original Format is Tabloid 279mm x 432mm

0 25mm

Drawing file: 20142012-R01001.dwg Apr 16, 2021 - 3:55pm





KEY PLAN

LEGEND

APPROXIMATE LOCATION OF STUDY AREA

REFERENCE

DRAWING BASED ON MNR LIO, OBTAINED 2020
PRODUCED BY GOLDER ASSOCIATES LTD UNDER
LICENCE FROM ONTARIO MINISTRY OF NATURAL
RESOURCES, © QUEENS PRINTER 2020;
STUDY AREA BOUNDARY PROVIDED BY
MHBC, APRIL 5 - 2021; AND
CANMAP STREETFILES V2008.4.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT

STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT
MILTON QUARRY EXPANSION
9410 DUBLIN LINE, MILTON

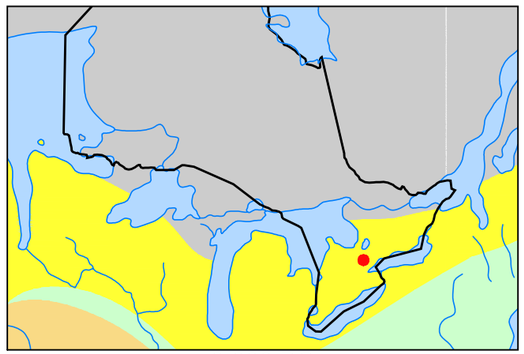
TITLE

LOCATION OF STUDY AREA

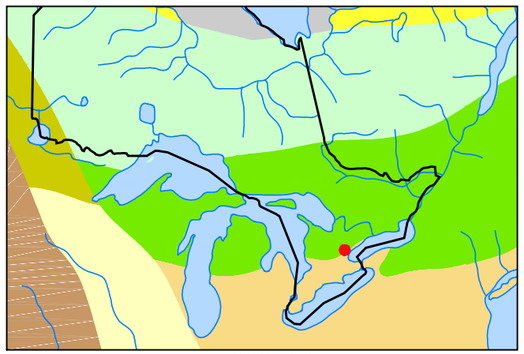
GOLDER
MEMBER OF WSP

PROJECT No.		20142012	FILE No.	20142012-R01001
			SCALE AS SHOWN	REV.
CADD	AMS/DCH	Apr 16/21		
CHECK				

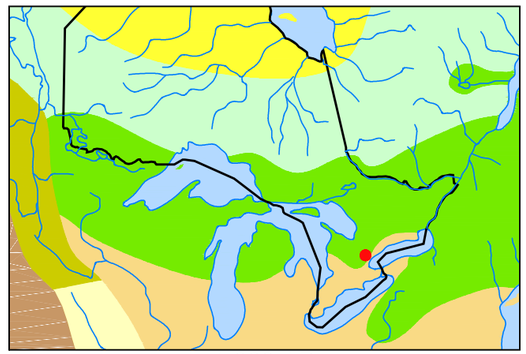
MAP 1



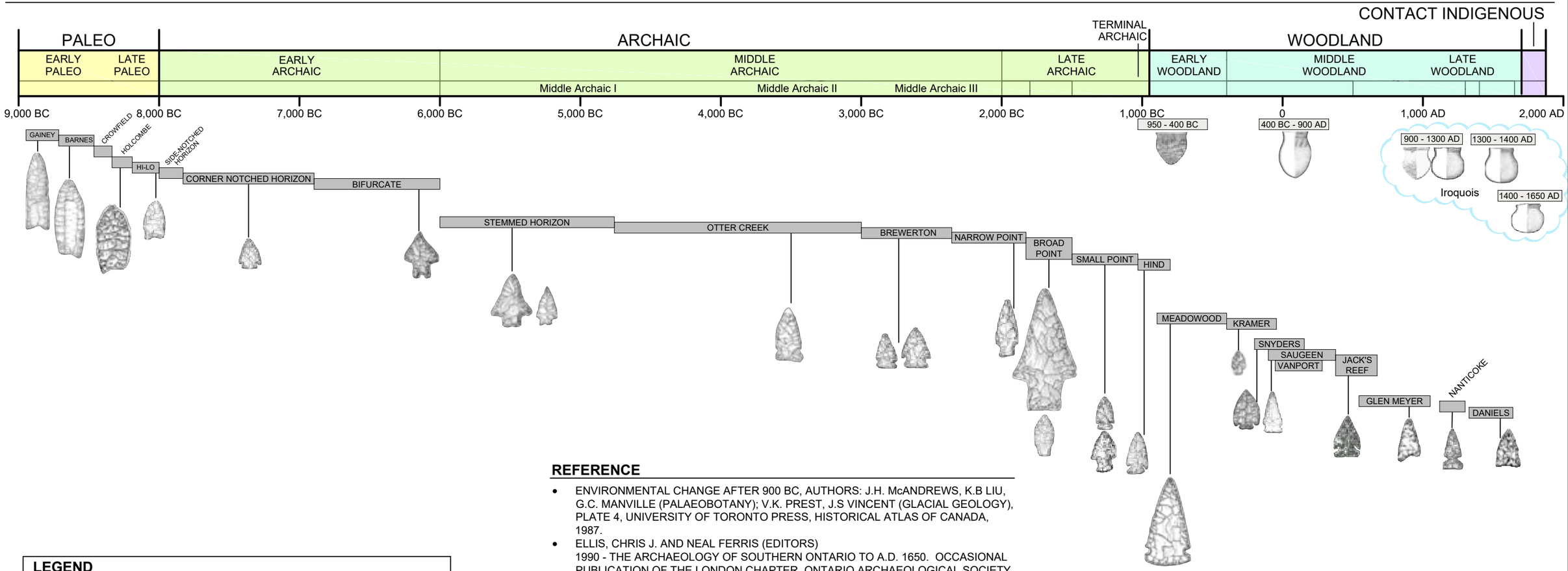
9,000 BC



5,000 BC



1,000 AD



LEGEND

- PROJECT AREA

VEGETATION COVERAGE:

- Tundra
- Boreal Forest
- Great Lakes-St. Lawrence Forest
- Decidous Forest
- Decidous Woodlands
- Grassland
- Litchen Woodland
- Parkland

REFERENCE

- ENVIRONMENTAL CHANGE AFTER 900 BC, AUTHORS: J.H. McANDREWS, K.B LIU, G.C. MANVILLE (PALAEOBOTANY); V.K. PREST, J.S VINCENT (GLACIAL GEOLOGY), PLATE 4, UNIVERSITY OF TORONTO PRESS, HISTORICAL ATLAS OF CANADA, 1987.
- ELLIS, CHRIS J. AND NEAL FERRIS (EDITORS) 1990 - THE ARCHAEOLOGY OF SOUTHERN ONTARIO TO A.D. 1650. OCCASIONAL PUBLICATION OF THE LONDON CHAPTER, ONTARIO ARCHAEOLOGICAL SOCIETY, NUMBER 5.
- ADAMS, NICK, IAN KENYON, DENA DOROSZENKO 1994 - FIELD MANUAL FOR AVOCATIONAL ARCHAEOLOGISTS IN ONTARIO. ONTARIO ARCHAEOLOGICAL SOCIETY INC., ARCHAEOLOGICAL STEWARDSHIP PROJECT.
- KENYON, I. - 1980 MEADOWOOD POINTS. KEWA 80-5.
- MURPHY, C. - 1988 SNYDERS POINTS. KEWA 88-3.
- KENYON, I. - 1979 SAUGEEN POINTS. KEWA 79-9.
- RITCHIE, WM. 1971. A TYPOLOGY AND NOMENCLATURE FOR NEW YORK PROJECTILE POINTS. ALBANY, NEW YORK: THE UNIVERSITY OF THE STATE OF NEW YORK, THE STATE EDUCATION DEPARTMENT.
- FOX, W.A. - 1982 GLEN MEYER TANGED-TRIANGULAR. KEWA 82-1.
- FOX, W.A. - 1981 NANTICOKE NOTCHED POINTS. KEWA 81-3.
- FOX, W.A. - 1981 DANIELS TRIANGULAR POINTS. KEWA 81-1.

PROJECT

STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT
MILTON QUARRY EXPANSION
9410 DUBLIN LINE, MILTON

TITLE

PRE-CONTACT INDIGENOUS CULTURE HISTORY OF SOUTHERN ONTARIO

GOLDER
MEMBER OF WSP

PROJECT No.			20142012	FILE No. 20142012–R01002
				SCALE AS SHOWN REV.
CADD	AMS/DCH	Apr 16/21		MAP 2
CHECK				

LEGEND

APPROXIMATE LOCATION OF STUDY AREA

REFERENCE

DRAWING BASED ON TREMAINE, GEORGE. 1858, TREMAINE'S MAP OF THE COUNTY OF HALTON. GEORGE TREMAINE, TORONTO.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT

STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT
MILTON QUARRY EXPANSION
9410 DUBLIN LINE, MILTON

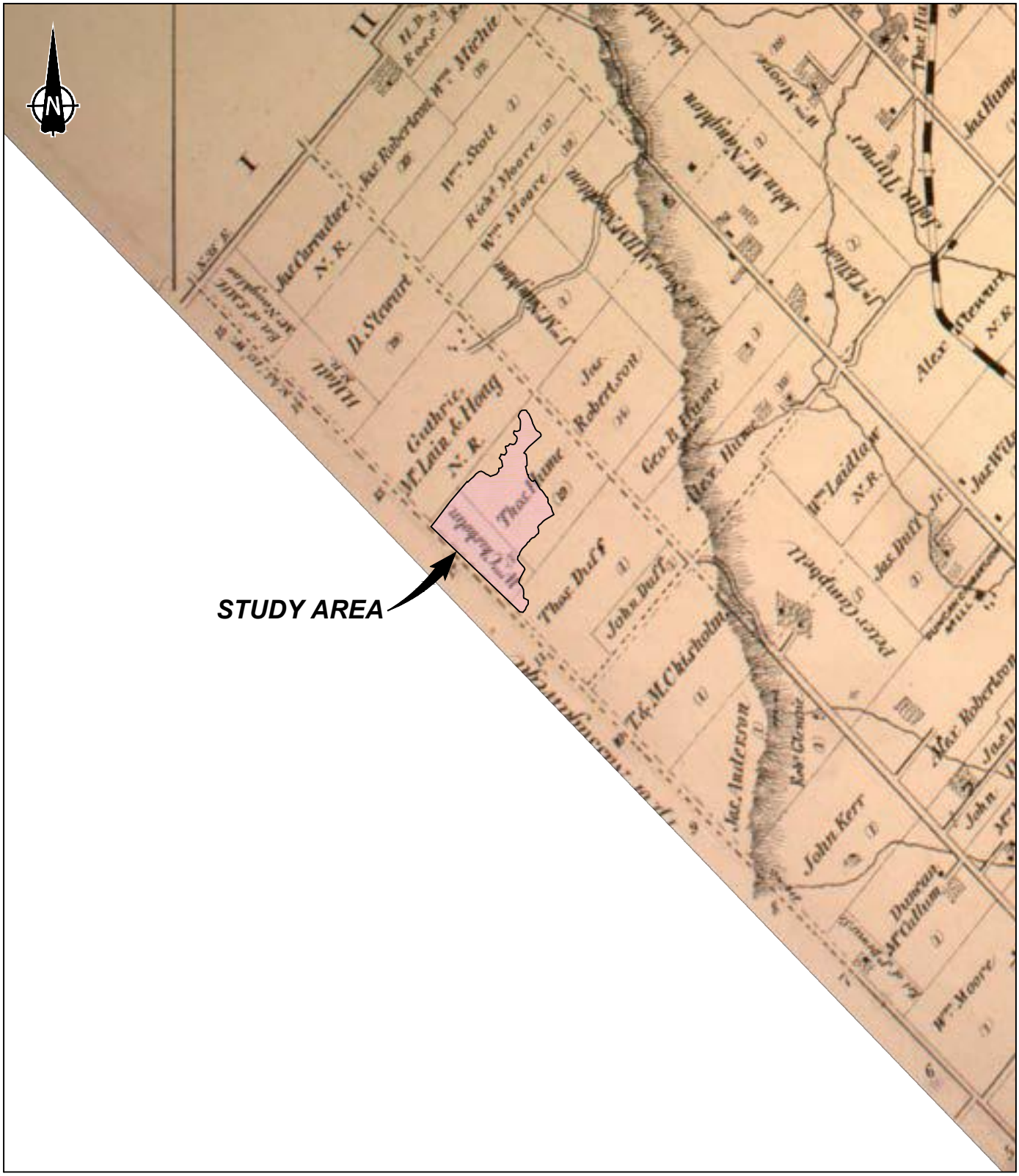
TITLE

A PORTION OF THE 1858 TREMAINE MAP OF THE COUNTY OF HALTON

GOLDER
MEMBER OF WSP

PROJECT No.		20142012	FILE No.	20142012-R01003	
			SCALE	NTS	REV.
CADD	AMS/DCH	Apr 16/21			
CHECK					

MAP 3



LEGEND

APPROXIMATE LOCATION OF STUDY AREA

REFERENCE

DRAWING BASED ON 1877 ILLUSTRATED HISTORICAL ATLAS OF THE COUNTY OF HALTON, ONTARIO. WALKER & MILES, TORONTO.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT

STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT
MILTON QUARRY EXPANSION
9410 DUBLIN LINE, MILTON

TITLE

A PORTION OF THE 1877 ILLUSTRATED HISTORICAL ATLAS OF THE COUNTY OF HALTON

GOLDER
MEMBER OF WSP

PROJECT No.		20142012	FILE No.	20142012-R01003
			SCALE	NTS REV.
CADD	AMS/DCH	Apr 16/21		
CHECK				

MAP 4

LEGEND

APPROXIMATE LOCATION OF STUDY AREA

REFERENCE

DRAWING BASED ON 1954 AERIAL PHOTOGRAPH OF HALTON COUNTY, PROVIDIED BY THE UNIVERSITY OF TORONTO MAP AND DATA LIBRARY.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

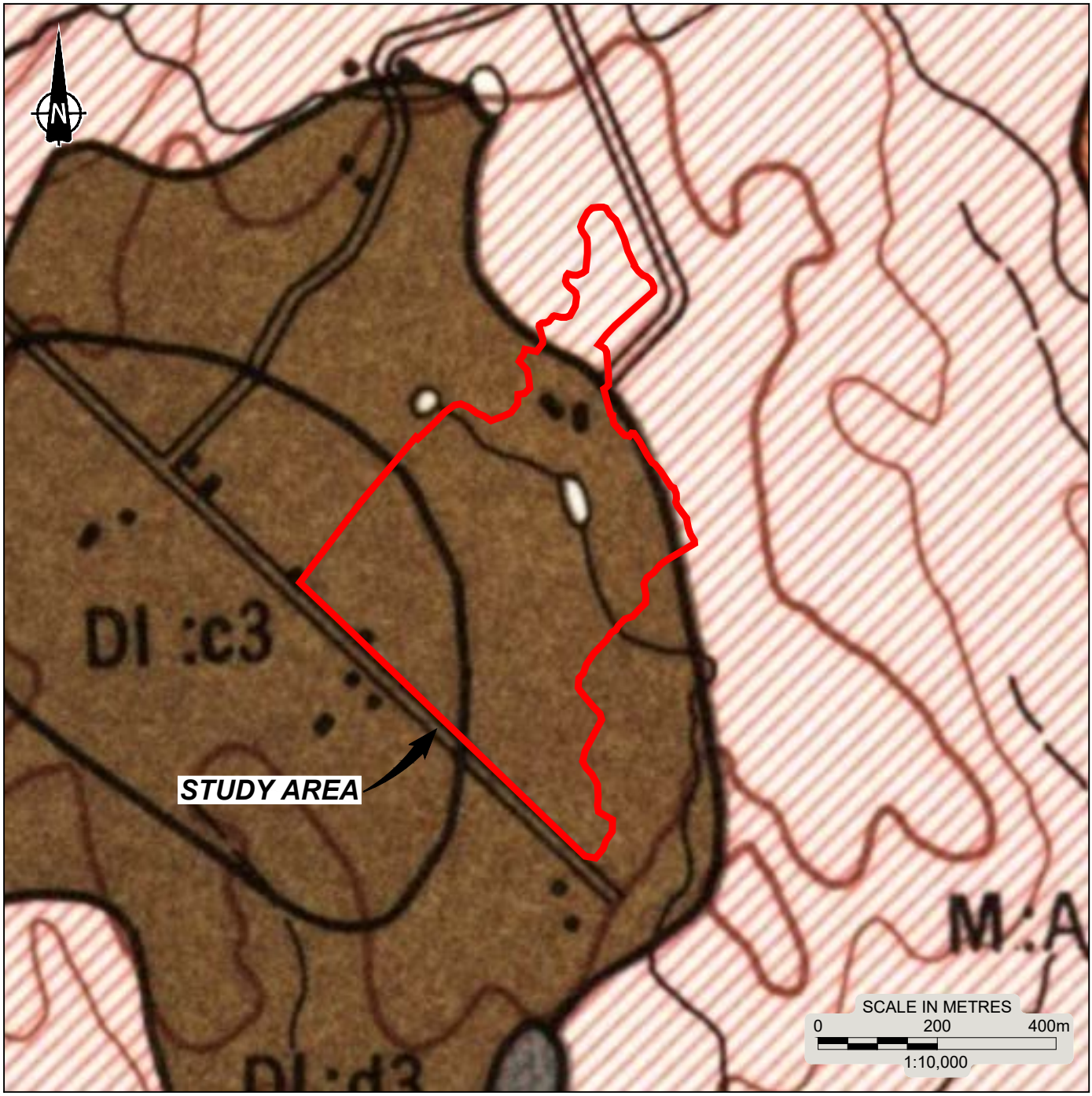
PROJECT
STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT
MILTON QUARRY EXPANSION
9410 DUBLIN LINE, MILTON

TITLE
AERIAL PHOTOGRAPH FROM 1954 SHOWING STUDY AREA AS AGRICULTURAL LANDS

GOLDER
MEMBER OF WSP

PROJECT No.		20142012	FILE No.	20142012-R01005
			SCALE AS SHOWN	REV.
CADD	AMS/DCH	Apr 16/21		
CHECK				

MAP 5



LEGEND

APPROXIMATE LOCATION OF STUDY AREA

SOIL TYPE

- DUMFRIES LOAM
- FARMINGTON LOAM - ROCKY PHASE
- MESISOL - SHALLOW PHASE

REFERENCE

DRAWING BASED ON GILLESPIE, J.E., R.E. WICKLUND, AND M.H. MILLER., 1971 SOILS OF HALTON COUNTY, REPORT NO. 43 OF THE ONTARIO SOIL SURVEY

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT

STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT
MILTON QUARRY EXPANSION
9410 DUBLIN LINE, MILTON

TITLE

LOCATION OF STUDY AREA ON 1971 SOIL SURVEY MAP OF HALTON COUNTY

GOLDER
MEMBER OF WSP

PROJECT No.		20142012	FILE No.	20142012-R01006
			SCALE AS SHOWN	REV.
CADD	AMS/DCH	Apr 16/21		
CHECK				

MAP 6

Client: CRH Canada Group Inc.

Original Format is Tabloid 279mm x 432mm

0 25mm

Apr 29, 2021 – 8:29am

Drawing file: 20142012-R01007.dwg

INSET A

LEGEND

- APPROXIMATE LOCATION OF STUDY AREA

STAGE 2 METHODS AND RESULTS:

- TEST PIT SURVEY AT 5m INTERVALS (2021)
- PEDESTRIAN SURVEY AT 5m INTERVALS (2020)
- TEST PIT SURVEY AT 5m INTERVALS (2020)
- TEST PIT SURVEY AT 5m INTERVALS; FILL SOILS ENCOUNTERED OVER NATURAL SOILS (2020)
- SLOPED; NO FURTHER ASSESSMENT REQUIRED
- PERMANENTLY WET; NO FURTHER ASSESSMENT REQUIRED
- ROCK PILE; NOT ASSESSED
- (1) PHOTOGRAPH LOCATION, VIEWING DIRECTION, AND PLATE NUMBER

REFERENCE

DRAWING BASED ON BING AERIAL IMAGERY AS OF DECEMBER 9th, 2020 (IMAGE DATE UNKNOWN); AND STUDY AREA BOUNDARY PROVIDED BY MHBC, APRIL 5 - 2021.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

BING IMAGERY USED FOR ILLUSTRATION PURPOSES ONLY AND NOT TO BE USED FOR MEASUREMENTS.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT

STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT
MILTON QUARRY EXPANSION
9410 DUBLIN LINE, MILTON

TITLE

STAGE 1 AND 2 METHODS AND RESULTS

GOLDER
MEMBER OF WSP

PROJECT No.			20142012	FILE No. 20142012-R01007
				SCALE AS SHOWN REV.
CADD	AMS/DCH	Apr 29/21		MAP 7
CHECK				

10.0 IMPORTANT INFORMATION AND LIMITATIONS OF THIS REPORT

Golder has prepared this report in a manner consistent with the level of care and skill ordinary 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 Golder by the Client. The factual data, interpretations and recommendations pertain to a specific project as described in this report and are not applicable to any other project or site location.

The information, recommendations and opinions expressed in this report are for the sole benefit of the Client. No other party may use or rely on this report or any portion thereof without Golder's express written consent. If the report was prepared to be included for a specific permit application process, then upon the reasonable request of the Client, Golder may authorize in writing the use of this report by the regulatory agency as an Approved User for the specific and identified purpose of the applicable permit review process. Any other use of this report by others is prohibited and is without responsibility to Golder. The report, all plans, data, drawings and other documents as well as electronic media prepared by Golder are considered its professional work product and shall remain the copyright property of Golder, who authorizes only the Client and Approved Users to make copies of the report, but only in such quantities as are reasonably necessary for the use of the report by those parties. The Client and Approved Users may not give, lend, sell, or otherwise make available the report or any portion thereof to any other party without the express written permission of Golder. The Client acknowledges that electronic media is susceptible to unauthorized modification, deterioration and incompatibility and therefore the Client cannot rely upon the electronic media versions of Golder'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 Heritage, Sport, Tourism and Culture Industries' *Standards and Guidelines for Consultants Archaeologists* (Government of Ontario 2011).

11.0 CLOSURE

We trust that this report meets your current needs. If you have any questions, or if we may be of further assistance, please contact the undersigned.

Golder Associates Ltd.

Rhiannon Fisher, M.Sc., RPA
Archaeologist

Michael Teal, M.A.
Associate, Senior Archaeologist

RP/CS/RF/MT/ly

https://golderassociates.sharepoint.com/sites/128611/project files/6 deliverables/stage 1-2 report/20142012-r01-reva (draft) crh milton quarry st. 1-2.docx

APPENDIX A

Glossary of Pre-Contact Indigenous Terms.

Debitage

Chipped lithic tools and debitage were found at the site (or sites) described in this report. Some of the more common chert types found on pre-contact Indigenous sites in southern Ontario are described below.

Kettle Point chert: a relatively high quality raw material found within the Upper Devonian age Kettle Point Formation that outcrops between Kettle Point and Ipperwash, on Lake Huron. Currently, Kettle Point occurs as submerged outcrops extending for approximately 1,350 metres into Lake Huron. Secondary deposits of Kettle Point chert have been reported in Essex County and in the Ausable River watershed (Eley and von Bitter 1989; Fox 2009:362).

Onondaga chert: a high quality raw material found within the Onondaga Formation that outcrops along the north shore of Lake Erie west of the mouth of the Grand River as far west as Nanticoke, east of the mouth of the Grand River as far east as Fort Erie, and along the Onondaga Escarpment between Cayuga and Hagersville (Telford and Tarrant 1975). This material can also be recovered from secondary, glacial deposits across much of southwestern Ontario, east of Chatham (Eley and von Bitter 1989; Fox 2009:361-362).

Selkirk chert: a moderate to relatively high quality raw material that occurs within the Dundee Formation; it outcrops along Sandusk Creek and its tributaries just west of the village of Selkirk (Telford and Tarrant 1975). The chert ranges in colour from mottled or banded grey to a predominantly brown colour, the latter of which being of relatively more vitreous fabric than the former. Its distribution as a secondary source material is similar to Onondaga chert and it is frequently encountered as far west as the Chatham area (Eley and von Bitter 1989; Fox 2009:362).

Non-chert: some materials other than chert were occasionally used for the manufacture of chipped tools, and consequently some pieces of non-chert debitage may occur on some sites. Materials in the non-chert category may include quartzite, quartz-like materials, schist and slate or shale.

All chert types discussed herein were identified visually by comparison to reference materials located in Golder's London offices. The flake assemblage was subject to morphological analysis following the classification scheme described by Lennox et al. (1986) and expanded upon by Fisher (1997), with the exception that no attempt was made to distinguish "primary" from "primary bipolar" flakes.

With reference to the analysis of lithic debitage, the following overview provides descriptions of the various types of cores and debitage commonly found on pre-contact Indigenous sites.

Cores: Pieces of stone (usually chert) from which flakes or blades have been removed. A core may be uni-facetted (flake removed from one surface or edge only) or multi-facetted (flakes removed from two or more surfaces or edges. A core may retain a segment of its exterior, weathered surface.

Primary Reduction Flakes: are by-products of the initial stages of the reduction of lithic material, they are derived from cores and are generally attributed to direct hard hammer percussion. Primary flakes may exhibit a large cortical striking platform. This platform may appear on an otherwise unmodified flake scar or a crushed flake margin. Where measureable the striking platform – ventral surface angle is approximately 90 degrees, usually unfacetted and large. Ventral surface attributes are usually well pronounced while the dorsal surface consists of 50-100% cortex, implying little or no modification of the core prior to the removal of the primary flake.

Primary Thinning Flake: a large, thick flake with an unprepared striking platform and few to no flake scars on its dorsal (exterior) surface. These flakes are typically thinner than Primary Reduction Flakes. Their platform is

usually large, flat or minimally facetted, and close to 90 degrees. A Large bulb of percussion is common on the ventral side. Primary Thinning Flakes are typically associated with the hard hammer percussion method from the initial stage of chipped stone tool production.

Biface Thinning Flake: a moderately thick to thin flake with a small platform that can be ground and/or faceted to some degree. The platform angle is usually acute or less than 90 degree. The dorsal side of the flake often has several shallow intersecting scars with no cortex material remaining. Biface Thinning Flakes are associated with the medial stage of biface reduction where a stone tool is thinned through the removal of flakes from opposing surfaces.

Retouch Flakes: small, thin flakes removed from the edge of a stone tool or larger flake through pressure flaking. These flakes tend to have a small, lipped platform that may exhibit crushing or part of a dulled bifacial edge. The dorsal surface typically displays flake scars from previous removals and lacks cortex material. They are associated with the final stage of chipped stone tool production when edges are sharpened and notches for hafting are created. They are also associated with maintenance activities where tools are re-sharpened and broken edges rejuvenated.

Shatter: usually consists of thick, blocky pieces of chert which lack striking platforms and ventral flake surface attributes. This category of debitage is thought to be a by-product of the initial stages of reduction through the uncontrolled breakage of the raw material along structural faults or irregularities. They commonly result from the use of horizontally and vertically flawed material, these flaws apparently a result of stresses occurring to the material while still within its primary deposit. A relatively high incidence of shatter is usually associated with the bipolar reduction strategy.

Flake Fragments: are broken flakes with no platform or proximal end. They cannot be convincingly linked to any particular lithic activity. As such, they have very little analytical value.

Micro flake: Very small broken flakes are classed as micro flakes, less than 3mm in size. These flakes are small and generally only recovered from floatation samples.

Stages of Reduction for Chert Bifaces (based on Fisher 1997:25-29)

There have been several different approaches to the definition of the stages of biface reduction, in both Eurasia (Andrefsky 2005:32) and North America (i.e. Callahan 1979: 30-31). Many Ontario-based researchers have adopted the classification scheme used by Fisher (1997: 25-29), which was based largely on Callahan (1979: 30-31). Fisher's definitions of Stage 1 (initial) through Stage 4 (final) bifaces take into consideration characteristics such as number and size of flakes removed, length and depth of flake scars, cross-section, length-width ratio, and edge configuration.

Stage 1: During this initial stage of biface reduction specimens are only roughly shaped. The biface cross-section is hexagonal, irregular to thick lenticular, and is not plano-convex at all (Callahan 1979:36). Biface thinning flake scars are deep, large and generally do not cross half of the biface width, leaving remnants of the original material surface. From a lateral view, the edge of the biface is jagged and highly irregular.

Stage 2: At this stage the biface is still relatively thick compared to its width, with more lateral flake removals crossing over half the biface width, leaving less of the original surface present. As well, thinning flakes are more numerous and smaller. The edge of the biface is still irregular, but less jagged.

Stage 3: This stage of reduction produces a biface with a lenticular cross-section, thinning flakes are shallow and are consistently greater than half the biface width. Also, there is a greater regularity to the edge, and bases may be formed, if only incipiently, on some specimens.

Stage 4: Stage 4 is represented by an almost finished projectile point with a relatively high width to thickness ratio, a relatively regular or even edge, some retouch, and a shaped base. Some items classed as Stage 4 specimens may have been finished projectile points. However, they are not so finely crafted as the definitive finished projectile points, perhaps due to material or knapping flaws, or skills of knappers.

Other Artifacts

The following glossary defines some of the terms for some of the formal and informal chipped lithic tools from the sites discussed in this report. All of the definitions are derived from reputable online sources such as www.archaeologywordsmith.com . and www.wvculture.org/shpo/glossary.html.

Artifact: “any object made, modified or used by people”.

Biface: “a stone tool which has been flaked on both surfaces or sides”; frequently made as roughed-out blanks or preforms intended for further reduction into finished tools such as projectile points or knives.

Burin: “from the French word *burin*, meaning cold chisel. A specialized engraving tool … that is cut or ground [or flaked] diagonally downward to form a diamond-shaped point at the tip… In its most characteristic form, the working tip is a narrow transverse edge formed by the intersection of two flake scars produced by striking at an angle to the main axis of the blade… Burins were used to carve or engrave softer organic materials such as antler, bone… or wood”.

Debitage: “the by-products or waste materials left over from the manufacture of stone tools”.

Diagnostic artifact: “an item that is indicative of a particular time period or cultural group”.

Drill: “a tool used to drill holes through or into wood, stone or bone”.

Ecofact: “nonartifactual evidence that has not been technologically altered but that has cultural relevance.”

Graver: “a stone tool manufactured from a flake by chipping (pressure-flaking) it on two edges at one end so as to leave a sharp point. Gravers were used to cut or score organic materials such as bone, shell, wood and antler; perhaps for punching leather, and other purposes”.

Lithic: “stone, or made of stone”.

Knife: a purposefully formed cutting tool.

Perforator: “a flint [chert] tool for piercing holes”, or, “a small chipped stone implement with a rather long and slender point and usually a broad base, supposed to have been used for drilling or boring holes”. Perforators are sometimes referred to as borers.

Projectile point: “a general term for points [usually stone] that were hafted to darts, spears or arrows”; commonly referred to as either spearhead or arrowhead.

Retouched flake: “a flake that has had small flakes removed to blunt, sharpen, refine the outline or prepare the edge of the tool”.

Scraper: a stone tool formed by chipping [flaking] the end or side of a flake which can then be used to scrape animal hides or wood.

Spokeshave: “a stone tool with a semi-circular concavity on the edge, used for smoothing spear or arrow shafts; a drawknife or small transverse plane for planning convex surfaces”.

Utilized flake: “a piece of stone debitage that is used for cutting or slicing. The edge may be damaged from use, but not deliberately”.

Wedge: “an object used to split, force open or keep open another object; a tool used to split wood”.

APPENDIX B

Complete Artifact Catalogues

Location 1														
Cat. #	CSP #	Material 1	Material 2	Function 1	Function 2	Object	Fragment	Attribute 1	Attribute 2	Manufacture	Alteration	# of Artifacts	# of Objects	Note
1	1	stone	chert: Onondaga	tools & equipment	debitage	primary thinning flake	complete			chipped		1		isolated find

Location 2 (AjGx-306)														
Cat. #	CSP #	Material 1	Material 2	Function 1	Function 2	Object	Fragment	Attribute 1	Attribute 2	Manufacture	Alteration	# of Artifacts	# of Objects	Note
1	93	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
2	80	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
3	83	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
4	54	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
5	15	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
6	60	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
7	19	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
8	27	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
9	27	ceramic	porcelain	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
10	5	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	moulded				1		wheat motif
11	12	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
12	69	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	moulded				1		indeterminate moulded decoration
13	56	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
14	3	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
15	44	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
16	18	ceramic	porcelain	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
17	8	ceramic	refined white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
18	14	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
19	10	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
20	24	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
21	24	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
22	114	ceramic	coarse red earthenware	food and beverage	container	container:indeterminate	body	brown salt glaze ext. exfoliated int.				1		
23	114	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				3		
24	73	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
25	4	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
26	51	ceramic	refined white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
27	25	metal	iron	structural	hardware	nail: common	complete			machine cut		1		
28	25	glass		indeterminate	container	container: indeterminate	finish: double ring		aqua: light			1		double ring bottle finish: 1840's to 1920's
29	96	metal	iron	structural	hardware	nail: common	complete			machine cut		2		
30	96	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	moulded				1		indeterminate moulded decoration
31	96	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
32	96	glass		indeterminate	container	container: indeterminate	base		aqua: light	mould blown		1		probably cup mould, mould blown bottles typically date to post 1850's
33	40	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	footring	plain/undecorated				1		
34	9	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	moulded				1		indeterminate moulded decoration
35	94	ceramic	porcelain	personal/societal	toy	doll	incomplete	painted				1		fragment of porcelain dolls head. Braided hair, faded black paint details
36	107	glass		indeterminate	container	container: indeterminate	finish: oil		green: dark olive			1		oil bottle finish: common between 1850's to 1920's
37	33	glass		indeterminate	container	container: indeterminate	finish: champagne		green: dark olive			1		champange style bottle finish - common throughout 19th century into 20th century - not diagnostic based on finish alone
38	115	glass		indeterminate	container	container: indeterminate	body		green: dark olive			1		
39	115	glass		indeterminate	container	container: indeterminate	finish: ground		clear/colourless			1		ground container finish - common on canning jars between 1850s to 1910s
40	39	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	industrial slip	banded			1		brown bands
41	32	glass		indeterminate	container	container: indeterminate	finish: prescription		maganese-tinted			1		prescription finish - common between 1870's and 1920's. maganese tinted glass common between 1890-1920
42	32	ceramic	coarse yellow earthenware	food and beverage	container	container: indeterminate	body	albany slip ext. and int.				1		
43	21	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
44	6	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
45	26	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
46	68	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	tranfer print	black			1		
47	99	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
48	99	glass		structural	building component	windowpane			clear/colourless			1		
49	45	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
50	66	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
51	95	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
52	98	glass		indeterminate	container	container: indeterminate	body		aqua: light			1		
53	98	glass		structural	building component	windowpane			clear/colourless			1		
54	98	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
55	98	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
56	78	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
57	78	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
58	100	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
59	100	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
60	97	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
61	97	glass		structural	building component	windowpane			clear/colourless			1		
62	64	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
63	64	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
64	103	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
65	77	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
66	67	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
67	75	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
68	75	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
69	43	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
70	111	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				4		
71	111	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
72	42	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
73	23	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
74	23	glass		indeterminate	container	container: indeterminate	body		aqua: light			1		
75	57	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
76	71	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	moulded				1		indeterminate moulded decoration

Cat. #	CSP #	Material 1	Material 2	Function 1	Function 2	Object	Fragment	Attribute 1	Attribute 2	Manufacture	Alteration	# of Artifacts	# of Objects	Note
77	59	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
78	62	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
79	53	glass		indeterminate	container	container: indeterminate	body		green: dark olive			1		
80	53	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
81	28	ceramic	refined white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
82	91	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
83	92	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
84	1	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	moulded				1		probable floral motif
85	90	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
86	89	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
87	48	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
88	110	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				3		
89	110	glass		indeterminate	container	container: indeterminate	body		brown			1		
90	22	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
91	22	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		incomplete makers mark, not enough to identify. "GEO…"
92	133	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
93	151	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
94	149	glass		indeterminate	container	container: indeterminate	body		green: dark olive			1		
95	148	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
96	147	glass		indeterminate	container	container: indeterminate	body		green: dark olive			1		
97	142	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
98	150	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
99	146	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
100	153	glass		indeterminate	container	container: indeterminate	body		aqua: light			1		
101	154	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
102	155	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
103	127	ceramic	coarse red earthenware	food and beverage	container	container: indeterminate	body	salt glaze ext. exfoliated int.				1		
104	160	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
105	152	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
106	152	ceramic	coarse red earthenware	food and beverage	container	container: indeterminate	body	brown salt glaze ext. exfoliated int.				1		
107	135	glass		indeterminate	container	container: indeterminate	base		aqua: light	indeterminate		1		small glass bottle base, indeterminate manufacturing method
108	143	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		partial makers mark "…AKIN". May be Meakin - multiple Meakin makers marks (Alfred Meakin, J&G Meakin), post 1850 (Weatherbee 1980 A Look at White Ironstone)
109	138	glass		structural	building component	windowpane			clear/colourless			1		
110	138	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
111	145	ceramic	vitrified white earthenware	food and beverage	tableware	holloware:indeterminate	handle	plain/undecorated				1		
112	144	glass		structural	building component	windowpane			clear/colourless			1		
113	119	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
114	119	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
115	120	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
116	120	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
117	121	ceramic	coarse red earthenware	food and beverage	container	container: indeterminate	body	brown salt glaze ext. and int.				1		
118	122	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
119	122	glass		structural	building component	windowpane			clear/colourless			1		
120	124	metal	iron	structural	hardware	nail: common	complete			machine cut		1		
121	125	glass		indeterminate	container	container: indeterminate	body		green: dark olive			1		
122	125	ceramic	refined white earthenware	food and beverage	tableware	tableware:indeterminate	body	tranfer print	brown			1		very small sherd
123	101	glass		indeterminate	container	container: indeterminate	body		aqua: light			1		
124	101	metal	iron	structural	hardware	nail: common	complete			machine cut		1		
125	37	ceramic	stoneware	food and beverage	container	container: indeterminate	body	clear salt glaze ext. black glaze int.				1		
126	118	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
127	36	ceramic	stoneware	food and beverage	container	container: indeterminate	body	clear salt glaze ext. black glaze int.				1		
128	13	glass		structural	building component	windowpane			clear/colourless			1		
129	13	glass		indeterminate	container	container: indeterminate	body		green: light			1		
130	13	metal	iron	structural	hardware	nail: common	complete			machine cut		1		
131	116	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
132	116	metal	iron	structural	hardware	nail: common	complete			machine cut		1		
133	116	ceramic	coarse red earthenware	food and beverage	container	container: indeterminate	body	brown salt glaze ext. and int.				1		
134	116	ceramic	white ball clay	personal/societal	smoking	pipe bowl	incomplete					1		
135	117	glass		indeterminate	container	container: indeterminate	body		aqua: light			1		
136	117	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
137	117	glass		indeterminate	container	container: indeterminate	body		blue: light			1		
138	117	metal	iron	structural	hardware	nail: common	complete			machine cut		1		
139	81	metal	iron	structural	hardware	nail: common	complete			machine cut		1		
140	88	ceramic	dust-pressed	personal/societal	clothing	button: 4 hole	complete		blue	prosser		1		dust-pressed prosser button
141	63	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
142	20	glass		structural	building component	windowpane			clear/colourless			2		
143	104	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
144	104	glass		structural	building component	windowpane			clear/colourless			1		
145	41	metal	iron	indeterminate	hardware	washer	complete					1		
146	109	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
147	109	glass		indeterminate	container	container: indeterminate	body		green: dark olive			1		
148	7	glass		indeterminate	container	container: indeterminate	body		green: dark olive			1		
149	140	ceramic	white ball clay	personal/societal	smoking	pipe stem	incomplete					1		"GLASG…" (likely Glasgow), very worn name opposite, possibly "White". (William White is listed as a Glasgow pipe manufacturer from 1805-1955 in the OAS field manual)
150	123	ceramic	refined white earthenware	food and beverage	tableware	tableware:indeterminate	body	tranfer print	brown			1		
151	123	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		

Cat. #	CSP #	Material 1	Material 2	Function 1	Function 2	Object	Fragment	Attribute 1	Attribute 2	Manufacture	Alteration	# of Artifacts	# of Objects	Note
152	162	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	tranfer print	black			1		
153	113	glass		indeterminate	container	container: indeterminate	body		aqua: light			2		
154	58	glass		indeterminate	container	container: indeterminate	body		green: light			1		
155	58	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	moulded				1		indeterminate moulded decoration
156	86	metal	iron	indeterminate	indeterminatre	indeterminate	incomplete					1		
157	86	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
158	16	glass		indeterminate	container	container: indeterminate	base		clear/colourless			1		jar base, indeterminate manufacture
159	106	glass		indeterminate	container	container: indeterminate	body		green: dark olive			1		
160	106	glass		structural	building component	windowpane			clear/colourless			1		
161	82	glass		indeterminate	container	container: indeterminate	body		blue: light			1		
162	29	glass		indeterminate	container	container: indeterminate	body		green: dark olive			1		
163	79	glass		indeterminate	container	container: indeterminate	base		clear/colourless			1		
164	46	glass		indeterminate	container	container: indeterminate	body		green: dark olive			2		
165	46	glass		indeterminate	container	container: indeterminate	body		blue: light			1		
166	17	glass		indeterminate	container	container: indeterminate	base		clear/colourless			1		
167	112	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		jar base, indeterminate manufacture
168	105	glass		indeterminate	container	container: indeterminate	body		green: dark olive			1		
169	102	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
170	31	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
171	38	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
172	61	glass		structural	building component	windowpane			clear/colourless			1		
173	47	glass		indeterminate	container	container: indeterminate	body		brown			1		
174	55	glass		indeterminate	container	container: indeterminate	body		brown		melted	1		
175	49	glass		structural	building component	windowpane			clear/colourless			1		
176	85	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
177	84	glass		structural	building component	windowpane			clear/colourless			1		
178	65	ceramic	coarse red earthenware	food and beverage	container	container: indeterminate	body	clear salt glaze ext. exfoliated int.				1		
179	52	glass		indeterminate	container	container: indeterminate	finish: packer		green: dark olive			1		Packer finish, aka english ring, long period of use, mid-19th century to early 20th century, not useful for dating
180	52	glass		indeterminate	container	container: indeterminate	body		green: dark olive			1		
181	87	glass		structural	building component	windowpane			clear/colourless			1		
182	70	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
183	76	glass		structural	building component	windowpane			clear/colourless			1		
184	76	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated			burnt	1		
185	108	glass		indeterminate	container	container: indeterminate	body		aqua: light			1		
186	108	glass		structural	building component	windowpane			clear/colourless			1		
187	74	ceramic	coarse red earthenware	food and beverage	container	container: indeterminate	body	exfoliated ext. brown salt glaze int.				1		
188	72	ceramic	coarse red earthenware	food and beverage	container	container: indeterminate	body	brown salt glaze ext. and int.				1		
189	34	metal	indeterminate white	indeterminate	indeterminatre	indeterminate	incomplete					1		
190	34	glass		structural	building component	windowpane			clear/colourless			1		
191	35	glass		structural	building component	windowpane			clear/colourless			1		
192	2	glass		indeterminate	container	container: indeterminate	body		green			1		
193	30	glass		indeterminate	container	container: indeterminate	body		brown			1		
194	50	glass		indeterminate	container	container: indeterminate	body		green: light			1		
195	11	glass		indeterminate	container	container: indeterminate	base		aqua: light			1		container base, indeterminate manufacture
196	136	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
197	137	glass		indeterminate	container	container: indeterminate	body		blue: light			1		
198	139	ceramic	coarse red earthenware	food and beverage	container	container: indeterminate	body	exfoliated ext. brown salt glaze int.				1		
199	139	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
200	134	ceramic	vitrified white earthenware	food and beverage	tableware	holloware:indeterminate	rim	moulded				1		moulded wheat motif
201	134	ceramic	vitrified white earthenware	food and beverage	tableware	flatware:indeterminate	rim	plain/undecorated				1		
202	130	ceramic	refined white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
203	159	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
204	163	glass		indeterminate	container	container: indeterminate	body		brown			1		
205	156	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				1		
206	158	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
207	126	glass		structural	building component	windowpane			clear/colourless			1		
208	166	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
209	141	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
210	161	glass		indeterminate	container	container: indeterminate	body		aqua: light			1		
211	164	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
212	132	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated			burnt	1		
213	132	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
214	157	glass		indeterminate	container	container: indeterminate	body		clear/colourless			1		
215	167	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
216	128	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
217	128	ceramic	porcelain	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				1		
218	131	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	body	plain/undecorated				2		
219	131	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	moulded				1		indeterminate moulded motif
220	165	ceramic	coarse red earthenware	food and beverage	container	container: indeterminate	body	brown salt glaze ext. and int.				1		
221	129	ceramic	vitrified white earthenware	food and beverage	tableware	tableware:indeterminate	rim	plain/undecorated				2		
222	129	ceramic	rockinghamware	food and beverage	tableware	tableware:indeterminate	base	rockinghamware				1		

Location 3														
Cat. #	CSP #	Material 1	Material 2	Function 1	Function 2	Object	Fragment	Attribute 1	Attribute 2	Manufacture	Alteration	# of Artifac	# of Object	Note
1	1	stone	indeterminate	tools & equipment	tool	adze	incomplete			groundstone		1		length: 86.36mm width: 43.56mm thickness: 24.58mm possible groundstone adze/other tool. Appears to be pecked out in rough with final shaping/smoothing intended

golder.com