

**Stage 2 Archaeological Assessment
(Property Assessment)**

**Bornish Wind Farm Project
East Williams, West Williams, and Adelaide Townships,
Middlesex County, Ontario**

FIT-F2BNU4R

REVISED REPORT

Prepared for:

GENIVAR

600 Cochrane Drive, Suite 500
Markham, ON L3R 5K3
Tel: (905) 475-7270
Fax: (905) 475-5994
www.genivar.com

Archaeological Licence P057 (Robert Pihl)
MCL PIF 057-534-2009 & P057-613-2010
ASI File 09EA-145

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Archaeological Services Inc.

528 Bathurst St.
Toronto, Ontario
Canada, M5S 2P9

T 416-966-1069
F 416-966-9723
info@iASI.to/www.iASI.to

Stage 2 Archaeological Assessment (Property Assessment)

Bornish Wind Farm Project Environmental Assessment, East Williams, West Williams and Adelaide Townships, County of Middlesex, Ontario

EXECUTIVE SUMMARY

Archaeological Services Inc. (ASI) was contracted by GENIVAR, Markham, on behalf of NextEra Energy Canada to conduct a Stage 2 archaeological assessment (property assessment) for the Bornish Wind Farm Project in East Williams, West Williams and Adelaide Townships, Middlesex County, Ontario. The project comprises 49 wind turbine locations with their associated crane pads, crane paths, access roads, and underground electric collection system (based on the August 2010 Layout).

The previous Stage 1 background research and property inspection, which focused on a larger study area that also included two other project areas, determined that one archaeological site has been registered within two kilometres of the proposed Bornish project area. A review of the general physiography and local nineteenth century land use suggested that the Bornish project area has potential for the identification of Aboriginal and Euro-Canadian archaeological sites.

The initial Stage 2 field work was conducted in June, November, and December 2009 under acceptable survey and weather conditions. Additional fieldwork was conducted in April, May, July and August 2010, also under acceptable survey conditions. The project area is largely comprised of agricultural fields, and all fieldwork focused on proposed facility locations where open vegetation conditions permitted systematic pedestrian survey.

During the June to December 2009 field work, four archaeological sites were identified: one pre-contact Aboriginal find (Site P1; AgHk-62), and three Euro-Canadian homesteads (Sites H1, H2 and H3; AgHk-63, 64 and 65, respectively). Revisions to the design facilities were subsequently made, so that none of these sites will be impacted.

Survey resumed in May 2010 and an additional 29 pre-contact Aboriginal sites (P2 to P31; AgHk-74 to AgHk-94, respectively) were identified in the study area. Multiple layout revisions were made throughout the field season, so that most of the sites have either been avoided by the current facilities layout (dated August 2010) or are now deemed to have no cultural heritage value or interest. Four sites, however, could not be avoided and are considered to have cultural heritage value or interest—Sites P16 (AgHk-82), P17 (AgHk-83), P26 (AgHk-90) and P31 (AgHk-94).

ASI therefore makes the following general recommendations:

- A Stage 3 site-specific assessment will be required for Sites P16 (AgHk-82), P17 (AgHk-83), P26 (AgHk-90), and P31 (AgHk-31), in the vicinity of turbine facilities T17, T19, T36 and T27, respectively; and
- No further archaeological assessment is required for the remaining facilities—T1-T49, excluding those listed above, and these may be cleared of further archaeological concern.

**ARCHAEOLOGICAL SERVICES INC.
ENVIRONMENTAL ASSESSMENT DIVISION**

PROJECT PERSONNEL

<i>Senior Project Manager:</i>	Robert Pihl, MA, CAHP (MCL licence P057) Partner and Senior Archaeologist, Manager, Environmental Assessment Division
Project Coordination:	Sarah Jagelewski, Hon BA Research Archaeologist
<i>Project Director:</i>	Robert Pihl (MCL licence P057)
<i>Project Manager:</i>	Deborah Pihl (MCL licence R130) Staff Archaeologist
<i>Field Director:</i>	Deborah Pihl Andrew Riddle, PhD (MCL licence R146) Staff Archaeologist
<i>Field Archaeologists:</i>	Jennifer Rose, Hon BA Devon Brusey, Hon BA Amy Fox, Hon BA Kayla Reynolds, Hon. BA Robert Traut, CPSESCS
Report Preparation:	Deborah Pihl Andrew Riddle
Graphics:	Jonas Fernandez, MSc.(MCL licence R281) GIS/CAD Technician
Report Reviewer:	Robert Pihl

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APPENDIX A Bornish Wind Farm Project: Stage 2 Survey Data

APPENDIX B Bornish Wind Farm Project: Artifact Catalogues

1.0 INTRODUCTION

Archaeological Services Inc. (ASI) was contracted by GENIVAR, Markham, on behalf of NextEra Energy Canada, to conduct a Stage 2 archaeological assessment (property assessment) of the Bornish Wind Farm Project, in Middlesex County, Ontario (Figure 1). The Bornish project study area spans much of Concessions 12 and 13, as well as smaller portions of adjacent concessions of West Williams Township. It also includes a small portion of East Williams Township, Concessions 12 and 13. Forty-nine turbine locations, associated crane paths, access roads, and an underground electric collection system are proposed within this area (based on the August 2010 layout).

Authorization to carry out the activities necessary for the completion of the Stage 2 assessment was granted to ASI by GENIVAR on May 28, 2009.

All work was conducted in accordance with the *Ontario Heritage Act* (MCL 2005) and will be reviewed by the Ministry of Tourism and Culture (MTC) against the *Archaeological Assessment Technical Guidelines* (MCL 1993). ASI also consulted the draft *Standards and Guidelines for Consultant Archaeologists* (S & G) (MCL 2009) as “best practices” for this project.

This report summarizes the results of the Stage 1 background research and property inspection pertinent to the Bornish Wind Farm Project study area and presents the results of the Stage 2 property assessment carried out in 2009 and 2010. Based on these results, several recommendations are presented.

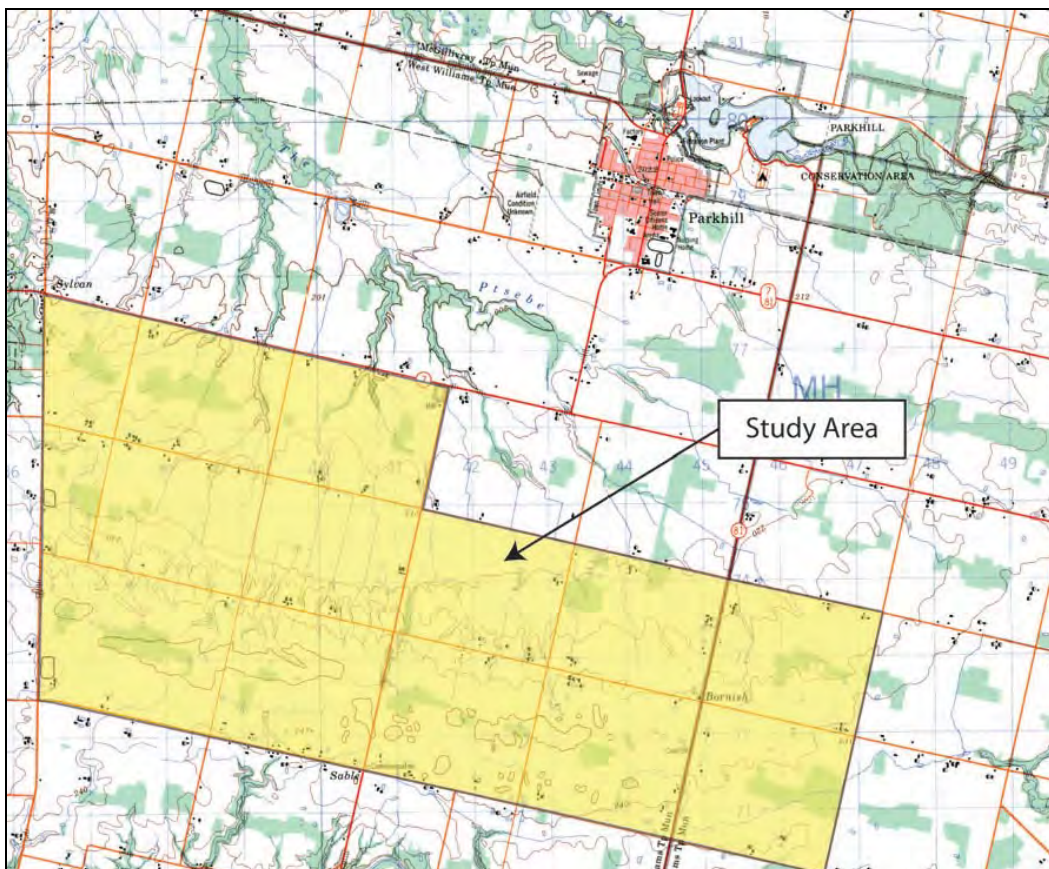


Figure 1: General Location of the Bornish Wind Farm Project Study Area (NTS 40 P/04 Parkhill)



2.0 SUMMARY OF STAGE 1 BACKGROUND RESEARCH AND PROPERTY INSPECTION

The Stage 1 background research and property inspection of the Bornish Wind Farm Project study area was conducted as part of a much larger Stage 1 study area that included Phase 1 and Phase 2 project areas (ASI 2008). Subsequent to that study, the turbine locations and associated crane paths and access roads were defined for the Bornish Wind Farm Project area. The Stage 1 report reviewed previous archaeological research, physiography, and land use history within the project area and vicinity to assess its known and potential archaeological resources. All Stage 1 results that are pertinent to the 16 October revised layout for the Bornish Wind Farm Project are summarized in this section.

The Ontario Archaeological Sites Database (OASD) maintained by the Ontario Ministry of Culture (MCL) was consulted (email communication, Robert von Bitter, MCL Data Coordinator, August 26, 2008). Based on that information, there is only one registered site within two kilometres of any of the proposed facilities for the Bornish project area: Site AgHk-17 is an isolated find of undetermined cultural affiliation.

Pre-contact Aboriginal occupation in the area is known from registered sites more than two kilometres distant. These sites indicate activity in the area dating back to Middle Archaic period ca 4500 years B.P. One site just west of the study area near the Ausable River includes Early and Middle Woodland period components. A cluster of sites five kilometres to the south includes Middle Archaic and early Late Woodland villages and a small hamlet. Equidistant to the north are a number of small campsites of varying or indeterminate ages.

The study area is situated near the southeast end of the Horseshoe Moraine. The east side of the elongate deposit of calcareous till follows the eastern shore of Lake Huron (Chapman and Putnam 1984:127-129). The project area straddles the top of a pronounced west-northwest to east-southeast trending beach ridge, formed by Glacial Lake Warren approximately 13,000 years ago (Chapman and Putnam 1967: 21, 33, 64). The drainage divide on the top of the ridge approximates the Concession 11-12 boundary. Bornish Drive extends along the north side of the ridge, overlooking the undulating northern slope and the flat lands below. The base of the slope approximates the Concession 13-14 boundary. Naturally occurring chert is often locally abundant in the silty clay soils of the beach ridge slope. The northern slope is well drained by numerous small streams, most of which appear to be seasonal. These small streams are indicated on the project mapping. Terrain atop the ridge is gently undulating with poorly drained depressions that often coincide with small woodlots. At the base of the slope, most of the streams have been channelized to improve drainage. Calcareous silty clay soils of the Huron association comprise almost all of the study area, with drainage dependent on whether the location is atop or below the beach ridge.

The MCL's 2009 draft S & G Section 1.3.1 stipulate a number of characteristics that indicate archaeological potential. These include the presence of previously identified archaeological sites, water sources, and elevated topography, and all are prominent features throughout the project area. Thus, it is expected that there is potential for pre-contact Aboriginal sites over the majority of the project area.

For the Euro-Canadian period, the majority of early nineteenth century farmsteads (i.e. those which are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth century maps) are likely to be captured by the basic proximity to the water model used for pre-contact Aboriginal site potential, since these occupations were subject to similar environmental constraints. An added factor, however, is the development of the network of concession roads and railroads through the course of the nineteenth century. These transportation routes frequently influenced the siting of



farmsteads and businesses. Accordingly, undisturbed lands within 100 m of an early settlement road are also considered to have potential for the presence of Euro-Canadian archaeological sites.

The Townships of East and West Williams were part of lands patented around 1830 by the Canada Company, a large chartered British land development company. The townships, originally one, were surveyed and became part of Middlesex County around 1850. A number of Scottish families were among the earliest settlers in the area, taking up residence in 1849 on either side of Bornish Drive. By 1860, they had established the St Columa Roman Catholic Church on the northwest corner of Centre Road and Bornish Drive in the hamlet of Bornish. At that time, burials were moved from a nearby temporary cemetery in Lot 8, Concession XII to the cemetery adjacent to the church. The township was divided into east and west portions in 1860.

Although numerous farmsteads, churches, cemeteries, school houses, post offices and mills are illustrated on the historic atlas maps, it should be noted that not all features of interest were mapped systematically in the Ontario series of historical atlases. Given that the atlases were financed by subscription, and subscribers were given preference with regard to the level of detail provided on the maps, some features might not be represented in the atlas. Moreover, not every feature of interest would have been within the scope of the atlases. The 1878 *Illustrated Atlas of the County of Middlesex* was reviewed to determine the potential for the presence of nineteenth century historical archaeological remains within the project area.

The study area includes lands within West Williams, East Williams, and Adelaide Townships. The West Williams lands include most of Lots 3 to 16 in Concessions 12 and 13, as well as a few lots in Concessions 11, 14, 15, and Concession West of Town Line (WTL). The East Williams lands include a few lots in Concessions 12, 13 and Concession East of Town Line (ETL). The project substation is in Lot 7, Concession 3 of Adelaide Township. Although numerous homesteads are depicted throughout the study area, the atlas indicates only one other historic feature: a schoolhouse in Lot 9, Concession XII on the southwest corner of Bornish Drive and Kerwood Road.

Historic cemeteries require particular attention during property assessment if impact is anticipated in their vicinity. The only historic cemetery in the vicinity of the project area is adjacent to St. Columba Church in Bornish, a location well removed from any proposed work area.

Therefore, depending on the degree of previous land disturbance, it may be concluded that there is potential for the recovery of Aboriginal as well as Euro-Canadian sites within the Bornish project area.



3.0 STAGE 2 PROPERTY ASSESSMENT

In accordance with the determination of archaeological potential completed as part of the Stage 1 background research and property inspection, ASI was retained to conduct a Stage 2 property assessment of the Bornish project area, which includes the proposed turbine sites and associated crane pads, crane paths, and access roads, and a substation in Adelaide Township. The proposed facilities assessed in June 2009 reflected the June 2009 GENIVAR project plan. Based on the results of the June field work, design revisions were made (16 October 2009), and the late fall 2009 fieldwork utilized this revised layout. Additional revisions to the layout were made throughout the 2010 field season, resulting in the current August 2010 layout (Figure 2).

The Stage 2 field work was conducted in accordance with the *Ontario Heritage Act* (MCL 2005) and the 1993 *Technical Guidelines* (MTCR 1993) and using the 2009 draft S & G (MCL 2009) as “best practices”. The June 2009 field work was conducted under the supervision of Ms. Deborah Pihl (MCL license R130), ASI, and the November-December 2009 and May-August 2010 fieldwork was conducted under the supervision of Mr. Andrew Riddle (MCL license R146). The survey conditions were considered acceptable with spring and summer weather varying from light rain and overcast to sunny, and the late fall weather varying from cool to cold with occasional light rain or snow flurries. All survey conditions, methods and results are detailed in Appendix A and accompanying Figures 3 to 13.

3.1 Field Methodology

The assessed work sites include turbine locations, permanent access roads/crane paths, and the underground electric system (based on the August 2010 layout; Figure 2). At each turbine location, a 12 m by 36.5 m crane pad will be situated adjacent to the turbine on the side nearest the access road and tangentially oriented. Around each turbine, an area with a radius of 40 m will be cleared of vegetation for the lay down of the blades; *there will be no subsurface impact during the lay-down operation*. The permanent access roads and crane paths will be 10.5 m wide and are presumed to coincide where both are present. In addition, in certain locations, an underground electrical system will be installed between turbines, and this will require a 6 m wide assessment corridor.

GPS coordinates were used to determine the turbine locations in the field. The GPS unit used in the field is a Garmin eTrex 20, and all readings are within the UTM Grid Zone 17T and use NAD 83; no correction was employed. The size of the area surveyed for each turbine pad varied depending on crane path placement and orientation. At a minimum, a generous 75 m by 75 m (5,625 m² or 1.39 ac) crane pad area was assessed at each turbine site. A 30 m wide transect was assessed to accommodate the crane paths and/or access roads and a 15 m wide transect was assessed to accommodate collection lines.

It should be noted that the project lands are largely cultivated fields, a large proportion of which are being farmed using no-till practices. Crops include a rotation of beans, corn, and winter wheat. It was observed that the presence and concentration of crop residue varied greatly from field to field. Factors which affect the quantity of residue may include weathering, wind, nature of tillage, removal of corn as silage, etc. The presence and density of the previous crop residue was usually the determining factor as to whether ground surface visibility was acceptable. The nature of the crop residue has been included in Appendix A in the column labelled “Ground Preparation/Vegetation”.

On lands *with open ground conditions, e.g., ploughed and/or newly planted*, the assessment is conducted by pedestrian survey which involves systematically walking the property, mapping and collecting artifacts



found on the ground surface. Survey transects are spaced at maximum intervals of 5 m, and survey conditions were considered acceptable if ground surface visibility was 80% or better and weathering was thorough. When archaeological resources are found, survey transects are decreased to 1 m intervals over a 20 m radius around the find to determine whether it is an isolated find or part of a larger scatter. Most of the Project layout for this assessment is situated exclusively within agricultural lands that are under active cultivation and therefore subject to pedestrian survey per the *S & G*.

Due to the extensive use of no-till practices, many fields within the Project study area are not cultivated in the traditional sense and normal surface visibility is obviously compromised. These fields were therefore specially prepared by ploughing in accordance with the 2009 draft *S & G*: ploughing was deep enough to provide total topsoil exposure, but not deeper than previous ploughing.

A small percentage of the project is contained on lands *with closed ground conditions*, e.g., non-cropland such as woods, scrub, pasture or lawn; these were assessed by test pit survey. This involves the hand excavation of 30 cm diameter units (test pits) through the topsoil and into the first 5 cm of subsoil, and the screening of all test pit fills through 6 mm mesh to facilitate artifact recovery. All test pits were backfilled and their locations recorded on field maps. When archaeological resources were uncovered, artifacts were collected according to their associated pit and additional test pits were excavated as required to define site boundaries, if possible. Any factors that precluded the excavation of test pits (e.g. excessive slope, drainage, exposed bedrock, previous disturbance) were noted. All such areas were mapped and representative examples of all such areas were photographed.

Lands that have no archaeological potential due to previous disturbance or low potential due to low-lying or wet conditions or steep slope were not assessed. If present, they were mapped (see Figures 3, 5-6, 11-12) and photo-documented as required.

3.2 Stage 2 Field Assessment : June to December 2009

During the 2009 fieldwork, approximately half of the project facilities of the original June 2009 layout was assessed. At approximately half of the 49 turbine sites, the crane pads were completely assessed and at two more turbines they were partially assessed. Assessment was also completed on approximately half of the proposed crane paths and access roads, and the results of this work are documented in Map Sheets 1 to 11 (see Figures 3-13). It should be noted, however, that revisions to the Project layout were made in 2010 (per the August 2010 layout) that rendered much of the 2009 assessment work inapplicable; the 2010 field results are further discussed in Section 3.3.

In the course of the 2009 Stage 2 assessment, four sites were identified, and they are discussed in more detail in the following sections; the locational information for these sites is listed in Table 1.

Table 1: Archaeological Sites Identified in Study Area (2009)

Field Name	Borden Number	Locational Coordinates (NAD 83, Accuracy 5 m)	
P1	AgHk-62	UTM 17T 0434450 4771350	elev. 242m ASL (from NTS map)
H1	AgHk-63	UTM 17T 0439128 4773821	elev. 237 m ASL
H2	AgHk-64	UTM 17T 0438219 4774120	elev. 241 m ASL
H3	AgHk-65	UTM 17T 0438236 4773995	elev. 236 m ASL



3.2.1 Site P1 (AgHk-62)

Site P1 (AgHk-62) is an isolated pre-contact Aboriginal find that was identified during pedestrian survey of the crane path/access road extending westward from Centre Road to T21 (June 2009 layout; Figure 11). Survey conditions consisted of well weathered soil, two inch tall beans (Plate 69), and a light cover of wheat residue from the preceding crop; these conditions were considered acceptable for pedestrian survey (80% ground surface visibility). Additional pedestrian survey at 1 m intervals was conducted within a 20 m radius of the find, but no additional material was identified. The find is located 15 m north-northeast of the outer row of trees in the adjacent fencerow. The undulating terrain atop the beach ridge slopes toward the east and includes a seasonal stream 40 m northeast of the find.

The artifact is a midsection fragment of a projectile point (Plate 84) fashioned of Kettle Point chert (Appendix B). Although non-diagnostic, notching is visible. The point measures 17 mm in width, 5 mm in thickness, and 22 mm in incomplete length.

In view of the isolated nature of the find and limited cultural heritage value or interest, no further archaeological assessment of Site P1 (AgHk-62) is recommended. The find location will not be impacted by the revised layout (16 October 2009) that moved the access road/crane path more than 100 m to the north.

3.2.2 Site H1 (AgHk-63)

Site H1 (AgHk-63) is a homestead location, identified during pedestrian survey of the crane path/access road extending northward from a now outdated crane path location along the north side of Bornish Drive near T22 (Figure 5). Survey conditions consisted of well weathered, no-till soils, two inch high beans, and a light cover of wheat residue; these conditions were considered acceptable for pedestrian survey (80% ground surface visibility) (Plate 23). The surface scatter of historic artifacts covered an area approximately 25 m in diameter that was intensively surveyed at 1 m intervals. To the north of the scatter, a pile of rock and grass separates the site from the proposed turbine location. In view of the lack of associated artifacts, the rock pile may be the remnant of a barn, outbuilding or, possibly, a well. The site is situated on a knoll overlooking the undulating northward slope of the beach ridge. Small seasonal streams occupy swales 100 m to the west and 75 m to the east.

A representative sample of 34 artifacts and one bone fragment was collected (Appendix B) and is summarized in Table 1. Most of the ceramics are ironstone, many with moulded motifs, although flow printed and painted decoration are also represented. One piece of Refined White Earthenware (RWE) with a brown stamped decoration is also present (Plate 85). The predominance of ironstone is typical of assemblages dating to the period 1870-1890. The presence of the window glass as well as the domestic material is consistent with a homestead formerly in this location.

The 1878 atlas indicates a residence and orchard in the vicinity of Site H1 on the west half of Lot 12, Concession 13, West Williams Township. At that time, Donald Steel owned this half lot as well as three others to the west and northwest; the other two properties included two additional farmsteads.

Based on the artifact assemblage, which dates to the fourth quarter of the nineteenth century, Site H1 (AgHk-63) is a Euro-Canadian homestead with potential cultural heritage value or interest.

In the revised layout (August 2010), however, the crane path/access road ROW was re-located so that it now approaches the turbine from the north rather than the south, thus avoiding impact to Site H1 (AgHk-



63), now located more than 50 m to the south. Since the revised layout will not impact the site and is more than 30 m distant, no further archaeological assessment of the site is recommended.

Table 2: Site H1 (AgHk-63) Stage 2– Summary of Representative Artifacts

Functional Class	Artifact Type	Description	Freq	Class Freq
Ceramic Whiteware- (predominantly tableware)	RWE	stamped,	1	19
	Ironstone	includes 1 blue flow printed, 1 painted, and 4 moulded wheat motifs	18	
Ceramic-Undetermined	Stoneware			2
Glass – Food Storage	Jar, crown			1
Glass – Unident Container	Unidentified	(1 burnt)		8
Tools/Equipment	Harness			1
	buckle			
Personal	Button, bone			1
Architectural	Glass, window			2
TOTAL				34
Faunal		large mammal	1	

3.2.3 Site H2 (AgHk-64)

Site H2 (AgHk-64) is probably a homestead location and was identified during pedestrian survey of a now re-located turbine site (Figure 5). Survey conditions consisted of well-weathered soils and tilled three inch high corn; these conditions were considered acceptable for pedestrian survey (80% surface visibility). A surface scatter of historic artifacts was identified by intensive survey at 1 m metre intervals, and the site covered an area approximately 35 m east-west by 60 m north-south just west of the eastern lot line, approximately 150 m north of Bornish Drive. The site is situated on a rise in the undulating terrain atop the north slope of the beach ridge. To the west of the scatter, the ground slopes to a seasonal stream 60 m away. The ground also slopes away to the north and east. A pile of rubble that may be the ruins of a barn is located 50 m southwest of the site, on the opposite side of the seasonal stream (Plate 25). After the site was identified and defined, a wider area was pedestrian surveyed in order to identify possible alternative locations for the proposed work sites. All assessed areas are indicated on Figure 5.

A representative sample of 35 artifacts and one bone fragment was collected (Appendix B) and is summarized in Table 2. The artifacts appear to reflect domestic activities consistent with a homestead location. The presence of blue printed, sponged, stamped and Late Palette painted decoration on refined white earthenware is consistent with occupation in the period between 1845 and 1870 (Plate 86).

The site is located on Lot 14, Concession 13, in the southeast portion of the west half of the lot. Although the 1878 historic atlas does not indicate a residence on the west half of Lot 12, an orchard is depicted in the vicinity of the rubble pile to the southwest. At that time, the west half of the lot was owned by Jonathan McPhee, who also owned the half lot on the south side of Bornish Drive where a residence was situated. Thus, based on the nature of the artifact scatter, it is possible that it predates McPhee's ownership of the two lot portions, when he presumably did not occupy the residence located at Site H2, using, instead, the residence south of Bornish Drive.

Table 3: Site H2 (AgHk-64) Stage 2– Summary of Representative Artifacts

Functional Class	Artifact Type	Description	Freq	Class Freq
Ceramic- Whiteware (table and teaware)	RWE	includes 1 straight edgeware, 1 moulded edgeware, 5 blue printed including 2 blue willow, 6 sponged, 1 late palette painted, 1 factory turned	16	20
	Unidentified		4	
Ceramic-other	Yellowware	Mocha	1	5
	Buff earthenware		1	
	Unident.	Stamped	1	
	Coarse red earthenware		2	
Glass	Container		4	8
	Unident		4	
Personal	Button?	glass, large faceted	1	2
	Pipe	white clay, bowl	1	
TOTAL				35
Faunal		Mammal	2	

Based on the artifact assemblage dating to the third quarter of the nineteenth century and the absence of the structure in the 1878 atlas, the Euro-Canadian homestead identified as Site H2 (AgHk-64) may be of cultural significance. The revised August 2010 layout (Figure 5) has relocated all facilities approximately 380 m away from the vicinity of H2. Therefore, no further archaeological assessment is recommended for Site H2.

3.2.4 Site H3 (AgHk-65—Hugh McPhee Site)

Site H3 (AgHk-65) is probably a homestead location and was identified during pedestrian survey of a former access road since re-located due to its potential impact to nearby Site H2 (Figure 5). Survey conditions consisted of well weathered soils, tilled two inch high beans, and a light scatter of wheat residue; the condition were considered acceptable (better than 80% ground surface visibility) (Plate 25). The surface scatter of historic artifacts covered an area approximately 20 m north-south by 33 m east west that was intensively surveyed at 1 m intervals. The scatter is in the extreme southwest corner of the lot and extends to within 10 m of the west lot line and 3 m of the north side of the Bornish Drive right-of-way. The site is situated on a level area with a seasonal stream approximately 100 m to the west.

A representative sample of 20 artifacts was collected (Appendix B) and is summarized in Table 3. The artifacts appear to reflect domestic activities consistent with a homestead. The presence of stamped decoration on refined white earthenware and the predominance of ironstone suggest that the collected artifacts date to the period between 1845 and 1890 (Plate 87).



Table 4: Site H3 (AgHk-65) Stage 2– Summary of Representative Artifacts

Functional Class	Artifact Type	Description	Freq	Class Freq
Ceramic- Whiteware (predominantly table & teaware)	RWE	includes 3 stamped, 1 blue painted	5	14
	Ironstone	includes factory slip banded	9	
Ceramic- Beverage Service	Jackfield	red earthenware with dark brown glaze on teapot lid		1
Glass – Undetermined Function		includes amber, small bottle mouth, pressed glass		4
	Container Unidentified		3 1	
Architectural	Glass, window			1
TOTAL				20

Site H3 (AgHk-65) is located on Lot 14, Concession 13, in the southwest corner of the east half of the lot. The 1878 historic atlas indicates a residence in that vicinity and an orchard near the middle of the south edge of the lot half. At that time, the east half of the lot was owned by Hugh McPhee. The date of occupation as indicated by the artifact sample is ca. 1845-1890, and this is consistent with the atlas information.

Based on the artifact assemblage dating to the second half of the nineteenth century and the presence of the structure in the 1878 atlas, the Euro-Canadian homestead identified as Site H3 may be of cultural heritage value or interest. The revised August 2010 layout (Figure 5) has relocated all facilities over 500 m away from the vicinity of H3, and therefore no further archaeological assessment is recommended for Site H3.

3.3 Stage 2 Field Assessment: May to August 2010

Several revised layouts were provided during the 2010 field season, partly in response to archaeological site identification within the study area. These modifications to the facility layout were in part aimed to avoid impacting potentially significant archaeological sites. The changes to the layout are extensive and, consequently, few areas assessed in 2009 are applicable to the August 2010 layout as presented in Figures 3-13. Nevertheless, all areas assessed in 2009 and 2010 are illustrated in these figures. The assessment of the August 2010 layout facilities between May and August 2010 is summarized in Appendix A.

Twenty-six pre-contact Aboriginal sites were identified in the course of the 2010 Stage 2 assessment. General site locations are illustrated in Figure 2 and locational data are listed in Table 4.



Table 5: Pre-Contact Archaeological Sites Identified in Study Area (2010 Field Season)

Field Name	Borden Number	Locational Coordinates and Elevation (NAD 83, Accuracy 5 m)
P2	AgHk-74	UTM 17T 0439611 4773017 elev. 245m ASL
P3	AgHk-75	UTM 17T 0440673 4772830 elev. 241m ASL
P4	AgHk-76	UTM 17T 0441309 4773764 elev. 230m ASL
P5	AgHk-77	UTM 17T 0441482 4773635 elev. 223m ASL
P6	-	UTM 17T 0438587 4773192 elev. 241m ASL
P8	AgHk-79	UTM 17T 0445516 4771290 elev. 236m ASL
P9	AgHk-80	UTM 17T 0441381 4772633 elev. 245m ASL
P10	AgHk-81	UTM 17T 0440856 4771729 elev. 243m ASL
P11	-	UTM 17T 0445251 4771368 elev. 243m ASL
P12	-	UTM 17T 0444880 4771429 elev. 239m ASL
P14	-	UTM 17T 0440742 4772844 elev. 245m ASL
P15	-	UTM 17T 0443042 4773755 elev. 224m ASL
P16	AgHk-82	UTM 17T 0443427 4772029 elev. 251m ASL
P17	AgHk-83	UTM 17T 0443373 4772106 elev. 249m ASL
P19	AgHk-85	UTM 17T 0443069 4772161 elev. 242m ASL
P20	AgHk-86	UTM 17T 0442888 4771746 elev. 242m ASL
P21	AgHk-87	UTM 17T 0441927 4772524 elev. 243m ASL
P22	-	UTM 17T 0442513 4473398 elev. 228m ASL
P23	-	UTM 17T 0442339 4773436 elev. 224m ASL
P24	AgHk-88	UTM 17T 0442433 4773338 elev. 225m ASL
P25	AgHk-89	UTM 17T 0441287 4773521 elev. 228m ASL
P26	AgHk-90	UTM 17T 0441351 4773670 elev. 223m ASL
P27	AgHk-91	UTM 17T 0439743 4774128 elev. 220m ASL
P29	AgHk-92	UTM 17T 0439674 4774093 elev. 227m ASL
P30	AgHk-93	UTM 17T 0443120 4773724 elev. 223m ASL
P31	AgHk-94	UTM 17T 0440315 4773784 elev. 231m ASL

In the following sections, the identified sites are discussed in more detail.

3.3.1 Site P2 (AgHk-74)

Site P2 is an isolated pre-contact Aboriginal find that was identified during pedestrian survey of the crane path/access road extending westward from Roddick Road to T1 (August 2010 layout; Figure 6). Survey conditions consisted of well weathered soil, and light hay residue (Plate 26) from the preceding crop; these conditions were considered acceptable for pedestrian survey (80% ground surface visibility). Additional pedestrian survey at 1 m intervals was conducted within a 20 m radius of the find, but no additional material was identified. The find is located approximately 425 m north of a woodlot, just west of the field separation. The area is characterized by rolling terrain with numerous seasonal drainages winding between the higher, better drained rises.

The artifact is a nearly complete projectile point (Plate 88) made of Kettle Point chert (Appendix B). The specimen is classified as a Brewerton Corner-Notched point (Middle Archaic period). The distal point of the specimen is missing, as is a portion of the left lateral basal ear. The point measures 35.5 mm in width, 9.5 mm in thickness, and 50.2 mm in incomplete length. The notches measure 9.5mm wide, 5.2mm deep and the inter-notch width is 19.9mm.

No further assessment of Site P2 (AgHk-74) is recommended given the isolated nature of the find and the limited cultural heritage value or interest.

3.3.2 Site P3 (AgHk-75)

Site P3 combines two findspots (P3 & P7) recorded during different surveys of the same area near T9 (August 2010 layout). Both findspots are located within the turn-around portion of the access road/crane path south of the turbine pad, separated by only 15 m (see Figure 8). The site is located on a broad plateau 75 m west of a bluff overlooking a small watercourse immediately west of Kerwood Road and 500 m south of Bornish Drive. At the time of survey, the sandy loam soil was well-weathered with some bean residue visible on the surface. Additional pedestrian survey at 1 m intervals was conducted within a 20 m radius of the finds, but no additional material was identified.

One projectile point, one distal biface fragment and one piece of thermal shatter were recovered from the surface (Plate 89). The projectile point is identified as an *Otter Creek* type dating to the Middle Archaic period ca. 4500-3000 BC and made from Kettle Point chert; it measures 44.7 mm long, 24.3 mm wide and 10.8 mm thick. This specimen has a convex base, shallow notches measuring 9.3 mm wide, 2.3 mm deep and 17.0 mm in inter-notch width, slightly convex lateral margins and a rounded distal margin. The biface fragment – likely the tip from another projectile point of undetermined type – is also made from Kettle Point chert and measures 25.6 mm long, 26.6 mm wide and is 7.5 mm thick.

No further assessment of Site P3 (AgHk-75) is recommended given the paucity of associated artifacts at this site and the limited cultural heritage value or interest.

3.3.3 Site P4 (AgHk-76)

Site P4 consists of three lithic artifacts surface-collected in the vicinity of T36 and along a 15 m east-west stretch of ground atop a small rise located 440 m north-northeast of Bornish Drive and 300 m east-southeast of Kerwood Road (Figure 7); the artifacts were collected within a 5 m by 5 m area. Several northward-flowing seasonal drainages are located within 50 m of the well-drained site area. Soils were noted to be a sandy clay-loam with some corn residue visible on the surface at the time of assessment. Additional pedestrian survey at 1 m intervals was conducted within a 20 m radius of the finds, but no additional material was identified.

The small artifact assemblage includes a projectile point identified as a *Brewerton Corner-Notched* type dating to the Middle Archaic period ca. 4000-2500 BC and made from Kettle Point chert; it measures 36.7 mm long, 23.9 mm wide, and 8.8 mm thick with slightly convex lateral margins and a narrow concave base (Plate 90). Notching on this specimen is 5.6 mm wide, 2.6 mm deep and measures 13.7 mm in inter-notch width. Two secondary reduction flakes, one of Kettle Point chert and one of Onondaga chert, were also recovered from the site surface.

No further assessment of Site P4 (AgHk-76) is recommended given the limited number of artifacts recovered from this site and its limited cultural heritage value or interest.

3.3.4 Site P5 (AgHk-77)

Site P5 is located in the vicinity of T37 and T38 and situated within an actively cultivated agricultural field on the western slope of a prominent knoll situated 410 m north-northeast of Bornish Drive and 450 m east-southeast of Kerwood Road (Figure 7; Plate 38). A small stream flows 75 m to the west of Site P5 and a seasonal drainage is present 20 m to the east. The silty clay-loam soil was observed to be well-



weathered with some light bean residue visible on the surface. Surface artifacts were collected over an area measuring 20 m NW-SE by 8 m NE-SW (or 160 m²) that was intensively surveyed at 1 m intervals.

The small artifact assemblage comprised 11 Kettle Point chert flakes: one primary flake and 10 secondary flakes and flake fragments. None of the specimens exhibit retouch or other modification.

The site was originally located at the intersection of proposed access roads connecting T36, T37 and T38, but recent revisions (August 2010 layout) have realigned the access road to avoid impacting the site. Therefore, since all facilities are beyond 50 m from the site, no further archaeological assessment of Site P5 (AgHk-77) is necessary nor recommended.

3.3.5 Site P6

Site P6 is located in an agricultural field 20 m west-northwest of T3 within the access road/crane path ROW, 675 m south-southwest of Bornish Drive and 220 m west-northwest of Roddick Road (Figure 6). The site is situated adjacent to a small rise (Plate 28) in clay soils, which were observed to have some corn and bean residue present on the surface at the time of assessment. Several seasonal drainages, which crisscross the field draining northward, are present within 50 m of the site. A single secondary Onondaga chert flake was recovered from the site surface. Additional pedestrian survey at 1 m intervals was conducted over a 40 m by 40 m area centered on the artifact, but no additional specimens were observed.

Given the isolated and non-diagnostic nature of this find and its limited cultural heritage value or interest, no further archaeological assessment of Site P4 (AgHk-76) is recommended.

3.3.6 Site P8 (AgHk-79)

Site P8 is a small lithic scatter identified during pedestrian survey of the collection line linking Regional Road 81 (Centre Road) and T48 (Figure 11). A small assemblage of lithics was recovered from a 15 m by 5 m (or 75 m²) area that was intensively surveyed at 1 m intervals within the ploughed field immediately adjacent to a woodlot where the collection line originally turned northward towards T48. The soil at this location is a sandy loam and, at the time of survey, was thoroughly ploughed and weathered with no crop residue present on the surface. It is suspected that the site extends into the woodlot beyond the limits of the proposed collection line installation area. Seasonal drainages and a low/wet marshy area within the field are present within 100 m of Site P8.

The recovered artifacts include 19 flakes and one scraper that were all made from Kettle Point chert (Plate 91)

As noted above, the site was originally located at a bend in the collection line adjacent to the woodlot (October 2009 layout). Revisions to the facility layout since the identification of Site P8 (August 2010 Layout) have realigned the collection line to avoid impacting the site (Figure 6). All facilities are now beyond 50 m from the site, and no further archaeological assessment of Site P8 (AgHk-79) is necessary and recommended.



3.3.7 Site P9 (AgHk-80)

Site P9 was identified within the crane turn-around area of T10, and is situated 575 m east-southeast of Kerwood Road and 575 m south-southwest of Bornish Drive (Figure 8). The terrain at this location is flat to undulating with numerous seasonal drainages flowing north-northeastward to a channelized stream north of Bornish Drive. Soils here were observed to be silty clay-loam and were well-weathered at the time of survey with very little crop residue visible on the surface. Two artifacts were surface-collected 10 m apart. Despite additional survey at 1 m intervals within 20 m of each artifact locations, no other cultural material was identified.

The projectile point is identified as a *Brewerton Side-Notched* type, which dates to the Middle Archaic period ca. 4000-2500 and is made from Kettle Point chert (Plate 92). The other artifact is a piece of Kettle Point chert shatter.

No further archaeological assessment of Site P9 is recommended given the limited number and isolated nature of the artifacts recovered from this site and its limited cultural heritage value or interest.

3.3.8 Site P10 (AgHk-81)

Site P10 was identified during the assessment of the proposed laydown and storage yard east of Kerwood Road near Elm Tree Drive (October 2009 Layout; Figure 13). This facility has since been eliminated from the project and does not appear on the August 2010 Layout (see Figure 2). Site P10 consists of an isolated projectile point recovered from an agricultural field and is located 250 m east-southeast of Kerwood Road and 250 m north-northeast of Elm Tree Drive. The terrain around Site P10 can be characterized as rolling hills interspersed with seasonal drainages and low marshy areas between well-drained sandy loam rises. The soil was ploughed, disked and well-weathered at the time of assessment. Despite additional survey at 1 m intervals within 20 m of the findspot, no other cultural material was identified.

The specimen is a fragment of a triangular projectile point, which probably dates to the Late Woodland period ca. AD 800-1600 and made from an undetermined variety of chert (Plate 93).

No further archaeological assessment of Site P10 (AgHk-81) is recommended given the isolated nature of the find and its limited cultural heritage value or interest.

3.3.9 Site P11

Site P11 consists of an isolated artifact recovered along a proposed collection line (CL2) situated 500 m east-southeast of Regional Road 81 (Centre Road; Figure 11). Intensive survey of the surrounding 40 m by 40 m area at 1 m intervals revealed no additional artifacts. The area is characterized by variably undulating terrain, ephemeral seasonal drainages, and sandy loam soils that were ploughed and well-weathered at the time of survey.

The artifact is a single primary reduction flake made from Kettle Point chert.

No further archaeological assessment of Site P11 is recommended given the isolated nature of the find and its limited cultural heritage value or interest.



3.3.10 Site P12

Similar to the previous site, Site P12 is an isolated findspot recovered along a proposed collection line (CL2) situated 140 m east-southeast of Regional Road 81 (Centre Road; Figure 11). Intensive survey of the surrounding 40 m by 40 m area at 1 m intervals revealed no additional artifacts. The area is characterized by variably undulating terrain, ephemeral seasonal drainages, and sandy loam soils that were ploughed and well-weathered at the time of survey.

The single artifact is a primary reduction flake made from Kettle Point chert which exhibits thermal fracture.

No further archaeological assessment of Site P12 is recommended given the isolated nature of the find and its limited cultural heritage value or interest.

3.3.11 Site P14

Site P14 is located in the vicinity of T9, on the edge of a bluff overlooking a small watercourse immediately west of Kerwood Road and south of Bornish Drive (Figure 8). In general, the terrain around the site is undulating and, at the time of survey, the sandy loam soil was well-weathered with some bean residue visible on the surface. Only one isolated fragment of Kettle Point chert was surface-collected despite intensive pedestrian survey at 1 m intervals within a 20 m radius of the find.

No further archaeological assessment of Site P12 is recommended given the isolated nature of the find and its limited cultural heritage value or interest.

3.3.12 Site P15

Site P15 is located in an agricultural field 125 m west-northwest of Haskett Road and 100 m north-northeast of the field limit within the crane turn-around for T43 (Figure 9). Terrain at the site is characterized as flat to undulating and, at the time of survey, the sandy loam soil was well-weathered with some bean residue visible on the surface (Plate 54). A single findspot was located during pedestrian survey of the proposed facilities, and no additional artifacts were noted during intensive survey at 1 m intervals within a 20 m radius of the artifact.

The findspot consists of a single Kettle Point chert secondary flake.

No further archaeological assessment of Site P15 is recommended given the isolated nature of the find and its limited cultural heritage value or interest.

3.3.13 Site P16 (AgHk-82)

Site P16 is a lithic scatter located 640 m east-southeast of Haskett Road and 680 m south-southwest of Bornish Drive along the access road/crane path for T17, T18 and T19 (Figure 10; Plate 64). The site measures 25 m by 30 m in size (or 750 m²) and was intensively surveyed at 1 m intervals; it is positioned at the intersection of two access roads/ crane paths. Site P16 is located in a hilly area surrounded by



seasonal field drainages and low-lying marshy areas, one of which is located approximately 100 m to the east. Fifty-nine lithic artifacts were recovered from the site surface during pedestrian survey.

The assemblage includes 58 pieces of Kettle Point debitage and one fragmented projectile point (Plate 94). The latter specimen is typed as a *Nettling* point which dates to the Early Archaic period ca. 7500-6000 BC and was manufactured from an undetermined variety of chert. It measures 26.0 mm in length, 20.4 mm in width, and 6.4 mm in thickness. It is asymmetrical in plan view and exhibits the characteristic fine edge serration and corner-notching. The base of the projectile point below the notching is missing, but inter-notch width can be measured to 12.4 mm. The tip of the specimen is also missing.

The chert debitage includes 13 primary reduction flakes, 36 secondary knapping flakes, 1 secondary retouch flake, and 8 pieces of shatter, all derived from Kettle Point chert.

The proposed facility layouts could not be altered to avoid Site P16, which is deemed to be of significant cultural heritage interest. Consequently, a Stage 3 site-specific assessment is necessary and recommended for Site P16 (AgHk-82).

3.3.14 Site P17 (AgHk-83)

A second lithic scatter, Site P17 (AgHk-83), was identified 90 m north-northwest of the previous site during survey of the same access road/crane path series for T17, T18 and T19 east of Haskett Road (Figure 10). Site P17 measures 30 m north-south by 20 m east-west and was intensively surveyed at 1 m intervals to facilitate artifact recovery; it consisted of 81 lithic artifacts. The site is located on a small knoll within the crane turn-around for T17 (Plate 62), and the surrounding area is hilly with numerous seasonal streams and drainages dividing steeply-sloped bluffs and knolls; the soils are sandy loam.

The site assemblage includes 61 specimens, including one basal projectile point fragment typed as an *Otter Creek* point which dates to the Middle Archaic period ca. 4500-3000 BC and was made from Onondaga chert (Plate 95); it measures 30.1 mm long, 28.9 mm wide and 6.5 mm thick, with a notch width of 7.7 mm, a notch depth of 2.3 mm, and inter-notch width of 23.1 mm. Its base is concave and exhibits rounded basal ears.

The balance of the recovered artifacts consists of 4 primary reduction flakes, 37 secondary knapping flakes, and 19 pieces of shatter. All were made from Kettle Point chert.

The proposed facility layouts could not be altered to avoid Site P17, which is deemed to be of significant cultural heritage interest. Consequently, a Stage 3 site-specific assessment is necessary and recommended for Site P17 (AgHk-83).

3.3.15 Site P19 (AgHk-85)

Site P19 is situated in an agricultural field, 275 m east-southeast of Haskett Road and 630 m west-southwest of Bornish Drive along the access road/crane path for T15, T17, and T18 (Figure 10). Terrain at the site is characterized as hilly with numerous seasonal drainages in the vicinity flowing northward to a pond situated approximately 100 m north of the site. At the time of survey, the sandy loam soil was well-weathered with some bean residue visible on the surface. An isolated findspot was recovered during pedestrian survey of the proposed facilities, however, no additional artifacts were noted during intensive survey at 1 m intervals within a 20 m radius of the artifact.



The single recovered specimen is a single bifacial end scraper made from Onondaga chert. The scraper was created by modifying the distal end of a projectile point identified as a Middle Archaic *Brewerton Corner-Notched* point (Plate 96). It measures 39.8 mm long, 31.3 mm wide and 8.0 mm thick. Notch width is 8.1 mm, notch depth is 3.5 mm, and inter-notch width is 19.9 mm.

No further archaeological assessment of Site P19 (AgHk-85) is recommended given the isolated nature of the find and limited cultural heritage value or interest.

3.3.16 Site P20 (AgHk-86)

Site P20 is an isolated findspot located 190 m east-southeast of Haskett Road and 260 m south of Bornish Drive in an actively cultivated agricultural field (Figure 10; Plate 67). The terrain in this area is gently undulating and the soils are fine sandy loam, which were well-weathered at the time of survey. Situated along the access road/crane path from T15 to T16, Site P20 consists of an isolated findspot. Intensive pedestrian survey at 1 m intervals yielded no additional artifacts within 20 m of the findspot.

The specimen consists of a single Kettle Point chert biface fragment measuring 37.9 mm long, 28.0 mm wide and 9.0 mm thick (Plate 97).

No further archaeological assessment of Site P20 (AgHk-86) is necessary and recommended given the isolated nature of the find and its limited cultural heritage value or interest.

3.3.17 Site P21 (AgHk-87)

Site P21 is an isolated find located in the vicinity of T12, 550 m south-southwest of Bornish Drive and 900 m west-northwest of Haskett Road (Figure 10). The site is situated in a flat, agricultural field with silty clay-loam soil which was well-weathered at the time of survey; ground visibility was excellent (>90%) despite some corn residue on the surface. Despite additional pedestrian survey at 1 m intervals within a 20 m radius of the specimen, no other artifacts were observed.

One minimally-worked Kettle Point chert biface fragment (Plate 98) was recovered from the site surface. It measures 31.9 mm long, 23.6 mm wide and 5.3 mm thick.

No further archaeological assessment of Site P21 (AgHk-87) is necessary and recommended given the isolated nature of the find and its limited cultural heritage value or interest.

3.3.18 Site P22

Site P21 is an isolated find located 425 m north-northeast of Bornish Drive and 525 m west-northwest of Haskett Road in an agricultural field near T39 (Figure 9). The terrain in this area is characterized by gently rolling hills with numerous seasonal drainages running throughout. The sandy clay-loam soil was well-weathered at the time of survey and ground visibility was excellent (>90%) despite some corn residue visible on the surface. No other artifacts were observed during intensive pedestrian survey at 1 m intervals within a 20 m radius of the specimen.



One possible Kettle Point chert biface fragment was recovered from the site surface, and it measures 26.8 mm long, 26.2 mm wide, and 9.8 mm thick (Plate 99). Based on the character of flaking on the dorsal surface, this specimen may instead be a flake exhibiting plough damage.

No further archaeological assessment of Site P22 is necessary and recommended given the isolated nature of the find and its limited cultural heritage value or interest.

3.3.19 Site P23

Site P23 is an isolated findspot located 420 m north-northeast of Bornish Drive and 710 m west-northwest of Haskett Road in an agricultural field near T39 (Figure 9). The sandy clay-loam soil was well-weathered at the time of survey, and ground visibility was excellent (>90%) with some corn residue visible. The terrain in this area is characterized by gently rolling hills with numerous seasonal drainages running throughout. No other artifacts were observed during intensive pedestrian survey at 1 m intervals within a 20 m radius of the specimen.

The artifact is a secondary knapping flake of vitreous Kettle Point chert that exhibits no evidence of use or modification.

No further archaeological assessment of Site P23 is necessary and recommended given the isolated nature of the find and its limited cultural heritage value or interest.

3.3.20 Site P24 (AgHk-88)

Site P24 is a large lithic scatter located 350 m north-northeast of Bornish Drive and 600 m west-northwest of Haskett Road along the former access road/crane path for T39 (Figure 9; Plate 49). The terrain in this area is characterized by gently rolling hills with numerous seasonal drainages running throughout. The sandy clay-loam soil was well-weathered at the time of survey and ground visibility was excellent (>90%) with some corn residue visible. The site measures 90 m north-south by 50 m east-west (or 4,500 m²) in size and is positioned at the intersection of two access roads/crane paths. A total of 148 lithic artifacts were recovered from the site surface after intensive pedestrian survey at 1 m intervals.

The artifact assemblage includes three expedient unifacial flake scrapers, one unifacial endscraper fragment, and one multi-directional core, all made from Kettle Point chert (Plate 100). The balance consists of 17 primary reduction flakes, 107 secondary knapping flakes, 5 secondary retouch flakes, 9 pieces of shatter, and 1 unclassifiable object. Kettle Point chert characterized all specimens but one flake which was made from Bois Blanc chert.

The site was originally located at the intersection of proposed access roads connecting T38, T39 and T40, but revisions to the layout (dated August 2010) have realigned the access road for T39 to avoid impacting the site. Therefore, since all proposed facilities are beyond 50 m from the Site 24 (AgHk-88), no further archaeological assessment is necessary and recommended.



3.3.21 Site P25 (AgHk-89)

Site P25 is an isolated findspot located in the vicinity of T36 and T37. The site is 250 m north-northeast of Bornish Drive and 275 m east-southeast of Kerwood Road (Figure 7). The sandy clay-loam soil was well-weathered at the time of survey and ground visibility was excellent (>90%) with some corn residue visible. The terrain in this area is characterized by gently rolling hills with numerous seasonal drainages running throughout. No other artifacts were observed during intensive pedestrian survey at 1 m intervals within a 20 m radius of the specimen.

One Middle Archaic *Brewerton Side-Notched* projectile point made from Kettle Point chert (Plate 101) was recovered from the site surface. This specimen is missing the distal tip and one basal ear and has a flat base and straight lateral margins; it measures 33.4 mm long, 24.8 mm wide and 7.2 mm thick with a notch width of 12.2 mm, notch depth of 2.1 mm, and an inter-notch width of 20.0 mm.

No further archaeological assessment of Site P25 (AgHk-89) is necessary and recommended given the isolated nature of the find and its limited cultural heritage value or interest.

3.3.22 Site P26 (AgHk-90)

Site P26 is a small, sparse lithic scatter in the vicinity of T36, located 425 m north-northeast of Bornish Drive and 325 m east-southeast of Kerwood Road (Figure 7). Several northward-flowing seasonal drainages are located within 50 m of the well-drained site area, including one prominent seasonal stream to the east. The sandy clay-loam soil was well-weathered with some corn residue visible on the surface at the time of assessment. Only three artifacts were recovered from a 10 m northeast-southwest by 5 m northwest-southeast area, despite intensive pedestrian survey at 1 m intervals within 20 m radius of the findspots.

Of the three surface-collected specimens, one is a drill made from Kettle Point chert and measuring 23.8 mm long, 12.5 mm wide, and 3.9 mm thick (Plate 102). The other artifacts are two secondary flakes also made from Kettle Point chert.

The proposed facility layouts could not be altered to avoid Site P26, which is deemed to be of significant cultural heritage interest. Consequently, a Stage 3 site-specific assessment is necessary and recommended for Site P26 (AgHk-90).

3.3.23 Site P27 (AgHk-91)

Site P27 is a small lithic scatter located in the vicinity of T25, 450 m north-northeast of Bornish Drive and 675 m east-southeast of Roddick Road (Figure 4; Plate 18). The terrain at this location is gently rolling hills and a small seasonal drainage lies 20 m to the west. The clay-loam soil observed here was well-weathered with some corn residue visible on the surface at the time of assessment. Artifacts were recovered from a 15 m north-south by 20 m east-west (or 300 m²) area after intensive pedestrian survey at 1 m intervals.

The lithics include eight flakes manufactured from Kettle Point chert: 1 primary reduction flake, 5 secondary knapping flakes, and 2 pieces of shatter. No diagnostic artifacts were recovered from Site P27.

The 2009 draft S & G Section 2.2 states that pre-contact lithic sites located on or west of the Niagara Escarpment and yielding less than ten non-diagnostic artifacts are considered to be of limited cultural



heritage interest, although sites yielding 5 to 9 artifacts may be deemed significant at the archaeologist's discretion. Given that two artifacts are shattered and at least one flake specimen may be the result of plough-generated spalling, Site P27 (AgHk-91) is not deemed to have cultural heritage value or interest. Consequently, no further archaeological assessment is necessary and recommended.

3.3.24 Site P29 (AgHk-92)

Site P29 is a small scatter of lithic artifacts that is also located in the vicinity of T25. The site is situated 50 m southwest of the previous site, 440 m north-northeast of Bornish Drive and 630 m east-southeast of Roddick Road (Figure 5). The terrain at this location is gently rolling hills and a small seasonal drainage lies 20 m to the east. The clay-loam soil observed here was well-weathered with some corn residue visible on the surface at the time of assessment. Artifacts were recovered from a 2 m north-south by 5 m east-west area after intensive pedestrian survey at 1 m intervals.

Three flakes—1 primary reduction and two secondary knapping—were collected, and all were made from Kettle Point chert.

No diagnostic artifacts were recovered from Site P29, and none of the flakes in the assemblage exhibit retouch or other cultural modification. As per the rationale presented above, Site P29 (AgHk-92) is not deemed to have cultural heritage value or interest. Consequently, no further archaeological assessment is necessary and recommended.

3.3.25 Site P30 (AgHk-93)

Site P30 is a findspot located in the vicinity of T43, 760 m south-southwest of Cold Stream Road and 15 m west-northwest of Haskett Road (Figure 9; Plate 55); two lithic artifacts were found approximately 12 m apart. The ground is flat to gently undulating in this area, and the clay-loam soil observed here was well-weathered with some corn residue visible on the surface at the time of assessment. Some gravel was also present on the surface on account of the site's proximity to the roadway. Despite intensive pedestrian survey at 1 m intervals within a 20 m radius of the finds, no additional artifacts were found.

Both artifacts were made from Kettle Point chert. The biface fragment is undiagnostic and measures 47.5 mm long, 34.3 mm wide and 11.6 mm thick (Plate 103). The projectile point fragment is a Middle Archaic *Brewerton Corner-Notched* point that measures 22.2 mm long, 23.1 mm wide and 5.5 mm thick, has a flat base, pointed basal ears, and is missing the distal tip. The notches are 6.2 mm wide, 2.1 mm deep and have an inter-notch width of 17.8 mm.

No further archaeological assessment is recommended for Site P30 (AgHk-93) given the paucity of recovered artifacts and limited cultural heritage value or interest.

3.3.26 Site P31 (AgHk-94)

Site P31 is a lithic scatter found in the vicinity of T27, 760 m south-southwest of Cold Stream Road, and 700 m west-northwest of Kerwood Road (Figure 7; Plate 34). At this location, the terrain is hilly with bluffs and steeply sloping ground immediately to the west. A creek surrounded by rocky, wet terrain lies 90 m to the southwest. At the time of assessment, the sandy clay-loam soil here was ploughed and well-



weathered. The artifacts were found within a 30 m by 30 m area that was subjected to intensive pedestrian survey at 1 m intervals.

The artifact assemblage consists of 16 specimens, including one endscraper fragment, one retouched flake, and fourteen flakes, all made from Kettle Point chert. The distal endscraper fragment is unifacially flaked and measures 25.3 mm long, 24.2 mm wide and 5.9 mm thick. The working edge measures between 85 and 90 degrees and exhibits both heavy scaling and pronounced edge rounding. The retouched flake measures 33.4 mm long, 34.0 mm wide and 15.3 mm thick and was made from high quality Kettle Point chert; it exhibits regular bifacial retouch on the left-lateral margin. The balance of the artifacts includes 14 secondary knapping flakes.

The proposed facility layouts could not be altered to avoid Site P31, which is deemed to be of significant cultural heritage interest. Accordingly, a Stage 3 site-specific assessment is necessary and recommended for Site P31 (AgHk-94).

3.4 Summary

Stage 2 field assessment was initiated in June 2009 during which four archaeological sites were identified in the vicinity of T21, T23, and T26:

- Site P1 (AgHk-62), near T21, is an isolated non-diagnostic pre-contact Aboriginal artifact with no determined cultural heritage value or interest;
- Site H3, a late nineteenth century Euro-Canadian homestead in the vicinity of T23, is not impacted by any facilities as presently proposed; and
- Sites H1 (AgHk-63) and H2 (AgHk-64) coincide with facilities near T26 and T23, respectively. Both are Euro-Canadian homesteads dating to the second half of the nineteenth century and would have required additional Stage 3 site-specific assessment if they were to be impacted. However, the revised design layout (dated to August 2010) now avoids these archaeological sites.

Twenty-six pre-contact Aboriginal sites were identified during the 2010 field season:

- Nineteen sites—Sites P2, P3, P4, P6, P9, P10, P11, P12, P14, P15, P19, P20, P21, P22, P23, P25, P27, P29 and P30—were not deemed to have cultural heritage value or interest, and none will require further archaeological assessment;
- Three sites were deemed to have cultural heritage value or interest but will no longer be impacted due to changes to the project layout. Sites P5 (AgHk-77), P8 (AgHk-79) and P24 (AgHk-88) will not be impacted and, therefore, do not require further archaeological assessment;
- The remaining four sites—Sites P16 (AgHk-82), P17 (AgHk-83), P26 (AgHk-90) and P31 (AgHk-94)—all require Stage 3 site-specific assessments as they are located within or in proximity to proposed facility construction areas (based on the August 2010 layout) and are considered to have cultural heritage value or interest.



4.0 CONCLUSIONS AND RECOMMENDATIONS

The Bornish Wind Farm Project EA comprises 49 turbine locations and associated facilities in West Williams, East Williams and Adelaide Townships, Middlesex County.

Stage 1 background research conducted for a larger study area identified only one registered archaeological site within two kilometres of the proposed Bornish facilities. Based on the physiographic setting of the project lands, the presence of numerous stream courses, and the presence of the historic road system, there is the potential for Aboriginal and Euro-Canadian archaeological sites throughout most of the Bornish Wind Farm Project area.

In accordance with the 2009 draft S & G, pedestrian survey and test pit survey was conducted between June 2009 and August 2010. Thirty archaeological sites were identified: Euro-Canadian Sites H1 (AgHk-63), H2 (AgHk-64) and H3 (AgHk-65) and pre-contact Aboriginal sites P1 – P6, P8 – P12, P14 – 17, P19 – P27 and P29 – P31 (AgHk-62, AgHk-74 – AgHk-94).

In light of these results, the following recommendations are made:

1. No further archaeological assessment is recommended on the following proposed facilities of the Bornish Wind Farm Project (based on the August 2010 layout): T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T18, T20, T21, T22, T23, T24, T25, T26, T28, T29, T30, T31, T32, T33, T34, T35, T37, T38, T39, T40, T41, T42, T43, T44, T45, T46, T47, T48 and T49;
2. Further archaeological assessment is recommended for T17, T18, T19, T27 and T36 due to the presence of significant archaeological sites in close proximity to these facilities or their associated access roads/crane paths (see Recommendation 6 below).
3. No further assessment is recommended on the following pre-contact Aboriginal sites determined to have limited or no cultural heritage value or interest: Sites P1, P2, P3, P4, P6, P9, P10, P11, P12, P14, P15, P19, P20, P21, P22, P23, P25, P27, P29 and P30;
4. No further archaeological assessment is recommended at Site P5 (AgHk-77), Site P8 (AgHk-79), and Site P24 (AgHk-88) as the revised facilities (based on the August 2010 layout) are more than 30 m from site limits;
5. No further archaeological assessment is recommended at Site H1 (AgHk-63), Site H2 (AgHk-64) and Site H3 (AgHk-65), as the revised facilities (based on the August 2010 layout) are more than 30 m from site limits;
6. It is recommended that the remaining four (4) archaeological sites documented during the Stage 2 property assessment be subject to Stage 3 site specific assessment if they are to be located within the Project limits as they all meet the criteria for requiring a Stage 3 site-specific assessment (see MTC's 2011 *Standards and Guidelines for Consultant Archaeologists* (S & G), Section 2.2 Analysis: Determining the requirements for Stage 3 assessment. The type of site as per S & G Section 2.2 and the detailed Stage 3 requirements for each site as per S & G Section 3 and S & G Section 7.8.4, Standard 1c are as follows:
 - a) Stage 3 is recommended for Site P17 (AgHk-83), Site P26 (AgHk-90) and Site P31 (AgHk-31) or portions thereof located within the Project lands based on S & G Section 2.2, Standard



1.a.i.(1). The Stage 3 assessment must be carried out according to the criteria for small pre-contact Aboriginal sites where it is not yet evident that the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4.

The Stage 3 site-specific assessment for these sites includes:

- historical documentation per S & G Section 3.1, Standard 1.a-b, if necessary;
- controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
- test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling;

b) The Stage 2 property assessment identified one (1) pre-contact Aboriginal archaeological site— Site P16 (AgHk-82)—dating to the Early Archaic period that meets the criteria for requiring a Stage 3 site specific assessment based on S & G Section 2.2, Standard 1.a.i.(1). The Stage 3 assessment must be carried out according to the criteria for a small, pre-contact Aboriginal site where it is not yet evident that the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4.

The Stage 3 site-specific assessment for this site includes:

- historical documentation per S & G Section 3.1, Standard 1.a-b, if necessary;
- controlled surface pick-up of the site area: surface preparation may be required if ground conditions have deteriorated since the Stage 2 property assessment was conducted; and
- test unit (1 m square unit) excavation at 5 m intervals across the site plus an additional 20% of focused sampling. Due to the early time period of the site, a 20% sample of the excavated units must be screened through 3 mm mesh to facilitate the recovery of small, potentially diagnostic artifacts.

7. Should design changes or temporary workspace requirements result in the inclusion of previously unassessed lands, these lands should be subjected to Stage 2 property assessment to determine if cultural remains are present.

ASI advises compliance with the following legislation:

- This report is submitted to the Minister of Culture as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, RSO 1990, c 0.18. The report is reviewed to ensure that the licensed consultant archaeologist has met the terms and conditions of their archaeological license, and that the archaeological fieldwork and report recommendations ensure the conservation, preservation and protection of the cultural heritage of Ontario;
- 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 sec. 48 (1) of the *Ontario Heritage Act*;

- The *Cemeteries Act* requires that any person discovering human remains must immediately notify the police or coroner and the Registrar of Cemeteries, Ministry of Small Business and Consumer Services; and
- Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48(1) of the Ontario Heritage Act and may not be altered or have artifacts removed from them, except by a person holding an archaeological license.

The documentation related to this archaeological assessment will be curated by Archaeological Services Inc. until such a time that arrangements for their ultimate transfer to Her Majesty the Queen in right of Ontario, or other public institution, can be made to the satisfaction.



5.0 REFERENCES CITED

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6.0 BORNISH WIND FARM PROJECT: STAGE 2 SURVEY RESULTS - OVERSIZED MAPPING



