



**Stage 1-2 Archaeological
Assessment: Lafarge Brantford
Extension Property**

East Half of Lot 12 Concession 5, Brantford
Township, Brant County, Ontario

January 28, 2019

Prepared for:

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ORIGINAL REPORT

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Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Lafarge Canada Inc. (Lafarge) to complete a Stage 1-2 archaeological assessment for a proposed license application for a Category 1, Class A pit below water, as required by the *Aggregate Resources of Ontario: Provincial Standards Version 1.0* (Government of Ontario 1997) under the *Aggregate Resources Act* (Government of Ontario 1990a). The assessment will also support an official plan and a zoning by-law amendment application on the Lafarge Brantford Extension Property, on part of the east half of Lot 12, Concession 5, Brantford Township, Brant County, Ontario (the study area) (Figure 1). The study area, a former ginseng farm, is approximately 20 hectares located on the south side of Colborne Street West, east of Rest Acres Road (Highway 24) and west of McGregor Avenue, approximately three kilometres west of Brantford.

This archaeological assessment is subject to the *Ontario Heritage Act* (Government of Ontario 1990b) and the Ministry of Tourism, Culture and Sport's (MTCS) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

The Stage 1 background research determined that the study area exhibited potential for the identification and recovery of archaeological resources. As such, a Stage 2 survey was recommended for the study area. The Stage 2 was conducted on December 4, 2017. A single Euro-Canadian archaeological site was identified within the study area and registered as Ginseng 1 (AgHc-181).

Ginseng 1 (AgHc-181) does not fulfill the criteria for a Stage 3 archaeological investigation as per Section 2.2 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The cultural heritage value or interest of Ginseng 1 (AgHc-181) has been sufficiently assessed and documented through the Stage 2 archaeological assessment. Therefore, **no further archaeological assessment is recommended for Ginseng 1 (AgHc-181).**

Apart from Ginseng 1 (AgHc-181), no archaeological resources were identified during the Stage 2 survey of the study area. Therefore, in accordance with Section 2.2 and Section 7.8.4 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **the study area is considered free of further archaeological concern and no further archaeological assessment is required for the study area.**

The Ministry of Tourism, Culture and Sport is asked to review the results presented and to accept this report into the *Ontario Public Register of Archaeological Reports*.

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

Project Personnel

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Acknowledgements

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1.0 PROJECT CONTEXT

1.1 DEVELOPMENT CONTEXT

Stantec Consulting Ltd. (Stantec) was retained by Lafarge Canada Inc. (Lafarge) to complete a Stage 1-2 archaeological assessment for a proposed license application for a Category 1, Class A pit below water, as required by the *Aggregate Resources of Ontario: Provincial Standards Version 1.0* (Government of Ontario 1997) under the *Aggregate Resources Act* (Government of Ontario 1990a). The assessment will also support an official plan and a zoning by-law amendment application on the Lafarge Brantford Extension Property, on part of the east half of Lot 12, Concession 5, Brantford Township, Brant County, Ontario (the study area) (Figure 1). The study area, a former ginseng farm, is approximately 20 hectares located on the south side of Colborne Street West, east of Rest Acres Road (Highway 24) and west of McGregor Avenue, approximately three kilometres west of Brantford.

This archaeological assessment is subject to the *Ontario Heritage Act* (Government of Ontario 1990b) and the Ministry of Tourism, Culture and Sport's (MTCS) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

Permission to enter the study area and conduct all required archaeological fieldwork activities, including the recovery of artifacts, was granted by Carol Siemiginowski of Lafarge Canada Inc.

1.1.1 Objectives

For the purposes of the Stage 1-2 archaeological assessment, the Ministry of Tourism, Culture, and Sport's (MTCS) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) were followed. The objectives of the Stage 1 archaeological assessment are to:

- provide information about the study area's geography, history, previous archaeological fieldwork and current land conditions.
- evaluate in detail the study area's archaeological potential to support recommendations for Stage 2 survey for all or parts of the property.
- recommend appropriate strategies for Stage 2 survey.

To meet these objectives Stantec archaeologists employed the following research strategies:

- Available relevant archaeological, historical and environmental literature pertaining to the study area was reviewed.
- The land use history of the study area, including pertinent available historic maps, was reviewed.
- The *Ontario Archaeological Sites Database* was reviewed to determine the presence of registered archaeological sites in and around the study area.
- The *Ontario Public Register of Archaeological Reports* was searched to determine whether previous archaeological assessment had been done on or around the study area.
- A property inspection of the study area was undertaken by a licensed archaeologist.

In compliance with the provincial standards and guidelines set out in the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 2 archaeological assessment are to:

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- document all archaeological resources within the study area.
- determine whether the study area contains archaeological resources requiring further assessment.
- recommend appropriate Stage 3 assessment strategies for all archaeological sites identified with further cultural heritage value or interest.

1.2 HISTORICAL CONTEXT

1.2.1 Post-contact Aboriginal Resources

“Contact” is typically used as a chronological benchmark in discussing Aboriginal archaeology in Canada and describes the contact between Aboriginal and European cultures. The precise moment of contact is a constant matter of discussion. Contact in what is now the province of Ontario is broadly assigned to the 16th century (Loewen and Chapdelaine 2016).

At the turn of the 17th century, the region of the study area was occupied by Iroquoian populations who are historically described as the Neutre Nations (by the French) or the Attiwandaron (by the Huron-Wendat); their autonym is not conclusively known (Birch 2015). In 1649, the Seneca with the Mohawk led a campaign into the southern Ontario and dispersed the Huron-Wendat, Tionontate (Petun), and Attiwandaron (Neutral) Nations, and the Seneca established dominance over the region (Heidenreich 1978). Specifically, the study area would have been within the catchment of the settlement of Quinaouatoua, which controlled the portage from Burlington Bay to the Grand River. No contemporary sources indicate which Nation controlled this settlement, however D’Anville’s 1755 map (Konrad 1981: Plate 1) shows a settlement between Burlington Bay and the Grand River with the label of “Ganastogue Tsounontoua”; being the Iroquois words for the Susquehannock and the Seneca, respectively. The settlement may, therefore, have been comprised of a population of Seneca and captured Susquehannock (Jennings 1978:362). The exact location of this settlement is unknown, however. This permanently occupied settlement held great strategic importance, controlling the aforementioned portage route, as well as great economic importance, serving as a staging point for Seneca fur trappers on route to hinterlands from Lake Ontario (Konrad 1981).

By 1690, Ojibwa speaking people had begun moving south into the lower Great Lakes basin (Konrad 1981; Rogers 1978). The Indigenous economy since the turn of the 18th century focused on fishing and the fur trade, supplemented by agriculture and hunting.

The expansion of the fur trade led to increased interaction between European and Aboriginal people, and ultimately intermarriage between European men and Aboriginal women. During the eighteenth-century the progeny of these marriages began to no longer identify with either their paternal or maternal cultures, but instead as Métis. The ethnogenesis of the Métis progressed with the establishment of distinct Métis communities along the major waterways in the Great Lakes of Ontario. Métis communities were primarily focused around the upper Great Lakes and along Georgian Bay, however, Métis people have historically lived throughout Ontario (Métis Nation of Ontario 2016; Stone and Chaput 1978:607-608).

The study area is situated within the Haldimand Tract (Figure 2). This original tract consisted of approximately 273,000 hectares and occupied an approximately 10-kilometre-deep tract on either side of the Grand River from mouth to source. This tract was granted by the Crown to the Mohawks “...and such others of the Six Nations Indians as wish to settle in that quarter...” in restitution for the loss of their homeland following the American War of Independence and in recognition of their loyalty to the Crown during that war (Government of Canada 1905:26). The

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original Six Nations (Haudenosaunee) settlers were also accompanied by a number of Delaware, Nanticoke, Tutelo, Creek, and Cherokee who had previously settled with the Haudenosaunee prior to the beginning of the war. Initial controversy existed over the sovereignty of the Haudenosaunee, with the Crown asserting that the lands granted were non-transferrable. The assertion was made in 1792 with the Simcoe patent, stipulating that all land transactions required Crown approval. This patent was rejected by the Haudenosaunee and subsequently more than 142,000 hectares were leased or sold to Euro-Canadian inhabitants. In 1834, a Crown investigation was held and determined that removal of the Euro-Canadian settlers would be too costly, and the leases were confirmed as legal (Weaver 1978:525).

Further controversy existed over the description of the extent of the tract, specifically regarding the headwaters of the Grand River beyond Nichol Township (in present day Wellington County). Despite the Grand River's headwaters extending beyond, the Crown asserted that the tract ended at Nichol Township based on the description of the extent of land purchased in 1784 from the Mississauga (Weaver 1978:525). The inconsistency between the description of the Haldimand Tract in the 1784 treaty and the surveyed extent of the Tract asserted by the Crown continues into the modern day to be a grievance (Six Nations Lands & Resources Department 2015). The Haudenosaunee and accompanying Aboriginal peoples settled in villages along the Grand River. In the area around Brantford, villages were occupied by the Mohawk, (Upper) Cayuga, Oneida, Tutelo, and Tuscarora Nations. In the late 1820s and into the 1830s, itinerant Christian missionaries became increasingly active across the Tract and many Haudenosaunee settled up-river converted to Christianity. While clan and lineage affiliations under the Longhouse social organization had been important aspects of Haudenosaunee society, this affiliation became rare among Christians for whom the nuclear family became the primary social and economic unit (Weaver 1978:525-527).

From 1830 onward, the civil government of Canada pursued an active assimilation policy, such as, in 1869, statutorily enacted patrilineal kinship contrary to traditional matrilineal kinship. Despite these policies, Longhouse traditionalism persisted into the late nineteenth century. By the late 1830s, most of the Haudenosaunee population had left the original villages and settled farms along the Haldimand Tract. Indigenous economy in the nineteenth century was comparable to that of neighbouring Euro-Canadian inhabitants, cultivating maize only on a small scale, with larger scale cultivation of cash crops such as wheat, oats, hay, and peas. With the continued piecemeal sales of lands, in 1841 the remaining approximate 89,000 hectares of the Tract was surrendered to the Crown and the Six Nations reserve was established (Weaver 1978:525-526).

1.2.2 Euro-Canadian Resources

1.2.2.1 Brant County

Brant County was formed in 1852 out of six townships formerly belonging to Wentworth, Oxford, and Halton Counties. These townships were: Burford, Brantford, South Dumfries, Onondaga, Oakland, and Tuscarora (Mika and Mika 1977:252). Brant County is named after Joseph Brant, the Mohawk chief and warrior who fought on the British side during the American Revolution and brought the Mohawk tribe to the Grand River Valley and the Haldimand Tract (Mika and Mika 1977:252).

The settlement of Brant County started in 1793 with the Township of Burford being the first township settled and the Township of Onondaga being the last, with the first settlers arriving in 1838 (Ontario Agricultural Commission [OAC] 1881:2). The County is noted for having good soil, with a mix of rich clay, and a mixed clay and sand loam, which is suitable for a variety of crops. The Grand River flows through the centre of the County and acted as a resource for

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settlers and Aboriginal groups alike. In 1881, Brant County is noted as having a total area of approximately 90,332 hectares; 68,930 of which were cleared for agricultural purposes (OAC 1881:2). By 1881, the County is described as having nine cheese factories, an iron foundry, an agricultural implement factory, and six flour mills (OAC 1881:2). By this time, the majority of farm houses in the county were brick, stone, or first-class frame with only a few log or inferior frame structures. Three quarters of outbuildings were reported to be first-class (OAC 1881:2).

Brant County contains a First Nations reserve, which includes the Six Nations of the Grand River and Mississaugas of the New Credit First Nations. The interpretation of the 1784 Treaty would make this reserve the largest in Canada at 950,000 acres (Six Nations Lands & Resources Department 2015).

1.2.2.2 Township of Brantford

The study area falls within the Geographic Township of Brantford in the County of Brant, Ontario. Brantford Township, the largest and most central of the County of Brant, was officially organized in 1840 (OAC 1881:5). However, Euro-Canadian settlement of Brantford Township, both east and west of the Grand River, began in 1806, concentrating on what was to become the village of Brantford. By 1830, the village of Brantford was a growing Euro-Canadian settlement. As the need arose for additional lands to accommodate population growth, the Mohawks were persuaded to surrender an area totaling 807 acres as a “free gift” to the Euro-Canadian inhabitants (Dunham 1945:175), comprising approximately one-fifth the area of the present city of Brantford. The plot was surveyed and on May 14, 1831 all unappropriated land was put for sale at ten pounds, or approximately \$40 US dollars, per lot (Dunham 1945:175).

1.2.2.3 Site Specific History

The earliest historical mapping that was readily accessible for review was Tremaine’s 1859 map of *County of Brant, Canada West* (Tremaine 1859) (Figure 3). The 1875 *Illustrated Historical Atlas of County of Brant* was also reviewed (Page and Smith 1875) (Figure 4). In 1859, study area on the eastern half of Lot 12, Concession 5, Brantford Township, Brant County was owned by James Lake. No structure is indicated within the study area on Tremaine’s 1859 map. The study area was owned by A. McVicker by 1875 and a structure, likely a farm house, is indicated at the north end of the lot.

In discussing the late nineteenth-century historical mapping it must be remembered that historical county atlases were produced primarily to identify factories, offices, residences, and landholdings of subscribers and were funded by subscription fees. Landowners who did not subscribe were not always listed on the maps (Caston 1997:100). As such, all structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984). Review of historic mapping also has inherent accuracy difficulties due to potential error in geo-referencing. Geo-referencing is conducted by assigning spatial coordinates to fixed locations and using these points to spatially reference the remainder of the map. Due to changes in fixed locations over time (e.g., road intersections), errors/difficulties of scale and the relative idealism of the historic cartography, historic maps may not translate accurately into real space points. This may provide obvious inconsistencies during the historic map review.

Land Registry Data

The Abstract Index data for the east half of Lot 12, Concession 5, Brantford Township, Brant County is presented below in Table 1 (OnLand 2018). The Abstract Index confirms the property ownership indicated on the early mapping

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(Figure 3 and Figure 4). The property was first patented from the Crown by James Lake in February 1859, approximately 50 years after Euro-Canadian settlement began in the vicinity of the village of Brantford. The property changed hands three times in the late nineteenth century and was purchased by John Quance in 1883. The property changed hands 20 times in the twentieth century.

Table 1: Abstract Index Data from the east half of Lot 12, Concession 5, Brantford Township, Brant County

Instrument Number	Instrument Type	Date of Instrument	Date of Registration	Grantor	Grantee	Remarks
	Patent	8 Feb. 1859	8 Feb. 1859	The Crown	James Lake	E½ of lot 48¾ acres
3802	B&S	14 Sept. 1867	16 Sept. 1867	James Lake	Henry Hart	E½ of lot 48¾ acres
3960	B&S	17 Mar. 1868	18 Mar. 1868	Henry Hart and wife	Alex McVicker	E½ of lot 48¾ acres
9989	B&S	20 Mar. 1883	28 Mar. 1883	Alexander McVicker and wife	John Quance	E½ of lot 48¾ acres
23637	B&S	25 Mar. 1911	29 Mar. 1911	John Thomas Quance and wife	Benjamin D. Haviland and Melissa Jane Haviland	E½ of lot 48¾ acres
25729	B&S	29 Aug. 1913	16 Sept. 1913	Melissa Jane Haviland	George Frederick Wolfe and Ethel Christina Wolfe, his wife	E½ of lot 48¾ acres
28340	B&S	9 June 1917	19 Sept. 1917	George Frederick Wolfe and Ethel Christina Wolfe, his wife	Hettie May, wife of Edward Glasen	E½ of lot 48¾ acres
30384	Grant	8 Apr. 1920	13 Apr. 1920	Hettie May Glasen	Elmer E. Johnston	E½ of lot 48¾ acres
31458	Grant	10 Nov. 1921	11 Nov. 1921	Elmer E. Johnson and wife	Wallace M. Woodley	E½ of lot 48¾ acres
31519	Grant	1 Dec. 1921	2 Dec. 1921	Wallace M. Woodley and wife	Herbert Thornton	E½ of lot 48¾ acres
31977	Grant	8 Sept. 1922	18 Sept. 1922	Herbert Thornton and wife	Wilfrid C. Poole	E½ of lot 48¾ acres
32656	Grant	18 Sept. 1923	18 Oct. 1923	Wilfrid C. Poole and wife	Albert J. McHardy and Mary	E½ of lot 48¾ acres

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					McHardy, his wife	
32976	Grant	22 Oct. 1923	17 May 1924	Albert J. McHardy and Mary McHardy, his wife	Edward J. Hall and Mary Hall, his wife	E½ of lot 48¾ acres
34230	Grant	12 Mar. 1927	16 Mar. 1927	Edward J. Hall and Mary Hall, his wife	Margaret A. Steed	E½ of lot 48¾ acres
34542	Deed under Power of Sale	29 Oct. 1927	9 Nov. 1927	Albert Tomlinson, Edward Tomlinson	Thomas O. Witting	E½ of lot 48¾ acres
36497	Grant	22 Sept. 1930	20 Nov. 1931	Thomas O. Witting and wife	Ralph E. Braund	E½ of lot 48¾ acres
36654	Grant	26 Mar. 1932	29 Mar. 1932	Ralph E. Braund and wife	Clayton E. Barber	E½ of lot 48¾ acres
38832	Grant	25 Jan. 1938	19 Feb 1938	Clayton E. Barber	George Pette	E½ of lot 48¾ acres
43368	Grant	22 June 1944	12 Oct. 1944	George Pette	Wesley Gray and Isabel W. Gray, his wife	E½ of lot 48¾ acres
44509	Grant	31 Mar. 1945	1 Nov 1945	Wesley Gray and Isabel W. Gray, his wife	Andy Kish and Terez Kish, his wife	E½ of lot 48¾ acres
56802	Grant	1 Mar. 1952	25 June 1952	Andy Kish and Terez Kish, his wife	Charlie Botzang and Marie Botzang, his wife	E½ of lot 48¾ acres
60208	Grant	12 Feb. 1954	19 Feb. 1954	Charlie Botzang and Marie Botzang, his wife	Wilfred Nash	E½ of lot 48¾ acres
1231	Plan of Order in Council	27 Nov. 1967	21 Dec. 1967	Highway Plan P 2675.27		To designate part of said Lot as the King's Highway
A190718	Grant	16 July 1976	16 Aug. 1976	Estate of Wilfrid L. Nash	Joseph Miller and Phyllis F. Miller, his wife	E½ of lot 48¾ acres

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The 1861 census records a 42 year old farmer named James Lake living in the Township of Brantford (Library and Archives Canada 2013). Lake, who was born in Upper Canada, lived in a 1½ storey frame house with his wife Rachel and their four children. The frame house noted in the 1861 census is likely the same house depicted on the 1875 *Illustrated Historical Atlas of County of Brant* (Page and Smith 1875), which is in the same position as the existing house within the study area.

1.3 ARCHAEOLOGICAL CONTEXT

1.3.1 The Natural Environment

The study area is situated in the Horseshoe Moraines physiographic region, which contains multiple morainic ridges composed of pale brown, hard and calcareous fine-textured till, with a moderate degree of stoniness (Chapman and Putnam 1984:127). The moraines tend to flatten out south of the Town of Paris and disappear under the sands of Norfolk County (Chapman and Putnam 1984:128).

One major soil series is represented: Huron clay loam. Although used for vegetable crops, Huron clay loam is more suited for livestock production and pasture land (Chapman and Putnam 1984). Although not ideal, Huron clay loam would be suitable for pre-contact Aboriginal agriculture.

Another major soil series associated with the area is Burford soil: characterized by gravelly loam or gravelly sand. Burford soils tend to drain rapidly. (Acton 1989:29)

Maize was the most important subsistence crop for traditional Aboriginal agriculture. Soil variability can account for significant difference in yield for corn agriculture (Government of Ontario 2016a). The ideal soil texture and drainage for corn cultivation is well-drained silty soils (Government of Ontario 2016b). Based on the Department of Agriculture's review of soils in the Brant county (considering texture, drainage, fertility, and topography), Burford soils are considered suitable for field cultivation of corn (Acton 1989:29), and for traditional Aboriginal agriculture within the study areas.

The study area lies between Whitemans Creek, approximately 1.7 kilometres to the north, and Ostrich Creek and the Oakland Swamp approximately 1.5 kilometres to the south and southwest, respectively. The Grand River is approximately 2.7 kilometres northeast of the study area.

1.3.2 Pre-contact Aboriginal Resources

It has been demonstrated that Aboriginal people began occupying southern Ontario as the Laurentide glacier receded, as early as 9000 B.C. (Ellis and Ferris 1990). Much of what is understood about the lifeways of these Aboriginal peoples is derived from archaeological evidence and ethnographic analogy. In Ontario, Aboriginal culture prior to the period of contact with European peoples has been distinguished into cultural periods based on observed changes in material culture. These cultural periods are largely based in observed changes in formal lithic tools, and separated into the Early Paleo-Indian, Late Paleo-Indian, Early Archaic, Middle Archaic, and Late Archaic periods. Following the advent of ceramic technology in the Aboriginal archaeological record, cultural periods are separated into the Early Woodland, Middle Woodland, and Late Woodland periods, based primarily on observed changes in formal ceramic decoration. It should be noted that these cultural periods do not necessarily represent specific cultural

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identities but are a useful paradigm for understanding changes in Aboriginal culture through time. The current understanding of Aboriginal archaeological culture is summarized in Table 2.

Table 2: Cultural Chronology for Haldimand County (based on Ellis and Ferris 1990)

Cultural Period	Characteristics	Time Period	Comments
Early Paleo-Indian	Fluted Projectiles	9000 - 8400 B.C.	spruce parkland/caribou hunters
Late Paleo-Indian	Hi-Lo Projectiles	8400 - 8000B.C.	smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8000 - 6000 B.C.	slow population growth
Middle Archaic	Brewerton-like points	6000 - 2500 B.C.	environment similar to present
Late Archaic	Lamoka (narrow points)	2500 - 1800 B.C.	increasing site size
	Broad Points	1800 - 1500 B.C.	large chipped lithic tools
	Small Points	1500 - 1100B.C.	introduction of bow hunting
Terminal Archaic	Hind Points	1100 - 950 B.C.	emergence of true cemeteries
Early Woodland	Meadowood Points	950 - 400 B.C.	introduction of pottery
Middle Woodland	Dentate/Pseudo-Scallop Pottery	400 B.C. - A.D.500	increased sedentism
	Princess Point	A.D. 550 - 900	introduction of corn
Late Woodland	Early Ontario Iroquoian	A.D. 900 - 1300	emergence of agricultural villages
	Middle Ontario Iroquoian	A.D. 1300 - 1400	long longhouses (100m +)
	Late Ontario Iroquoian	A.D. 1400 - 1650	tribal warfare and displacement

Between 9000 and 8000 B.C., Aboriginal populations were sustained by hunting, fishing and foraging and lived a relatively mobile existence across an extensive geographic territory. Despite these wide territories, social ties were maintained between groups, one method in particular was through gift exchange, evident through exotic lithic material documented on many sites (Ellis 2013:35-40).

By approximately 8000 B.C., evidence exists and becomes more common for the production of ground-stone tools such as axes, chisels and adzes. These tools themselves are believed to be indicative specifically of woodworking. This evidence can be extended to indicate an increase in craft production and arguably craft specialization. This latter statement is also supported by evidence, dating to approximately 7000 B.C. of ornately carved stone objects which would be laborious to produce and have explicit aesthetic qualities (Ellis 2013:41). This is indirectly indicative of changes in social organization which permitted individuals to devote time and effort to craft specialization. Since 8000 B.C., the Great Lakes basin experienced a low-water phase, with shorelines significantly below modern lake levels (Stewart 2013: Figure1.1.C). It is presumed that the majority of human settlements would have been focused along these former shorelines. At approximately 6500 B.C. the climate had warmed considerably since the recession of the glaciers and the environment had grown more similar to the present day. Evidence exists at this time for an increase in population and the contraction of group territories. By approximately 4500 B.C., evidence exists from southern Ontario for the utilization of native copper (naturally occurring pure copper metal) (Ellis 2013:42). The known origin of this material along the north shore of Lake Superior indicates the existence of extensive exchange networks across the Great Lakes basin.

At approximately 3500 B.C., the isostatic rebound of the North American plate following the melt of the Laurentide glacier had reached a point which significantly affected the watershed of the Great Lakes basin. Prior to this, the

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Upper Great Lakes had drained down the Ottawa Valley via the French-Mattawa river valleys. Following this shift in the watershed, the drainage course of the Great Lakes basin had changed to its present course. This also prompted a significant increase in water-level to approximately modern levels (with a brief high-water period); this change in water levels is believed to have occurred catastrophically (Stewart 2013:28-30). This change in geography coincides with the earliest evidence for cemeteries (Ellis 2013:46). By 2500 B.C., the earliest evidence exists for the construction of fishing weirs (Ellis et al. 1990: Figure 4.1). Construction of these weirs would have required a large amount of communal labour and are indicative of the continued development of social organization and communal identity. The large-scale procurement of food at a single location also has significant implications for permanence of settlement within the landscape. This period is also marked by further population increase and by 1500 B.C. evidence exists for substantial permanent structures (Ellis 2013:45-46).

By approximately 950 B.C., the earliest evidence exists for populations using ceramics. Populations are understood to have continued to seasonally exploit natural resources. This advent of ceramic technology correlated, however, with the intensive exploitation of seed foods such as goosefoot and knotweed as well as mast such as nuts. The use of ceramics implies changes in the social organization of food storage as well as in the cooking of food and changes in diet. Fish also continued to be an important facet of the economy at this time. Evidence continues to exist for the expansion of social organization (including hierarchy), group identity, ceremonialism (particularly in burial), interregional exchange throughout the Great Lakes basin and beyond, and craft production (Williamson 2013:48-54).

By approximately A.D. 550, evidence emerges for the introduction of maize into southern Ontario. This crop would have initially only supplemented Aboriginal peoples diet and economy (Birch and Williamson 2013:13-14). Maize-based agriculture gradually became more important to societies and by approximately A.D. 900 permanent communities emerge which are primarily focused on agriculture and the storage of crops, with satellite locations oriented toward the procurement of other resources such as hunting, fishing and foraging. By approximately A.D. 1250, evidence exists for the common cultivation of the historic Aboriginal cultigens, including maize, beans, squash, sunflower and tobacco. These communities living within the region of the study areas are believed to have spoken a form of Iroquoian language and possessed many cultural traits similar to the historic Aboriginal nations (Williamson 2013:55).

1.3.3 Previous Archaeological Research

To compile an inventory of archaeological resources, the registered archaeological site records kept by the MTCS were consulted. In Ontario, information concerning archaeological sites stored in the Ontario Archaeological Sites Database is maintained by the MTCS. This database contains archaeological sites registered according to the Borden system. In Canada, archaeological sites are registered within the Borden system, a national grid system designed by Charles Borden in 1952 (Borden 1952). The grid covers the entire surface area of Canada and is divided into major units containing an area that is two degrees in latitude by four degrees in longitude. Major units are designated by upper case letters. Each major unit is subdivided into 288 basic unit areas, each containing an area of 10 minutes in latitude by 10 minutes in longitude. The width of basic units reduces as one moves north due to the curvature of the earth. In southern Ontario, each basic unit measures approximately 13.5 kilometres east-west by 18.5 kilometres north-south. In northern Ontario, adjacent to Hudson Bay, each basic unit measures approximately 10.2 kilometres east-west by 18.5 kilometres north-south. Basic units are designated by lower case letters. Individual sites are assigned a unique, sequential number as they are registered. These sequential numbers are issued by the MTCS who maintain the Ontario Archaeological Sites Database. The study area is located within Borden block AgHc.

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Information concerning specific site locations is protected by provincial policy and is not fully subject to the Freedom of Information and Protection of Privacy Act (Government of Ontario 1990c). The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MTCS 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.

An examination of the Ontario Archaeological Sites Database has shown that there are two archaeological sites located within one kilometre of the study area (Ministry of Tourism, Culture and Sport 2017a). These sites are summarized in Table 3. None of the previously identified archaeological sites are located within 50 metres of the study area.

Table 3: Previously Registered Archaeological Sites within One Kilometre

Borden Number	Site Name/Identifier	Temporal/Cultural Affiliation	Site Type
AgHb-509	Location 3	Late Archaic	Isolated find spot
AgHb-510	Location 4	Pre-contact Aboriginal	Find spot

A query of the *Ontario Public Register of Archeological Reports* did not indicate that a previous archaeological assessment has taken place within, or within 50 metres of, the study area (Ministry of Tourism, Culture and Sport 2017b).

1.4 ARCHAEOLOGICAL POTENTIAL

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. Stantec applied archaeological potential criteria commonly used by the MTCS (Government of Ontario 2011) to determine areas of archaeological potential within the region under study. These variables include proximity to previously identified archaeological sites; distance to various types of water sources; soil texture and drainage; glacial geomorphology; elevated topography; and the general topographic variability of the area. However, it is worth noting that extensive land disturbance can eradicate archaeological potential (Government of Ontario 2011).

Potable water is the single most important resource for any extended human occupation or settlement and since water sources in southern Ontario have remained relatively stable over time, proximity to drinkable water is regarded as a useful index for the evaluation of archaeological site potential. In fact, distance to water is one of the most commonly used variables for predictive modeling of archaeological site location in Ontario. Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and, considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential.

As discussed above, distance to water is an essential factor in archaeological potential modeling. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect sites locations and types to varying degrees. The MTCS categorizes water sources in the following manner:

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- Primary water sources: lakes, rivers, streams, creeks;
- Secondary water sources: intermittent streams and creeks, springs, marshes and swamps;
- Past water sources: glacial lake shorelines, relic river or stream channels, cobble beaches, shorelines of drained lakes or marshes; and
- Accessible or inaccessible shorelines: high bluffs, swamp or marshy lake edges, sandbars stretching into marsh.

As detailed in Section 1.3.1, the study area is not located within 300 metres of primary water sources. Ancient and/or relic tributaries of the various primary and secondary water sources may have existed in the vicinity of the study area but are not identifiable today and are not indicated on historic mapping.

Soil conditions of the study area are suitable for both Aboriginal and Euro-Canadian agriculture. Two previously registered Aboriginal archaeological sites (Table 3) are located within one kilometre of the study area.

For Euro-Canadian sites, archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements, early transportation routes, and properties listed on the municipal register or designated under the Ontario Heritage Act (Government of Ontario 1990b) or property that local histories or informants have identified with possible historical events. The historic mapping reviewed during this assessment demonstrates that the study areas and their environs were occupied by Euro-Canadian farmers by the 1860s, and a farmhouse structure is indicated on the property on the 1875 mapping (Figure 4), however a structure likely existed on the property earlier. Moreover, the study area is adjacent to an early transportation route, namely Colborne Street West (now County Highway 35). Much of the established road network and agricultural settlement from the mid-nineteenth century in the Brantford area is still visible today.

Considering the above, it is determined that the study area has general archaeological potential. Thus, in accordance with Section 1.3.1 of the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the Stage 1 archaeological assessment has determined that the study area exhibits the potential for the identification and recovery of archaeological resources and a Stage 2 archaeological assessment is recommended.

1.5 EXISTING CONDITIONS

The Stage 1-2 archaeological assessment of the study area was carried out under PIF P362-0192-2017 issued to Dr. Peter Popkin by the MTCS. The Stage 1 property inspection took place concurrently with the Stage 2 property survey on December 4, 2017. The study area is approximately 20 hectares and is primarily an active agricultural field (Figure 5). At the north end of the property is a farm operation with associated structures, gravel driveways and an area of manicured lawn that was not possible to plough. Near the centre of the property there is a large pit with steeply sided slopes.

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2.0 FIELD METHODS

The Stage 2 assessment of the study area was conducted on December 4, 2017 under PIF P362-0192-2017, issued to Dr. Peter Popkin by the MTCS. During the Stage 2 survey, assessment conditions were excellent and at no time were the field, weather, or lighting conditions detrimental to the recovery of archaeological material (Table 4). Photos 1 to 9 (see Section 8.0) confirm that field conditions met the requirements for a Stage 2 archaeological assessment, in accordance with Section 2.1 the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Figure 5 provides an illustration of the Stage 2 assessment methods, as well as photograph locations and directions.

Table 4: Field and Weather Conditions

Date	Activity	Weather	Field Conditions
December 4, 2017	Test pit survey and pedestrian survey	Overcast, cool	Soil dry and friable; screens well

The study area is approximately 20 hectares and contains an active agricultural field suitable for pedestrian survey and a farm operation with associated structures, gravel roads and landscaped lawns that were not possible to plough. The study area is bounded by Colborne Street West (County Highway 53) to the north, agricultural fields to the south and west, and an existing aggregates quarry to the east.

Approximately 94% of the study area consists of agricultural field. As such, it was determined that this portion of the study area would be assessed by pedestrian survey (Photos 3 to 5, Figure 5). The agricultural fields were ploughed and weathered in advance of pedestrian survey. The pedestrian survey was conducted at a five-metre interval in accordance with Section 2.1.1 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

During the pedestrian survey, when archaeological resources were identified, the survey transect was decreased to a one-metre interval and extended for a minimum 20 metre radius around the identified artifacts (Photo 5). Approximately one percent of the study area was assessed in this fashion (Figure 5). This approach was established to determine if the artifact was an isolated find or part of a larger surface scatter. If the artifact was part of a larger scatter, the one-metre interval was continued until the full extent of the scatter was defined, as per Section 2.1.1 Standard 7 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

In accordance with Section 5.0 Standard 2b of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) five UTM coordinates were taken for surface scatters larger than 10 by 10 metres: a coordinate at the site centre and four readings at the furthest extents in each of the cardinal directions. Moreover, for large surface scatters, a UTM coordinate was recorded for each diagnostic artifact as per Section 2.1 Standard 4a of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). All UTM coordinates were taken using a Topcon FC5000 handheld Global Positioning System (GPS) unit with Magnet Field software at an accuracy of three metres. All UTM coordinates are located in zone 17T and are based upon the North American Datum 1983 (NAD83). All artifacts identified during the archaeological assessment were collected.

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Approximately four percent of the study area consists of lands that were inaccessible for ploughing. These areas were subject to test pit survey at a five -metre interval (Photos 1, 2, 6, 7 and 8) in accordance with Section 2.1.2 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) (Figure 5). Test pits were excavated to within one metre of built structures. Each test pit was approximately 30 centimetres in diameter and excavated five centimetres into sterile subsoil. The soils were then examined for stratigraphy, cultural features, or evidence of fill. All soil was screened through six millimetre mesh hardware cloth to facilitate the recovery of small artifacts and then used to backfill the pit. No test pit survey intensification was required within the study area, as described in Section 2.1.3 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), because no artifacts were recovered during the test pit survey.

Approximately two percent of the study area was previously disturbed through road or building development, or through other deep and extensive ground disturbance as was the case with the large pit near the centre of the study area (Figure 5). These portions of the study area were photo documented (Photos 6, 7 and 9) but not subject to Stage 2 survey in accordance with Section 2.1 Standard 2.b of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

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3.0 RECORD OF FINDS

An inventory of the documentary record generated by Stage 2 fieldwork is provided in Table 5.

Table 5 Inventory of Documentation

Document Type	Current Location of Document Type	Additional Comments
5 pages of field notes	Stantec office in Stoney Creek	Hard and digital copies in project file
1 hand drawn map	Stantec office in Stoney Creek	Hard and digital copies in project file
1 map provided by the Client	Stantec office in Stoney Creek	Hard and digital copies in project file
105 digital photographs	Stantec office in Stoney Creek	Stored digitally in project file

One archaeological site consisting of post-contact Euro-Canadian cultural material was identified during the course of the Stage 2 pedestrian survey of the study area. All artifacts collected during the Stage 2 archaeological assessment are contained in one Bankers box. It will be temporarily housed at the Stantec London office until formal arrangements can be made for a transfer to an MTCS approved collections facility.

3.1 CULTURAL MATERIAL

One location within the study area was identified as containing Euro-Canadian archaeological artifacts. This small archaeological site has been assigned a Borden number (AgHc-181) and named Ginseng 1. Survey of Ginseng 1 (AgHc-181) resulted in the identification and collection of 19 Euro-Canadian artifacts along with one piece of recent, late-twentieth century ceramic. The Euro-Canadian artifact assemblage includes: 13 ceramic artifacts, 5 household artifacts, and one structural artifact. A summary of the Euro-Canadian artifacts recovered from Ginseng 1 (AgHc-181) is provided in Table 6. A sample of the Euro-Canadian artifacts recovered from Ginseng 1 (AgHc-181) is illustrated in Plate 1.

Table 6: Ginseng 1 (AgHc-181) Artifact Summary

Artifacts	Number	%
Ceramic	13	68.4
Household	5	26.3
Structural	1	5.3
Total	19	100

3.1.1 Ceramic Artifacts

The Euro-Canadian ceramic assemblage from Ginseng 1 (AgHc-181) includes: 3 pieces of whiteware, 3 pieces of pearlware, 2 pieces of utilitarian ceramics, one piece of creamware, once piece of porcelain, one piece of semi-porcelain, one piece of stoneware, and one piece of undetermined ceramics. Table 7 and Table 8 provide a summary

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of the ceramic assemblage from Ginseng 1 (AgHc-181) by ware type and decorative style, respectively. A sample of the ceramic assemblage is depicted in Plate 1 in Section 8.2.

Table 7: Ceramic Assemblage by Ware Type

Ceramic Artifacts	Frequency	%
Whiteware	3	23.08
Pearlware	3	23.08
Utilitarian	2	15.38
Creamware	1	7.69
Porcelain	1	7.69
Stoneware	1	7.69
Semi-porcelain	1	7.69
Ceramic, undetermined	1	7.69
Total	13	100

Table 8: Ceramic Assemblage by Decorative Style

Ceramic Artifacts	Frequency	%
Ceramic, undetermined	1	7.69
Creamware, moulded	1	7.69
Earthenware, red	1	7.69
Earthenware, red	1	7.69
Pearlware, transfer printed	1	7.69
Pearlware, transfer printed	1	7.69
Pearlware, undecorated	1	7.69
Porcelain, transfer printed	1	7.69
Semi-porcelain	1	7.69
Stoneware, salt-glazed	1	7.69
Whiteware, transfer printed	1	7.69
Whiteware, transfer printed	1	7.69
Whiteware, undecorated	1	7.69
Total	13	100

3.1.1.1 Whiteware

Whiteware is a variety of refined earthenware with a near-colourless glaze. By the 1830s it had replaced earlier, near-white ceramics such as pearlware and creamware. Early whiteware paste tends to be porous but becomes more

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vitrified later in the nineteenth-century (Adams 1994). A total of three pieces of whiteware were recovered during Stage 2 pedestrian survey.

Transfer printing on whiteware was popular throughout the nineteenth-century. Early transfer printed whiteware often has thicker lines because of the paper used during the transfer of pattern from paper to ceramic. Later transfer printed whiteware was manufactured either using tissue paper which allowed for shading and finer line details or using oil and a sheet of glue to create a design with little dots (Stelle 2001). Before the 1830s, blue was the most common colour used. During the 1830s and 1840s other colours, such as brown, black, red, green and purple became popular. Then, between 1850 and 1890, only blue, black and brown were popular with a variety of colours becoming popular again in the late nineteenth-century (Adams 1994). A total of two pieces of blue transfer printed whiteware was recovered during the Stage 2 pedestrian survey.

One piece of undecorated whiteware was recovered during the Stage 2 pedestrian survey. The artifact is associated with mid to late nineteenth-century date.

3.1.1.2 Pearlware

Pearlware can be easily identified by a bluish tint created by the addition of cobalt to the glaze that pools along footring crevices. Pearlware first came into production in 1779 and had its decline in the 1830s (Adams 1994). A total of three pieces of pearlware were recovered consisting of one black transfer printed piece, one blue transfer printed piece, and one undecorated piece. The paucity of this assemblage indicates it may have been a curated item that is not necessarily indicative of the period of occupation.

3.1.1.3 Utilitarian

Earthenware vessels, or utilitarian wares, are red or buff coloured and were often lead glazed. In Ontario, earthenwares were manufactured in the early nineteenth-century with a decline by the end of the nineteenth-century as other material, such as glass, became more popular (Adams 1994). Two pieces of red earthenware were recovered during the Stage 2 pedestrian survey, one with a dark brown interior glaze, no exterior glaze, and one with grey glaze.

3.1.1.4 Creamware

Creamware, often referred to as "Queen's Ware" was first produced in the 1750s, and later perfected by Josiah Wedgwood in the 1760s. It became common in Ontario by the 1770s and declined in popularity by 1830 (Adams 1994). Creamware is a refined, thin-bodied earthenware with a clear lead-glaze that appears creamy yellow to yellowish-green in colour. Creamware was most often manufactured plain or decorated with moulded designs, however, transfer printing, hand painting, and banding were also used. One moulded edge creamware fragment was recovered during the Stage 2 pedestrian survey, while partially exfoliated, some red transfer print of unknown design is partially visible. The paucity of this assemblage indicates it may have been a curated item that is not necessarily indicative of the period of occupation.

3.1.1.5 Porcelain

Porcelain wares are produced with very high firing temperatures which result in a partial vitrification of the paste. Vessel bodies tend to be translucent and can be very thin. Because of its prohibitive cost, porcelain is extremely rare

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on nineteenth-century sites in Ontario but becomes relatively common by the twentieth-century as less expensive production techniques were developed in Europe (Kenyon 1980b). One porcelain rim fragment with green banding around the lip, was recovered during the Stage 2 pedestrian survey, the thickness of the fragment and utilitarian design suggests a twentieth century date.

3.1.1.6 Semi-Porcelain

Semi-porcelain wares were developed by English potters during the first half of the nineteenth-century in an attempt to replicate imported porcelain. This refined earthenware was relatively thick-bodied, with a hard, opaque paste. In 1850, semi-porcelains were reintroduced and this vitreous, hard-glazed white earthenware quickly became widespread throughout North America. Decoration with hand-painted lustrous gold overglazes or 'gilding' became popular in the 1880s and persisted until the 1940s (Hughes 1961). One piece of semi-porcelain, with a white exterior and grey interior, was recovered during the Stage 2 pedestrian survey.

3.1.1.7 Stoneware

Stoneware has a vitrified stone-like paste due to the high temperatures used to fire the pottery. The paste colours vary between white, grey, and tan and are generally quite thick and durable. A common glaze on stoneware is salt-glazed, which is achieved by introducing salt to the kiln during the firing process (Maryland Archaeological Conservation Lab 2012). Stoneware was made in Ontario from 1849 onwards (Adams 1994). One piece of grey, salt glazed stoneware with a dark brown interior, was recovered.

3.1.1.8 Ceramic Form and Function

For Euro-Canadian sites, all ceramic sherds were examined in order to describe the function of the item from which the ceramic sherd originated. However, for those sherds that were too fragmentary for a functional assignment, an attempt was made to at least provide a formal description, such as to which portion of an item the sherd belonged (see Table 9 and Table 10). For example, what used to be a porcelain teacup but now found in an archaeological context could be classified archaeologically in the artifact catalogue in a descending order of specificity depending on preservation and artifact size: a teacup (function), a cup (function), a hollowware (form), or a rim fragment (form). Hollowwares and flatwares were differentiated based on the presence or absence, respectively, of curvature in the ceramic cross-section of each sherd. The classification system used here is based upon Beaudoin (2013), but teas were differentiated as teacups and tea saucers as necessary. If Beaudoin's classifications could not be applied, then the broader definitions of Voss (2008) were used. Ultimately, if sherds were small enough that even a general functional or formal ware type could not be determined, the sherd was simply classified as either a rim fragment, a non-rim fragment, a base fragment, or indeterminate. Ceramic functions, as many as were able to be determined, are provided in the artifact catalogue (Appendix A).

Table 9: Ceramic Assemblage by Form

Form of Ceramics by decorative style	Flatware	Hollowware	Undetermined	Total
Ceramic, undetermined	1	0	0	1
Creamware, moulded	1	0	0	1
Earthenware, red	0	1	0	1

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Form of Ceramics by decorative style	Flatware	Hollowware	Undetermined	Total
Earthenware, red	0	1	0	1
Pearlware, transfer printed	1	0	0	1
Pearlware, transfer printed	0	0	1	1
Pearlware, undecorated	1	0	0	1
Porcelain, transfer printed	0	1	0	1
Semi-porcelain	0	0	1	1
Stoneware, salt-glazed	0	1	0	1
Whiteware, transfer printed	0	0	1	1
Whiteware, transfer printed	0	0	1	1
Whiteware, undecorated	0	0	1	1
Total:	4	4	5	13

Table 10: Ceramic Assemblage by Function

Ceramic	Cup	Plate	Fragment	Total
Ceramic, undetermined	0	0	1	1
Creamware, moulded	0	1	0	1
Earthenware, red	0	0	1	1
Earthenware, red	0	0	1	1
Pearlware, transfer printed	0	0	1	1
Pearlware, transfer printed	0	0	1	1
Pearlware, undecorated	0	0	1	1
Porcelain, transfer printed	1	0	0	1
Semi-porcelain	0	0	1	1
Stoneware, salt-glazed	0	0	1	1
Whiteware, transfer printed	0	0	1	1
Whiteware, transfer printed	0	0	1	1
Whiteware, undecorated	0	0	1	1
Total:	1	1	11	13

3.1.2 Non-ceramic Artifacts

3.1.2.1 Household Artifacts

Some bottle glass colours can provide a tentative temporal range for Euro-Canadian domestic sites, although most are temporally non-diagnostic (Lindsey 2017). Colourless, or clear, glass is relatively uncommon prior to the 1870s

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but becomes quite widespread in the 1910s after the development of automatic bottle manufacturing (Kendrick 1971, Lindsey 2017). Three pieces of colourless glass were recovered during the Stage 2 pedestrian survey, including one burnt bottle finish. The finish, while thermally altered was a crown finish dating to the late nineteenth to early twentieth-century (Lindsey 2017). A reddish solarized glass jar finish fragment was also recovered (Plate 2). The finish consists of a wide mouth external thread with a ground rim of late nineteenth to early twentieth-century manufacture (Lindsey 2017).

3.1.2.2 Structural Artifacts

Window glass can be temporally diagnostic. In the 1840s, window glass thickness changed dramatically. This shift occurred as a result of the lifting of the English import tax on window glass in 1850, which taxed glass by weight and encouraged manufacturers to produce thin panes. Thus, most window glass manufactured before 1850 tends to be less than 1.6 millimetres thick, while later glass is thicker (Adams 1994; Kenyon 1980a). One piece of window glass was recovered during the Stage 2 pedestrian survey as was greater than 1.6 millimetres thick (Plate 3).

3.1.2.3 Recent Material

One piece of recent material was recovered consisting of a fragment of Correlle plate or dish. The makers mark was fragmented but sufficiently intact to determine manufacture and read "Break a... Chip R... COR... M...". (Break and Chip Resistant CORRELLE) (Plate 4). Correlle dishwares date to the latter half of the twentieth-century and this object is not included in the calculations of the archaeological ceramic assemblage.

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Analysis and Conclusions
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4.0 ANALYSIS AND CONCLUSIONS

Stantec Consulting Ltd. (Stantec) was retained by Lafarge Canada Inc. (Lafarge) to complete a Stage 1-2 archaeological assessment for a proposed licensed application for aggregate extraction on the east half of Lot 12, Concession 5, Brantford Township, Brant County, Ontario (the study area). The study area is approximately 20 hectares and located on the south side of Colborne Street West, east of Rest Acres Road (Highway 24) and west of McGregor Avenue, approximately three kilometres west of Brantford.

The Stage 1 background research determined that the study area exhibits general potential for the identification and recovery of archaeological resources. As such, a Stage 2 survey was recommended for the study area. The Stage 2 survey for the study area was conducted on December 4, 2017 by pedestrian and test pit survey. One Euro-Canadian archaeological site was identified during the Stage 2 survey of the study area. The MTCS requires that all archaeological sites that contain 10 or more nineteenth century artifacts within a 10 metre radius be assigned a Borden number regardless of whether or not the site warrants further archaeological assessment (Ministry of Tourism, Culture and Sport 2015). Therefore, a Borden number was requested and assigned, and an official site name was assigned: Ginseng 1 (AgHc-181). No other archaeological resources were documented within the study area.

4.1 GINSENG 1 (AgHc-181)

The Stage 2 assessment of Ginseng 1 (AgHc-181) resulted in the recovery of 19 Euro-Canadian artifacts over an 18 metre by 14 metre area, consisting of 13 ceramic artifacts, 5 household artifacts, and one structural artifact (Tile 1, Supplemental Documentation). In addition, a single piece of recent ceramic material was also recovered from the site. Visibility during the pedestrian survey was excellent and the site area and surrounding vicinity was subject to intensified pedestrian survey at one metre transect intervals (Photo 5). Despite the excellent ground surface visibility and the intensive survey method, no additional artifacts were identified or recovered from the site. The assemblage consists of ceramic and glass kitchen wares ranging from the nineteenth century to the late twentieth century, and a single piece of window glass of greater than 1.6 millimetre thickness also indicative of late nineteenth to twentieth-century origin. The assemblage is interpreted as being a mixed refuse deposit containing artifacts representing the duration of Euro-Canadian occupation of the property and likely associated with the existing farm house at the north end of the property (Photo 10, Tile 1).

Nineteen Euro-Canadian artifacts were recovered during the pedestrian survey which was intensified to one metre intervals in the vicinity of the artifacts. All visible artifacts were collected. The small, relatively low-density Ginseng 1 (AgHc-181) artifact assemblage does not fulfill the criteria that would require it to be subject to a Stage 3 archaeological investigation in accordance with Section 2.2 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The cultural heritage value or interest of Ginseng 1 (AgHc-181) is judged to be sufficiently assessed and documented through this Stage 2 archaeological assessment.

Recommendations
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5.0 RECOMMENDATIONS

5.1 GINSENG 1 (AgHc-181)

Ginseng 1 (AgHc-181) does not fulfill the criteria for a Stage 3 archaeological investigation as per Section 2.2 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The cultural heritage value or interest of Ginseng 1 (AgHc-181) has been sufficiently assessed and documented through the Stage 2 archaeological assessment. Therefore, **no further archaeological assessment is recommended for Ginseng 1 (AgHc-181).**

Apart from Ginseng 1 (AgHc-181), no archaeological resources were identified during the Stage 2 survey of the study area. Therefore, in accordance with Section 2.2 and Section 7.8.4 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **the study area is considered free of further archaeological concern and no further archaeological assessment is required for the study area.**

The MTCS is asked to review the results presented and accept this report into the *Ontario Public Register of Archaeological Reports*.

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Advice on Compliance with Legislation
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6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c O.18 (Government of Ontario 1990b). The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the Ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* (Government of Ontario 1990b) for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed 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* (Government of Ontario 1990b). 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 (Government of Ontario 2002) requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Government and Consumer Services.

STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: LAFARGE BRANTFORD EXTENSION PROPERTY

Bibliography and Sources

January 28, 2019

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STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: LAFARGE BRANTFORD EXTENSION PROPERTY

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STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: LAFARGE BRANTFORD EXTENSION PROPERTY

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STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: LAFARGE BRANTFORD EXTENSION PROPERTY

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Images
January 28, 2019

8.0 IMAGES

8.1 PHOTOGRAPHS

Photo 1: Stage 2 test pit survey. Note excavation of test pit within one metre of the built structure, facing south



Photo 2: Stage 2 test pit survey, facing south



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: LAFARGE BRANTFORD EXTENSION PROPERTY

Images

January 28, 2019

Photo 3: Stage 2 pedestrian survey at five metre intervals, facing northwest



Photo 4: Stage 2 field conditions, facing north



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: LAFARGE BRANTFORD EXTENSION PROPERTY

Images

January 28, 2019

Photo 5: Stage 2 intensified pedestrian survey at one metre interval, facing south



Photo 6: Farm compound with structures, gravel driveway and landscaped lawn, facing south



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: LAFARGE BRANTFORD EXTENSION PROPERTY

Images
January 28, 2019

Photo 7: Farm compound with previous disturbance from well installation and modern utilities, facing northeast



Photo 8: Large piles of field stones adjacent to deep ground disturbance pit near centre of the study area, facing east



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: LAFARGE BRANTFORD EXTENSION PROPERTY

Images

January 28, 2019

Photo 9: Deep ground disturbance pit near the centre of the study area, facing north



Photo 10: Existing farmhouse at north end of the study area



Images
January 28, 2019

8.2 PLATES

Plate 1: Sample of Ceramics from Ginseng 1 (AgHc-181)



Plate 2: Sample of Household Artifacts Recovered from Ginseng 1 (AgHc-181)



Images
January 28, 2019

Plate 3: Structural Artifacts Recovered from Ginseng 1 (AgHc-181)



Glass, Window,
Cat. #4

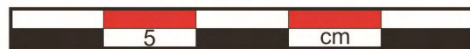
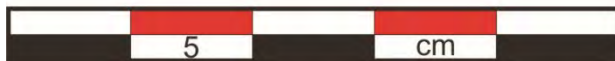


Plate 4: Recent Material Recovered from Ginseng 1 (AgHc-181)



Recent Material,
Cat. #15



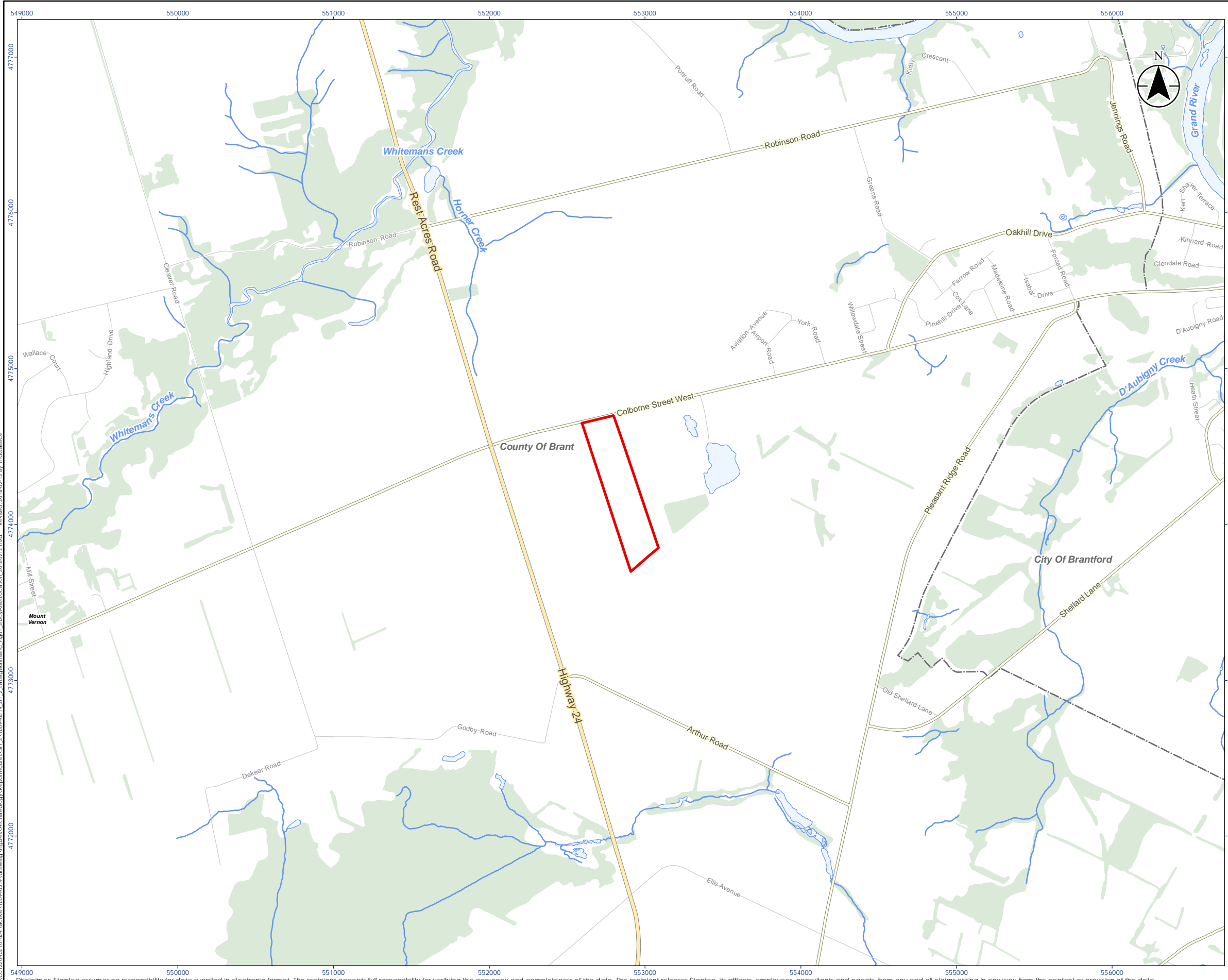
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: LAFARGE BRANTFORD EXTENSION PROPERTY

Maps

January 28, 2019

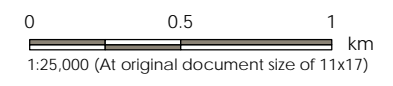
9.0 MAPS

All maps will follow on succeeding pages.

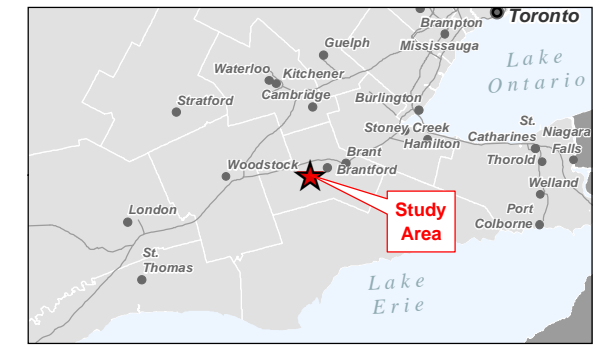


Legend

- Study Area
- Existing Features**
- Expressway / Highway
- Major Road
- Minor Road
- Watercourse
- Municipal Boundary - Lower Tier
- Waterbody
- Wooded Area



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2017.

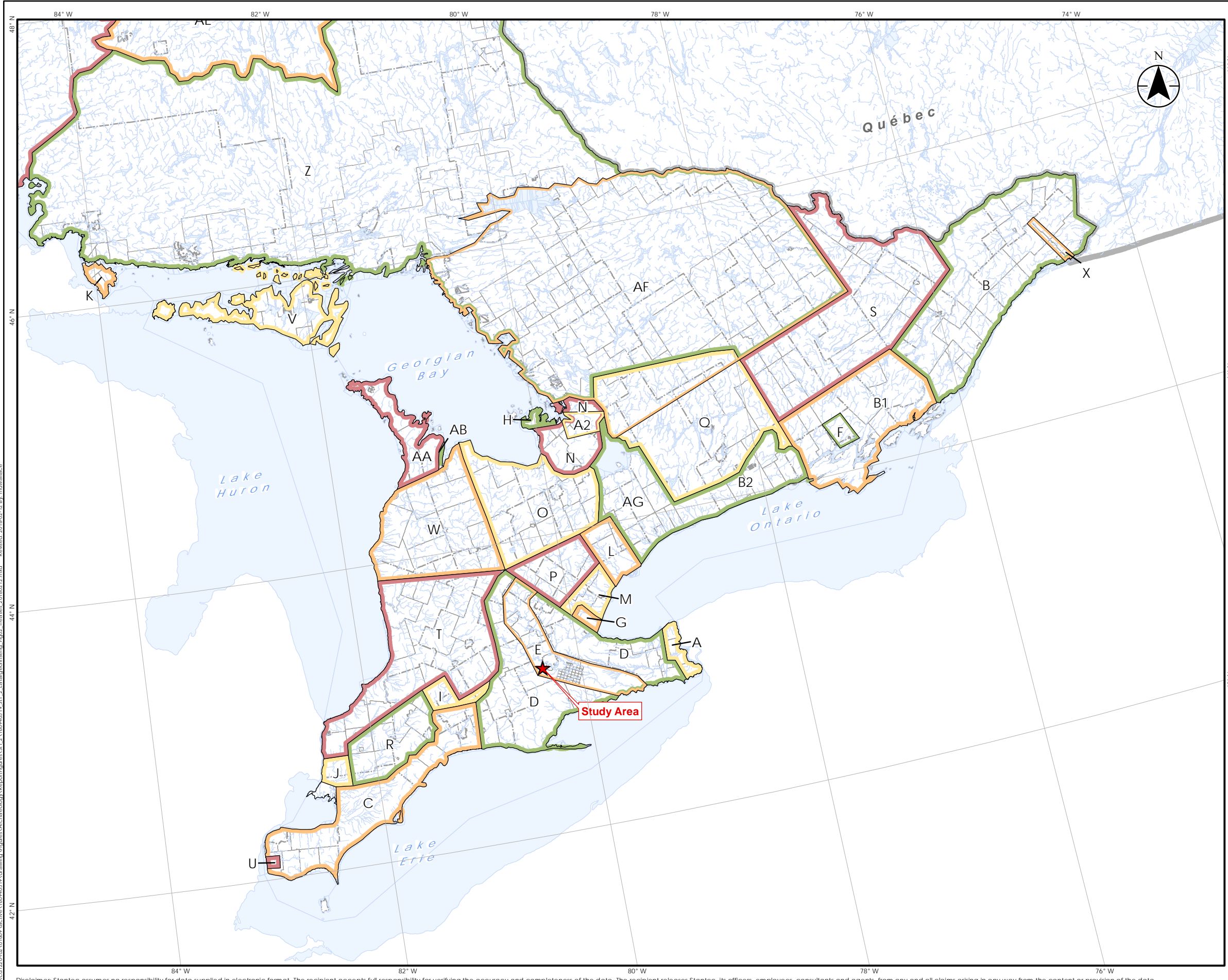


Project Location: 160940519 REVA
 County of Brant
 Prepared by MDW on 2018-02-12
 Technical Review by DH on 2018-02-12
 Independent Review by TC on 2018-05-06

Client/Project:
LAFARGE BRANTFORD EXTENSION
PROPERTY LAFARGE CANADA INC.
STAGE 2 ARCHAEOLOGICAL ASSESSMENT

Figure No.
1

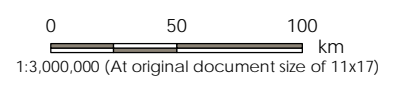
Title
Location of Study Area



Legend

- ★ Study Area
- Watercourse
- Waterbody
- ▭ Municipal Boundary - Upper Tier
- ▭ Municipal Boundary - Lower or Single Tier

- A Treaty No. 381, May 9th, 1781 (Mississauga and Chippewa)
- A2 John Collins' Purchase, 1785 (Chippewa)
- AA Treaty No. 72, October 30th, 1854 (Chippewa)
- AB Treaty No. 82, February 9th, 1857 (Chippewa)
- AE Treaty No. 9, James Bay 1905, 1906 (Ojibway and Cree)
- AF Williams Treaty, October 31st and November 15th, 1923 (Chippewa and Mississauga)
- AG Williams Treaty, October 31st, 1923 (Chippewa)
- B Crawford's Purchase, October 9th, 1783 (Algonquin and Iroquois)
- B1 Crawford's Purchase, October 9th, 1783 (Mississauga)
- B2 Crawford's Purchase, 1783, 1787, 1788 (Mississauga)
- C Treaty No. 2, May 19th, 1790 (Odawa, Chippewa, Pottawatomi, and Huron)
- D Treaty No. 3, December 2nd, 1792 (Mississauga)
- E Haldimand Tract: from the Crown to the Mohawk, 1793
- F Tyendinaga: from the Crown to the Mohawk, 1793
- G Treaty No. 3 3/4: from the Crown to Joseph Brant, October 24th, 1795
- H Treaty No. 5, May 22nd, 1798 (Chippewa)
- I Treaty No. 6, September 7th, 1796 (Chippewa)
- J Treaty No. 7, September 7th, 1796 (Chippewa)
- K Treaty No. 11, June 30th, 1798 (Chippewa)
- L Treaty No. 13, August 1st, 1805 (Mississauga)
- M Treaty No. 13A, August 2nd, 1805 (Mississauga)
- N Treaty No. 16, November 18th, 1815 (Chippewa)
- O Treaty No. 18, October 17th, 1818 (Chippewa)
- P Treaty No. 19, October 28th 1818 (Chippewa)
- Q Treaty No. 20, November 5th, 1818 (Chippewa)
- R Treaty No. 21, March 9th, 1819 (Chippewa)
- S Treaty No. 27, May 31st, 1819 (Mississauga)
- T Treaty No. 27½, April 25th, 1825 (Ojibwa and Chippewa)
- U Treaty No. 35, August 13th, 1833 (Wyandot or Huron)
- V Treaty No. 45, August 9th, 1836 (Chippewa and Odawa, "For All Indians To Reside Thereon")
- W Treaty No. 45½, August 9th, 1836 (Saugeen)
- X Treaty No. 57, June 1st, 1847 (Iroquois of St. Regis)
- Y Treaty No. 60, Robinson, Superior, September 7th, 1850 (Ojibwa)
- Z Treaty No. 61, Robinson, Huron, September 9th, 1850 (Ojibwa)



- Notes
1. Coordinate System: NAD 1983 Statistics Canada Lambert
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2016.
 3. Treaty boundaries adapted from Morris 1943 (1964 reprint). For cartographic representation only.

Project Location 160940519 REVA
 County of Brant Prepared by MDW on 2018-02-12
 Technical Review by DH on 2018-02-12
 Independent Review by TC on 2018-05-06

Client/Project
 LAFARGE BRANTFORD EXTENSION
 PROPERTY LAFARGE CANADA INC.
 STAGE 2 ARCHAEOLOGICAL ASSESSMENT

Figure No.
 2

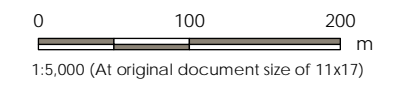
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 Treaties and Purchases
 (Adapted from Morris 1943)

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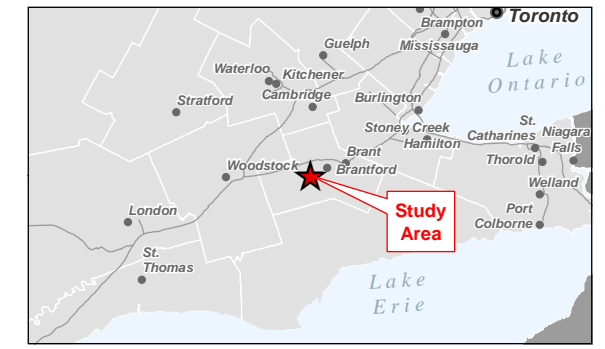
Legend

- Study Area
- ▲ Fixed Reference Landmark
- Stage 2**
- ↻ Photo Location and Direction
- Methods and Results**
- Pedestrian Survey at 1 m Intervals
- Pedestrian Survey at 5 m Intervals
- Previously Disturbed; No Archaeological Potential
- Test Pit Survey at 5 m Intervals



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2016.
3. Orthoimagery © First Base Solutions, 2014. Image Date 2017.



Project Location: 160940519 REVA
 County of Brant
 Prepared by MDW on 2018-05-31
 Technical Review by DH on 2018-02-12
 Independent Review by TC on 2018-05-06

Client/Project:
LAFARGE BRANTFORD EXTENSION
PROPERTY LAFARGE CANADA INC.
STAGE 2 ARCHAEOLOGICAL ASSESSMENT

Figure No.
5
 Title
Stage 2 Archaeological Assessment
Methods

\\cd\120\02\0160940519\0160940519_S11_2_Lafarge_Greasehd_E005_Site2\Methods.mxd
 Revised: 2018-05-31 By: mdwallace
 4773600 4774000 4774400 4774800

STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: LAFARGE BRANTFORD EXTENSION PROPERTY

Closure
January 28, 2019

10.0 CLOSURE

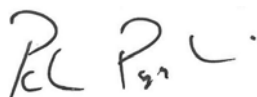
This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential archaeological resources associated with the identified property.

All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report, and are based solely on the scope of work described in the report, the limited data available and the results of the work. The conclusions are based on the conditions encountered by Stantec at the time the work was performed. Due to the nature of archaeological assessment, which consists of systematic sampling, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire property.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report. We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.

STANTEC CONSULTING LTD.



Quality Review _____
(signature)

Peter Popkin, Associate, Senior Archaeologist



Independent Review _____
(signature)

Tracie Carmichael, Senior Associate, Managing Leader

APPENDIX A: ARTIFACT CATALOGUE

STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: LAFARGE BRANTFORD EXTENSION PROPERTY

Appendix A Ginseng 1 (AgHc-181) Stage 2 Artifact Catalogue
January 28, 2019

Appendix A GINSENG 1 (AgHc-181) STAGE 2 ARTIFACT CATALOGUE

A.1 GINSENG 1 (AgHc-181) CATALOGUE

Cat . #	Subunit or Context	Depth (m)	Artifact	Quantity	Form / Function	Comments
1	Surface find 101	0	glass, bottle	1		colourless, thick likely modern
2	Surface find 102	0	pearlware, transfer printed	1	flatware / unknown (non-rim)	"olde blue" floral pattern on interior
3	Surface find 103	0	whiteware, transfer printed	1	unidentifiable / unknown (non-rim)	blue transfer printed line and dots
4	Surface find 104	0	glass, window	1		greater than 1.6 mm
5	Surface find 105	0	creamware, moulded	1	flatware / twiffler plate (rim)	unscaloped moulded edge, pink transfer print unidentified pattern
6	Surface find 106	0	porcelain, transfer printed	1	hollowware / mug (rim)	mug with 2 green bands on exterior, 1 thick dark green at rim above thin light green band
7	Surface find 107	0	glass, bottle	1		colourless, thick likely modern
8	Surface find 108	0	earthenware, red	1	hollowware / unknown (non-rim)	one side grey glazed, other is exfoliated
9	Surface find 109	0	glass, bottle	1		burnt and melted crown finish
10	Surface find 110	0	pearlware, undecorated	1	flatware / unknown (non-rim)	
11	Surface find 111	0	ceramic, undetermined	1	flatware / unknown (non-rim)	burnt, base fragment unidentifiable makers mark
12	Surface find 112	0	whiteware, undecorated	1	unidentifiable / unknown (non-rim)	

STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: LAFARGE BRANTFORD EXTENSION PROPERTY

Appendix A Ginseng 1 (AgHc-181) Stage 2 Artifact Catalogue
 January 28, 2019

Cat . #	Subunit or Context	Depth (m)	Artifact	Quantity	Form / Function	Comments
13	Surface find 113	0	stoneware, salt-glazed	1	hollowware / unknown (non-rim)	grey salt-glazed exterior, interior dark brown glazed
14	Surface find 114	0	pearlware, transfer printed	1	unidentifiable / unknown (non-rim)	base, black, unknown design, unidentifiable makers mark on reverse
15	Surface find 115	0	recent material	1	unidentifiable / unknown (non-rim)	base with makers mark: "break a ... Chip R ... Cor..." break and chip resistant Correlle dish. Not included in the ceramic assemblage calculations
16	Surface find 116	0	earthenware, red	1	hollowware / unknown (non-rim)	no exterior glaze, dark brown interior
17	Surface find 117	0	semi-porcelain	1	unidentifiable / unknown (rim)	white exterior, grey interior
18	Surface find 118	0	whiteware, transfer printed	1	unidentifiable / unknown (non-rim)	unknown pattern, blue, one side exfoliated
19	Surface find 119	0	glass, bottle	1		colourless, thick likely modern
20	Surface find 120	0	glass, jar	1		solarized reddish-pink, threaded ground rim