Stage 4 Archaeological Mitigation of The Landing Site: AiGw-427 Lot 13, Concession 1 NDS Town of Oakville Regional Municipality of Halton Ontario

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INTRODUCTION

Archeoworks Inc. was initially retained by Great Gulf Group of Companies, of Toronto, Ontario, to conduct a Stage 1-2 archaeological assessment of a proposed residential subdivision, located in the Town of Oakville, Regional Municipality of Halton, within part of Lots 13 and 14, Concession 1 North of Dundas Street (NDS) (see Figures 1 and 2). Following this survey, Archeoworks Inc. was retained to conduct the Stage 3 assessment for an Aboriginal lithic scatter named the Landing Site: AiGw-427 (see Figure 3). Upon completion of the Stage 3 assessment, Archeoworks Inc. was further retained to conduct the Stage 4 mitigation of the Landing Site: AiGw-427, the results of which are documented herein (Figure 4).

The Stage 4 mitigation was conducted under the project and field direction of Ms. Kim Slocki, archaeological licence P029, during the months of April and May 2006. Permission to enter the site area and to collect artifactual remains was granted on April 13th, 2006. This study was conducted in accordance with the *Ontario Heritage Act* (1990).



Figure 1: 1:50,000 map illustrating the Stage 1-2 study area (Hamilton/Burlington 30 M/05)



Figure 2: Stage 2 Assessment of Study Area and Location of Landing Site (P8)



Figure 3: Stage 3 Assessment of the Landing Site

1.0 SUMMARY OF STAGE 1-3 ARCHAEOLOGICAL ASSESSMENTS

The Landing Site (AiGw-427) was discovered by means of pedestrian survey during the Stage 1-2 archaeological assessment conducted by Archeoworks Inc. in May of 2004. The site was encountered approximately 880 metres north of Dundas Street West and 70 metres west of Trafalgar Road, within part of Lot 13 Concession 1 NDS. The Stage 2 scatter of surface artifacts yielded three biface fragments, two uniface fragments, one utilized flake, and 55 pieces of debitage, mostly made from Onondaga chert. A Stage 3 assessment was undertaken in May of 2005, covering an area approximately 35 by 35 metres in size. A total of 20 onemetre units were excavated in order to determine the extent of the site. Further information, including a catalogue of the Stage 2 and 3 finds, can be found in our report titled, "Stage 1-2 Archaeological Assessment of: A Proposed Subdivision and the Stage 3 Archaeological Assessments of: The Landing Site (AiGw-427) and The Thompson Site (AiGw-428), Green Ginger Developments, Part of Lots 13&14, Concession 1 North of Dundas Street, Town of Oakville, Regional Municipality of Halton, Ontario". A total of 147 artifacts were recovered during the Stage 2 and 3 assessments at the Landing Site (AiGw-427), including 138 pieces of debitage and nine tools. None of the tools were diagnostic.

Based on these assessments, the Landing Site (AiGw-427) was likely a small one-time campsite, utilized by a small group of Native people, probably a family unit. Their tool kit was refurbished and the newly completed projectile points and preforms were likely removed from the site. The presence of scrapers indicates more than just a hunting camp and the lack of projectile point bases indicate that this site was not simply a hunting re-furbishing location. The small amount of both debitage and tools indicates that this was a short-term occupation and not a base camp. The lack of pottery may indicate a pre-Woodland occupation.

Given that the option of protecting the Landing Site (AiGw-427) was not available to *Great Gulf Group of Companies*, the site was subjected to a comprehensive salvage excavation under the project and field direction of Ms. Kim Slocki.

2.0 STAGE 4 SALVAGE EXCAVATION

Recommendations for a Stage 4 salvage excavation were made at the conclusion of our Stage 3 assessment. The Stage 4 mitigation was carried out during the months of April and May, 2006. The weather throughout the Stage 4 investigation varied from overcast conditions to sunny, with temperatures ranging from 10 to 25°C. The archaeological work was conducted under the project and field direction of Ms. Kim Slocki, with a crew of seven others (*see Plates 1-4*).

During the Stage 3 assessment, a total of 20 units were excavated over the scatter in order to determine the site limits (*see Figure 3*). Upon return to the site, the Stage 3 datum (300-500 stake) and grid were reestablished (UTM coordinates for datum: 17T Easting 0602832, Northing 4816141). Following this activity, one-metre square units were placed at the core of the site, surrounding the high-yielding Stage 3 test units. Working outwards from the core of the site, units were block excavated until artifact frequencies reached ten or less with no diagnostics. A total of 79 units were excavated during the Stage 4 mitigation (*see Table 1 and Figure 4*).

UNIT	DEPTH	ARTIFACTS	UNIT SIZE	COMMENTS
200.404	220m	0	1m	No fosturos
299-494	22cm	9	1111 1m	No features
298-494	23cm	10	1111 1m	No features
299-493	230m	14	1111 1m	No features
296-493	290111 260m	5	1111 1m	No features
297-493	200111 21.0m	5	1111 1m	No features
299-492	28cm	10	1111 1m	No features
296-492	200111 24cm	5	1111 1m	No features
297-492	24cm	5	1111 1m	No features
299-491	200m	11	1111 1m	No features
298-491	20cm	2 2	1111 1m	No features
297-491	22cm	0 1	1111 1m	No features
299-490	24cm	6	1111 1m	No features
298-490	21cm	5	1111 1m	No features
300-490	26cm	15	1111 1m	No features
302-490	20cm	15	1111 1m	No features
303-490	210m	10	1111 1m	No features
302-491	300m	8	1111 1m	No features
301-491	32cm	0	1111 1m	No features
300-491	320m	13	1111 1m	No features
300-492	290111 27cm	0	1111 1m	No features
300-493	27cm	0	1111 1m	No features
302-469	290m	0	1111 1m	No features
208 405	23cm	10	1111 1m	No features
298-493	20cm	15	1111 1m	No features
297-493	22cm	11	1111 1m	No features
290-494	22cm	12	1m	No features
290-493	27cm	0	1m	No features
290-493	20cm	8	1m	No features
290-492	25cm	13	1m	No features
298-490	2.5cm	15	1m	No features
300 494	24cm	5	1m	No features
296-496	21cm	8	1m 1m	No features
297-496	24cm	12	1m 1m	No features
297-490	24cm	6	1m	No features
299-490	24cm	2	1m	No features
300-493	24cm	0	1m	No features
301-492	25cm	7	1m 1m	No features
298-497	20cm	11	1m 1m	No features
297-497	20cm	12	1m 1m	No features
301-488	20cm	16	1m 1m	No features
295-494	22cm	3	1m 1m	No features
295-494	23cm	10	1m 1m	No features
296-497	22cm	9	1m 1m	No features
300-489	23cm	6	1m	No features
296-491	21cm	7	1m	No features
299-497	20cm	4	1m	No features
297-498	30cm	5	1m	No features
298-498	22cm	1	1m	No features
300-488	23cm	8	1m	No features
302-488	31cm	15	1m	No features
301-487	26cm	15	1m	No features
201 107				

Table 1: Stage 4 Excavated Units

302-487	30cm	7	1m	No features
301-486	27cm	8	1m	No features
300-487	28cm	7	1m	No features
297-489	21cm	6	1m	No features
296-489	26cm	7	1m	No features
303-488	27cm	7	1m	No features
295-496	24cm	5	1m	No features
302-492	26cm	5	1m	No features
300-486	23cm	5	1m	No features
302-486	30cm	1	1m	No features
303-487	27cm	6	1m	No features
303-489	27cm	4	1m	No features
303-491	29cm	3	1m	No features
296-490	26cm	4	1m	No features
295-492	24cm	3	1m	No features
295-493	24cm	3	1m	No features
291-497	20cm	0	1m	No features
292-496	20cm	0	1m	No features
294-495	22cm	1	1m	No features
295-497	25cm	2	1m	No features
295-498	25cm	2	1m	No features
296-498	26cm	4	1m	No features
286-499	21cm	0	1m	No features
287-500	20cm	0	1m	No features
299-498	20cm	1	1m	No features
300-497	20cm	2	1m	No features
300-496	21cm	4	1m	No features

The clay soil fills were screened through six-millimetre wire mesh to facilitate artifact recovery and all units were excavated five centimetres into the subsoil. The exposed surface of each unit was trowelled. The entire area tested measured approximately 10x15 metres.



Figure 4: Stage 4 Excavation of the Landing Site and Debitage Distribution

The stratigraphy of all excavated units consisted of a clay ploughzone, ranging from 20-31 centimetres in depth, overlying subsoil. All artifacts were distributed throughout the topsoil layer. No discernable stratigraphy was recorded in any of the excavated units. Once exposure was complete, the entire site surface was shovel-shined an additional five centimetres into the subsoil, in order to reveal any sub-surface cultural features, however, none were identified (*see Plates 4-5*). Artifact frequencies ranged from zero to 18 aboriginal chert artifacts, with a total count of 579 artifacts from the Stage 4 test-units (*see Plates 6-12*).

All artifacts encountered during the Stage 4 salvage excavation were collected and properly washed, analysed and catalogued (*Appendix* A).

3.0 MATERIAL CULTURE ANALYSIS

Fisher Archaeological Consulting was retained by *Archeoworks Inc.* to conduct the analysis of artifacts from the Stage 4 excavation of the Landing Site (AiGw-427). This section provides an analysis of the lithic artifacts recovered during the Stage 2-4 work.

3.1 Background

Lithic Sources

Sources of siliceous stone, specifically chert, for making tools were often focal areas for precontact Native peoples. There were three lithic types present on the subject property: Onondaga; Bois Blanc (Haldimand); and Dundee (Selkirk) cherts. The Onondaga Formation chert is of a Middle Devonian age, and is manifested in three members (Moorehouse, Edgecliff and Clarence), but it is not possible to differentiate the Formation into its distinct members based solely on macroscopic observations (Eley and von Bitter 1989). The Bois Blanc Formation is of a Lower Devonian age, and is predominantly found outcropping inland of Lake Erie's northeastern shore (Hagersville, Innerkip & Fort Erie) (Eley & von Bitter 1990). Selkirk is of a Middle Devonian age and is located along the northeastern shore of Lake Erie, further west than the Onondaga outcropping.

Onondaga chert has been recovered from Paleo-Indian through to Historic Native sites. It is not restricted to any specific time frame or Native group. Based on the above observations, debitage from these types of lithic material without diagnostic artifacts or contextual evidence cannot be assigned to any one specific Native cultural affiliation or time frame. Bois Blanc was the preferred material of the Native Hi-Lo (Late Paleo-Indian) groups of southern Ontario, but Roberts (1985) in his survey noted that 50% of his Hi-Lo material was also made from Lockport chert. Dundee chert does not appear to be associated with any specific time frame or Native group.

Lithic Analysis Methodology

A visual inspection of the debitage and tools from the Landing site (AiGw-427) was conducted to determine lithic raw material type. A concerted effort was made to classify raw material type only when it could be positively identified. Those pieces too small for positive identification are listed in the catalogue, and any doubts as to the raw material types were identified with a question mark, or were simply placed in the unknown material type category. There is little variety of lithic raw material, and the predominant type of chert is Onondaga chert. Each flake was examined macroscopically to determine its place in the lithic reduction sequence. Criteria considered (but not necessarily recorded) when categorizing the lithics into various types include the presence or absence of striking platform, bulb of percussion, angle of the platform, dorsal scarring - the frequency and direction, and presence (percentage) of cortex (parent rock). Based on these criteria, flakes were categorized as primary decortication, secondary decortication, initial, thinning, trimming, shatter and fragments (*Appendix B*).

The tool analysis of the Landing assemblage may be divided into formal tools (bifacial), expedient tools, and cores. One definition of formal tools is synonymous with curated tools. Curated tools have been used or maintained (through reuse and resharpening) over a long time frame and transported from location to location (Hayden 1976). Curation involves the anticipated use of tools, and thus a high degree of investment is placed in their maintenance (Hayden 1989:22). Maintenance is viewed as a way of decreasing the investment of effort in manufacturing the tool (Hayden 1989:22). Since formal tools have a relatively long use-life and may be transported from site to site, they are not considered a good indicator of the actual activities carried out on a specific site. Some formal tools (especially projectile points) are, however, considered to be diagnostic tools which aid archaeologists in identifying different cultural groups, for the reasons stated above.

Expedient tools are manufactured on an *ad hoc* basis, are general in form and are not imbued with a great time investment in their maintenance (Hayden 1989:22). Expedient tools, for the purpose of this report, are defined as flakes that were picked up, used in some manner and then discarded on site. Expedient tools, like debitage, are usually good indicators of the types of activity or activities that were carried out on site since they usually were not transported to or from the area where they were originally used. Therefore, the activities represented by the different types of expedient flakes probably represent the activities that were actually carried out at a site.

The analysis of the lithic material is based on three broad artifact categories:

- 1. *Formal Tools* (deliberate reduction strategy employed) analysis includes raw material typing, heat exposure, tool type, tool subtype, and the segment of the tool that is present;
- 2. *Expedient Tools* (utilized and/or retouched) analysis includes lithic raw material, reduction sequencing, heat exposure, types of use-wear, edge type, and surface type;
- 3. *General Debitage* (waste flakes) analysis includes raw material typing, reduction sequencing, and heat exposure;

This report discusses the type and nature of the lithic raw material found on site, the different tool types - both formal and expedient, and provides spatial distribution and organizational analyses of all lithic material.

3.2 Stage 2 and Stage 3 Summary

The visual assessment of the Green Ginger Developments' property produced 17 Native isolated finds, and 61 lithic artifacts from a concentrated area (identified as P8), later known as

the Landing site. The Landing site was discovered in the northeastern corner of the property, along the western side of Trafalgar Road. Most of the remainder of the artifacts were discovered within close proximity to the creek that traverses the property from the northwest to southeast. Just under half of the isolated finds were bifaces (n=8), with the remainder being pieces of debitage (n=8) and one core. The eight bifaces were further identified into seven projectile points and one bifacially worked tool. The dominance of projectile points in this surface assemblage is not surprising. The property is situated in ideal hunting grounds, with a probable abundance of nut trees (quercus and carya), and rolling hills with a meandering creek. This is substantiated by the fact that the projectile points display some form of damage two are simply the tips (P3 & P4); P5 is missing its base; P13 is missing its tip; P9 has a classic tip impact fracture; and P11 is missing its tip and one of its shoulder tangs. The tip was possibly lost due to heat fracture, as the edge is heat rippled, but the shoulder tang shows no rippling. P6 is very fragmentary and may have been damaged by post-depositional heat. None of these projectile points are just the bases of the projectile point, which one would expect to find on site when the arrow or spear was retrieved and discarded at camp when the Native hunters would have been refurbishing weapons. All, except for P6, could possibly have been lost during hunting expeditions and were not retrieved and returned to camp.

In terms of time frame and cultural affiliation, the projectile points indicate a wide range for Native land use. The latest use occurred in the Middle Woodland, and is represented by the Snyder's-like point (P5). The Snyder's projectile points are diagnostic of the early Middle Woodland and were in use from 200 B.C. to A.D. 200. The other projectile point types also include two from the Terminal Late Archaic – a Hind Point (P11) and a Small Point (P9). These range from 3,000 B.P. to 2,800 B.P. (Ellis *et al.* 1990:115), and 3,500 B.P to 3,000 B.P. (Ellis *et al.* 1990:115), respectively. Another projectile point is present in the assemblage which is not *per se* diagnostic but is more than likely attributed to either the Late or Early Archaic. This is a stemmed example (P13) that is missing its tip. This projectile point is thick, and its basal sides have been heavily ground.

At the time of discovery, the Landing site consisted of a scatter of lithic artifacts, covering an area of approximately 30m east-west by 35m north-south. The Stage 2 and 3 controlled surface collection (CSC) and test units resulted in the recovery of 147 artifacts. Eighty-six were recovered from the excavation of test units, and 61 were found during the surface survey. *Table 2* presents the types and frequencies of artifacts recovered.

Artifact Type	Test Unit	CSC	Totals
Biface	2	3	5
Debitage	83	55	138
Uniface	1	2	3
Utilized Flake	0	1	1
Totals	86	61	147

Table 2: Stage 2/3 Artifact Types

The detailed Stage 2 & 3 artifact analyses have been incorporated into the following lithic results.

3.3 Lithic Analysis Results (Stages 2 to 4)

In total, there were 726 lithic artifacts recovered from the Landing site; one hundred and fortyseven were from the Stage 2 and 3 work, and 579 from the Stage 4 excavation.

Artifact Type	Stage 2/3	Stage 4	Totals	%	% Tools (n=22)
Biface	5	7	12	1.7	57.1
Bipolar	0	1	1	0.1	4.8
Uniface	3	2	5	0.7	23.8
Utilized Flake	1	2	3	0.4	14.3
Debitage	138	568	706	97.1	
Totals	147	580	727	100.0	100.0

 Table 3: Stage 2-4 Artifact Types

The bulk of the site consists of debitage (n=706), making up 97.1% of the lithic assemblage. The next main category is the biface, making up only 1.7% (n=12) of the assemblage. However, if the debitage category is removed, the general category of bifaces makes up just over 57% (n=12/21) of the tool assemblage for the site. The analysis for the site covers raw material type, debitage analysis (reduction stage and heat modification), tool analysis (types and heat modification), spatial distribution patterns of debitage and tools, and a general overview.

Raw Material

A visual inspection of the debitage and tools from the Landing site was conducted to determine lithic raw material type. The main type of chert represented on the site is Onondaga chert. This type of chert is representative of 99.2% (n=721) of the lithic assemblage, while 0.3% (n=2) is represented by Haldimand chert, and the unknown or unidentifiable is 0.6% (n=4). This assemblage is extremely homogeneous in terms of raw lithic material utilized, and the Onondaga chert itself, is in the majority, the medium solid gray with some white splotches. During the Stage 2/3 analysis of the site, it was felt that because of the homogeneity of material type and that the Onondaga chert, visually, appeared to be from a single source, that the site indicated a one time occupation. However, there are two types of projectile points present on site (see discussion below). This could indicate a multi-component occupation, or that one or both of the projectile points were lost in hunting and by chance were deposited on the site itself. One of the projectile points (Brewerton) does exhibit an impact fracture. The presence of the damaged Brewerton point on site could also indicate that while the point was broken during a hunt, it was retrieved with its shaft, brought back onto site, the point was then discarded and the shaft was then ready for re-use. Unfortunately, it is difficult to determine which scenario is more probable given that the frequency of the projectile points is so low.

Heat Exposure

All lithics (debitage and tools) were examined for signs of exposure to a heat source or sources. Indications of exposure to heat are signified by "pot-lidding" or spalling, or heat rippling, or by a surface colour change. "Pot-lidding" indicates that the material was exposed to rapid uneven changes in temperature (ie. thrown into a hearth or exposed to a forest fire), and was not a deliberate action of the site inhabitants. An even surface colour change, however, may indicate the deliberate heating of the lithic material to facilitate flaking during tool manufacture, or to provide a deliberate colour change for aesthetic or other cultural purposes. While surface colour change in Onondaga is not easy to discern, it may be detected. Colour change in Onondaga is sometimes indicated by an oxidation of the surface and there may be a dull tan to orange hue to the rock. Another colour change is either a darkening of the chert, or a change to a brittle looking metallic blue. Deliberate heating to enhance flaking is not generally considered for Onondaga chert since there has been no benefit gained from such a practice, and in fact the opposite has happened whereby the chert becomes very brittle and is harder to work with (D. Long pers. comm.).

The presence of material which shows signs of "pot-lidding" may provide the researcher with some indication of the presence of a hearth (a large number of heat-spalled items in a small area), or a post-depositional event such as the burning of a stump or post, while a cluster of discoloured flakes may support the presence of a specific activity area. A general spread of heat altered, either "pot-lidded" or discoloured items with no particular clustering across the site may support the presence of a post-depositional heat source such as a forest or brush fire. These factors must be taken in conjunction with other site information which may support or refute an on-site activity or post-depositional event, such as the presence or absence of fire-reddened soil, a concentration of calcined bone, a dark circular or rectangular stain *et cetera*.

The debitage was checked for exposure to heat, and no discernible outcome could be determined. Well under half of the debitage (n=245/706; 34.7%) showed any signs of having been exposed to heat. Of this sample, 159 (64.9%) showed signs of surface colour change due to heat, and 86 (35.1%) had pot-lidding on one and/or both faces.

Debitage Reduction Sequence Analysis

The analysis of debitage is important for determining various site activities and to differentiate possible activity areas. Debitage was analyzed in terms of its reduction sequence, exposure to heat, and lithic raw material types. The overwhelming type of flake present on site is the fragment/shatter category. This is not surprising since the process of making stone tools is a destructive one, with stone being a brittle medium. It is, however, the other flake type categories that provide the key to the types of activities. *Table 4* presents a summary of the assemblage as a whole and the analyzable categories.

	Total Assemblage		ge Analyzable Sample	
FLAKE TYPE	frequency	%	frequency	%
Primary Decortication	0	0	0	0
Secondary Decortication	1	0.1	1	0.4

Table 4: Debitage Reduction S	Sequence
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	Total Assemblage		Analyzable	Sample
FLAKE TYPE	frequency	%	frequency	%
Initial	20	2.8	20	8.5
Thinning	171	24.2	171	72.5
Trimming	42	6.0	42	17.8
Fragment/shatter	470	66.6		
Potlid	2	0.3	2	0.9
TOTAL	706	100.0	236	100.1

The overwhelmingly dominant analyzable category present is the thinning flake category. Once the fragment/shatter category has been removed, the thinning flakes account for 72.5% of the analyzable assemblage. The trimming flakes account for just under 18%. There were no primary flakes present, and only one secondary decortication flake. As well, only 8.5% of the analyzable assemblage consisted of initial flakes. The predominant activities carried out on site were, therefore, later biface manufacture and finishing. In addition, there was only one core found on site, indicating that the lithic raw material was transported onto the site most likely as preforms and then worked and finished into whatever tool was required and carried away.

Tool Analysis

In total 21 tools were recovered from the Landing site. All of the tools are made on Onondaga chert. *Table 5* shows a breakdown of the tool distribution.

Artifact Type	Artifact Subtype	Frequency
	Bifacially worked	1
	Fragment	3
Biface	Preform tip	3
	Preform fragment	3
	Projectile point	2
Bipolar	Wedge?	1
Uniface	End/side scraper	4
	Scraper fragment	1
Utilized Flake	Microscraper	2
	Spokeshave/Micro	1
Total		21

Table 5: Landing Site Tools



Figure 5: Stage 3 and 4 Landing Site Tool Distribution

Bifaces

The biface category is a catch-all term indicating that a tool has been worked on two faces. Within this category, there are the specific designations of preform, projectile point, and wedge. There are 12 bifaces in the Landing assemblage: two are diagnostic projectile points, one is potentially a bipolar wedge; five are unifaces; three are utilized flakes; six are preform fragments; one is bifacially worked; and three are biface fragments.

Projectile Points

i) Small Point: One projectile point is a Small Point base found in unit 298E493N. The base is slightly ground and the notches are heavily ground. There is a lateral snap that passes through one of the notches. The metrics are: basal width 18.8mm; basal thickness 5.8mm; and basal length 10.4mm.

Small Points are present in the archaeological record from around ca. 3,500 to 2,500 B.P. (Ellis *et al.* 1990:106-107). Small Point distribution is in southwestern Ontario and into the adjacent Midwestern United States. Midwestern Small Point sites include the Michigan sites of Weber I and II (Lovis 1983), and Butterfield (Wobst 1968), and the Illinois Riverton complex (Winters 1969). In Ontario, early research focused on material in the Canadian Biotic zone, along the Huron shoreline, such as work in the vicinity of Kincardine (T.E. Lee 1952; Knechtel 1959), and further north along that shore at sites such as Rocky Ridge, Inverhuron, and Knechtel I (Ramsden 1976; Wright 1972). Sites in southwestern Ontario, in the Carolinian Biotic zone (ie. Crawford Knoll) were also present along lakeshore and marshland environments. Current studies are focusing on lithic gathering strategies (Ellis & Spence 1997). Small interior campsites such as Thistle Hill (Woodley 1990), Innes (Lennox 1986) and Thedford II (Ellis *et al.* 1990) are becoming incorporated into the overall lithic gathering strategies of the Small Point Native peoples (Ellis & Spence 1997).

The Small Point Archaic is characterized by four major varieties of point forms. They are Crawford Knoll (Kenyon 1989), Innes (Lennox 1986), Hind (Lovis and Robertson 1989; Spence and Fox 1986), and Ace-of-Spades (Lovis and Robertson 1989). Crawford Knoll points have been suggested to date early in the Late Archaic Small Point (Kenyon 1989), while Hind points share numerous characteristics with Early Woodland Meadowood points (Spence and Fox 1986).

The settlement-subsistence pattern for Small Point Archaic Aboriginal people has been postulated to consist of two components - a littoral/inland, summer/winter dichotomy. Littoral sites, which are in rich environments, permit the exploitation of many different food resources, and represent multi-season occupations, inhabited any time from the spring into the fall (Ellis *et al.* 1990:114). Inland or upland sites (Canadian biotic zone) are postulated as fall or winter camps that focused on deer hunting and nut gathering (Ellis *et al.* 1990:114). However, Woodley (1990:47) indicates that Thistle Hill could be a warm season base camp, going against the traditional interpretation that inland sites are fall/winter camps. An inland site should not be viewed automatically as a seasonal indicator, but instead as part of localized microenvironment subsistence pattern (Woodley 1990:48).

ii) Brewerton: The second projectile point is a Brewerton ear side-notched point that has suffered a tip impact fracture. This projectile point was found in unit 300E492N. Both the base and the notches have been heavily ground. There are two side notches present on one side, and there has been basal thinning. The metrics are as follows: basal & maximum width 23.0mm; basal height 9.4 mm; notch depth 2.6mm, 1.6mm & 1.4mm; notch width 5.3mm, 3.8, 2.9mm. The last two measurements of depth and width are from the notches on the same edge of the projectile point. Brewerton points have been dated to the Middle Archaic, generally from pre-4500 B.P. (Ellis *et al.* 1990:86). Ritchie (1969:17) describes these points as "generally broad, thick, weakly side-notched, ...small to medium in size, characterized by a broad base with flanges which often project beyond the edges and, for the most part, have been carefully

chipped into small and delicate prominences or 'ears'". These points are known over much of northeastern North America including the Ohio Valley, New York State and Massachusetts (Justice 1987:123). The Brewerton side and corner-notched would appear more frequently than ear side-notched points in southern Ontario (pers. observation).

Preforms

There were three preform tips found, one during the CSC, one in unit 292E500E and one in unit 298E495N. This last tip has coarse collateral flaking on one face, and the edges are irregular but the tip is not overly thick.

There were also three preform fragments found. One preform fragment was found in unit 301E490N; one in unit 299E493N and one in 300E492N. The one from 301E490N is the midsection of a late stage preform with a possible heat snap at one end. There is a stack or 'pig' in the central part of the artifact by the lateral snap. The flaking is fine and shallow with the exception of the 'pig'. This preform is 7.0mm thick. The one from unit 300E492N is also a later stage preform having a rounded base, but slightly more robust than the one from 299E493N. This preform has been heat shattered. The maximum width is at the lateral snap, and is 32.2mm, while the maximum thickness is 8.0mm.

Biface Fragments & Bifacially Worked

There were three biface fragments recovered from the site. One was found during the CSC, while the other two were from the Stage 4 excavation. The one from unit 301E489N is fairly thick (6.6mm) and is a small fragment of just one edge. The one from unit 299E496N is of undetermined function as it has been blasted by heat, is thick and irregular in outline. The bifacially worked piece has minimal flaking on one side, is small and was found during the CSC.

A) Unifaces

There are five unifaces in the lithic assemblage. Two were found during the CSC. One from the CSC is made on a bifacial thinning flake and has use-wear along both the dorsal distal edge and the dorsal right edge. There is no indication of formal hafting. The other CSC scraper has use-wear mostly on the dorsal distal edge, but also has some slight use-wear along the dorsal right edge as well. This scraper is made from a large flake fragment.

Two unifaces are end-side scrapers that were found during excavation. One was from unit 286E500N, that exhibits use-wear on the dorsal distal edge. The bit end is steeply retouched, and the whole of the edge has been used. There is no sign of hafting with this scraper. The other end-side scraper was found in unit 296E493N, and has a long and steep working edge. The fifth uniface is a scraper fragment, exhibiting an irregular edge and is very small. No metrics could be taken.

Provenience	Bit Height	Bit Depth	Length
CSC	6.5	3.6	25.5
CSC	2.0	2.9	24.2/7.0
CSC	2.0	2.9	24.2/7.0

Table 6: Uniface Metrics (in	ı mm)
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286E500N	5.3	2.5	23.3
296E493N	7.5	3.2	35.5
296E497N	incomplete	incomplete	incomplete

B) Utilized Flakes

There were three utilized flakes in the Landing lithic assemblage. The utilized flake from the CSC is a microscraper made on a flake fragment that has a planar dorsal surface. The utilization is on the ventral, lower left side and is considered to be a microscraper. One found in unit 299E494N may have been a dual purpose utilized flake, exhibiting both spokeshave and microscraper edging. The utilized edge is more representative of "nibbling" than real use-wear and may be from post-depositional activities rather than pre-deposit ones. Review under a high-powered microscope would be able to determine if real use-wear had occurred. The "used" edge is on the dorsal left and right sides. The second utilized flake from excavation came from unit 300E487N, and is potentially a microscraper. Again, much like the previous utilized flake, there is some doubt as to its veracity as a *bona fide* utilized flake. This potential tool is made from a small, thick thinning flake on the ventral right side. The area of use-wear is small and incidental.

C) Wedge

There was one potential wedge (bipolar) found on site. This biface is not well-formed, and is a very small fragment. The only measurement possible was for thickness; it is 5.8 mm thick.

3.4 Site Summary & Interpretation

Intrasite Summary

The debitage present indicates that the main lithic activity for the site was the later stage biface manufacture, as well as some finishing of the bifaces into final forms. This is supported by the presence of later stage bifaces on site (preforms and biface fragments) with no cores present.

The Landing site is fairly small as it existed at the time of excavation, and considering that it would have been ploughed over the decades the artifacts should have been distributed by the ploughing action over a wider area than was found. The areas of heaviest debitage concentrations were within the middle of the excavated block. However, the concentrations were not that high in frequency and really not widely distributed before the frequencies dropped off substantially. The central concentration of the block excavation is really not much wider than four metres east-west by five metres north-south, while the southern section is even smaller at two metres east-west by four metres north-south. The very nature of the site would indicate that this was a one-time, briefly occupied site, with quite probably only one, or at the most, two activity areas.

The distribution of the tools also suggests this, as they too are clustered for the most part in the central portion of the northern area, with a couple in the southern section. The presence of the two different projectile points (Small Point, Late Archaic and Brewerton, Middle Archaic) is contradictory to the one-time occupation thought, but as stated earlier, one of the points could have been accidentally dropped on the site by chance, or it may even have been curated by one of the Aboriginal occupants of the site and left behind.

The amount of tools in comparison with the amount of debitage provides some interesting data on the site. There is a high ratio of tools versus debitage, and there is a wide variety of tools present on the site. There were six later stage preform fragments and three biface fragments found on site. Later stage biface manufacture was being conducted on the site, but by the lack of debitage in general on site, it could be inferred that the preforms were broken relatively soon after the knapper had started reducing them, otherwise, there would have been far more debitage present. As well, the presence of scrapers (both formal and microscrapers) and a potential wedge is indicative that activities other than just the reducing of bifaces occurred on site. Hide preparation, bark stripping and other activities were conducted on site. This would indicate that the site was not one of specialized hunting, but more of a general nature, and possibly a family occupation for a brief time some time in the Middle or Late Archaic.

Intersite Comparison

There are 51 registered archaeological findspots and sites within a two-kilometre radius of the Landing site. Thirty six of the 51 registered sites are simply findspots; this is to say that while some artifact or artifacts were found, it/they were not of sufficient quantity to be considered a site. Seven sites are registered as Euro-Canadian and are homesteads and/or middens (AiGw-228, -229, -230, -218 & -227 and AjGw-227 & -44). Two of these Euro-Canadian sites also contained some Aboriginal artifacts, but were not diagnostic (AiGw-230 & -227). The other types of registered sites present in the area consist of campsites or potential campsites - one (AiGw-307) from the Late Woodland (Daniels projectile point); two (AjGw-27 & AiGw-132) from the Early Woodland (Meadowood projectile points); and five that are labelled as Aboriginal precontact, containing no diagnostic artifacts (AiGw-236, -239, -212, -215, & -219).

The findspots shed some light on the types of activities carried out in the general area of the Landing site. This area of Oakville has been utilized over the millennia by various Aboriginal groups. This is reflected by the number of diagnostic projectile points found in the various archaeological surveys conducted. Seven of these findspots (AiGw-217, 232, 237, 238, 242, 335, & 336) are listed as possible or are Brewerton side-notched projectile points. Other diagnostic isolated finds include: Early Woodland Meadowood (AiGw-231 & 240); Early Archaic bifurcate or simply Early Archaic (AiGw-243, 337 & 216); Late Archaic Genesee (AiGw-241); and Late Woodland, possibly Dewaele (AiGw-261).

The Green Ginger property reflects this wide use of the area by different Aboriginal groups. In the Stage 2 assessment, eight isolated biface finds indicate that the property was heavily utilized, and that the number of impact fractures was indicative of breaking during hunting. The time frames for some of these projectile points that have been identified include the isolated find P9 as Small Point and P11 as Hind, Late Archaic, and isolated find P5 as Snyderlike, Early Middle Woodland. The diagnostics from the Landing site have produced a Small Point, as well as an ear side-notched Brewerton projectile point, that clearly show continuity within the property (the Small Point P9 isolated find) as well as further afield with the seven isolated Brewerton finds in the two-kilometre radius. Unfortunately, there is nothing to tie the site specifically to one Aboriginal group or the other. Therefore, the best that can be stated is that the Landing site is a small, probably one-time occupied campsite, by a family either during the Middle Archaic or the Late Archaic.

4.0 CONCLUSIONS AND RECOMMENDATIONS

During the months of April and May 2006, *Archeoworks Inc.* undertook the Stage 4 mitigation of the Landing Site (AiGw-427), within Lot 13, Concession 1 NDS, in the Town of Oakville, Regional Municipality of Halton. A total of 79 units were excavated over the site area, yielding 579 artifacts. Analysis of the artifact assemblage tells us that the Landing site was likely a small, single-use campsite, occupied by a family during the Middle or Late Archaic period. On the basis of the results of the complete Stage 4 mitigations and extensive artifactual analysis outlined in this report, the following recommendations are submitted to the *Ministry of Culture (MCL)*:

- 1. The Landing Site (AiGw-427) should be deemed cleared of further archaeological consideration.
- 2. In the event that deeply buried archaeological remains are encountered during construction, the office of the Regulatory & Operations Group, *Ministry of Culture* [416-314-7143] should be contacted immediately.
- 3. In the event that human remains are encountered during land development, the *Ministry* of *Culture* [416-314-7143] and the Registrar or Deputy Registrar of the Cemeteries Regulation Unit of the *Ministry of Consumer and Business Services* [416-326-8404] should be contacted immediately.

Under Section 6 of Regulation 881 of the Ontario Heritage Act, *Archeoworks Inc.* will, "keep in safekeeping all objects of archaeological significance that are found and all field records that are made."

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APPENDIX A:

<u>CATALOGUE OF RECOVERED ARTIFACTS</u> <u>THE LANDING SITE: AiGw-427</u>

East	North	CSP/TP	Lev	Art Type	Art Subty	Freq	Material	Heat	Comments
294	495		1	debitage	fragment	1	On	0	
295	492		1	debitage	thinning	1	On	0	
295	492		1	debitage	fragment	1	On	6	
295	492		1	debitage	fragment	1	On	0	flat flake
295	493		1	debitage	thinning	2	On	1	
295	493		1	debitage	fragment	1	On	0	solid gray
295	494		1	debitage	fragment	2	On	0	
295	494		1	debitage	trimming	1	On	0	
295	495		1	debitage	fragment	6	On	0	heat rippling, mimics use wear
295	495		1	debitage	fragment	3	On	1	U
295	495		1	debitage	trimming	1	On	0	
295	496		1	debitage	fragment	2	On	1	
295	496		1	debitage	fragment	3	On	0	
295	497		1	debitage	fragment	1	On	0	
295	497		1	debitage	fragment	1	На	0	
295	498		1	debitage	fragment	2	On	0	
296	489		1	debitage	fragment	2	On	0	
296	489		1	debitage	trimming	1	On	2	
296	489		1	debitage	thinning	3	On	0	
296	489		1	debitage	fragment	1	On	1	edge heat damaged, mimics use wear
296	490		1	debitage	thinning	1	On	1	
296	490		1	debitage	thinning	3	On	0	
296	491		1	debitage	thinning	3	On	0	all very small
296	491		1	debitage	thinning	1	On	6	very small
296	491		1	debitage	fragment	2	On	0	
296	491		1	debitage	fragment	1	On	4	
296	492		1	debitage	fragment	5	On	0	
296	492		1	debitage	fragment	1	On	1	
296	492		1	debitage	fragment	1	On	2	dull metallic blue
296	492		1	debitage	thinning	1	On	0	
296	493		1	debitage	thinning	2	On	0	both small
296	493		1	debitage	fragment	1	On	2	entire dors heat rippled

296	493	1	debitage	fragment	5	On	0	
296	493	1	uniface	end scraper	1	On	0	dors distal; steep edge bit
296	494	1	debitage	fragment	8	On	0	
296	494	1	debitage	thinning	3	On	0	
296	494	1	debitage	trimming	1	On	0	Tiny
296	495	1	debitage	fragment	8	On	0	
296	495	1	debitage	thinning	3	On	0	
296	495	1	debitage	thinning	2	On	1	
296	496	1	debitage	fragment	1	On	1	
296	496	1	debitage	fragment	1	On	2	dull metallic blue
296	496	1	debitage	fragment	3	On	0	
296	496	1	debitage	initial	1	On	1	heat damage, mimics use wear
296	496	1	debitage	thinning	2	On	1	
296	497	1	debitage	fragment	5	On	0	
296	497	1	debitage	thinning	1	On	0	Small
296	497	1	debitage	trimming	1	On	1	
296	497	1	bipolar	wedge	1	On	0	irregular, battered crushed edge
296	497	1	uniface	scraper fr	1	On	0	steep, short bit; fragment
296	498	1	debitage	trimming	1	On	0	
296	498	1	debitage	fragment	2	On	0	
296	498	1	debitage	fragment	1	On	1	
297	489	1	debitage	thinning	1	On	1	
297	489	1	debitage	thinning	3	On	0	
297	489	1	debitage	fragment	1	On	0	
297	489	1	debitage	initial	1	On	0	Small
297	491	1	debitage	fragment	4	On	0	
297	491	1	debitage	fragment	2	On	1	
297	491	1	debitage	thinning	1	On	0	
297	491	1	debitage	initial	1	On	0	
297	492	1	debitage	fragment	5	On	0	
297	493	1	debitage	thinning	2	On	0	
297	493	1	debitage	thinning	1	On	1	vry lrg platform; chatter on dors proximal
297	493	1	debitage	fragment	1	On	0	
297	493	1	debitage	fragment	1	On	6	

297	495	1	debitage	thinning	1	On	6	crushed platform
297	495	1	debitage	thinning	1	On	1	
297	495	1	debitage	fragment	7	On	0	
297	495	1	debitage	fragment	2	On	1	
297	496	1	debitage	fragment	3	On	1	2 med flakes
297	496	1	debitage	fragment	5	On	0	1 lrg flake
297	496	1	debitage	thinning	2	On	0	
297	496	1	debitage	thinning	2	On	1	
297	497	1	debitage	trimming	1	On	0	similar to notching flake
297	497	1	debitage	thinning	1	On	1	
297	497	1	debitage	fragment	1	On	6	
297	497	1	debitage	fragment	1	On	2	most dors heat rippled
297	497	1	debitage	fragment	5	On	0	1 dors crushing -not use wear
297	497	1	debitage	initial	2	On	0	vent left crushing-not use wear
297	497	1	debitage	initial	1	On	1	dors prox chatter
297	498	1	debitage	fragment	4	On	0	
297	498	1	debitage	initial	1	On	0	
298	490	1	debitage	fragment	3	On	0	
298	490	1	debitage	thinning	1	On	0	
298	490	1	debitage	thinning	1	On	1	
298	490	1	debitage	secondary	1	On	0	dors planar surface
298	491	1	debitage	thinning	1	On	0	crushed platform
298	491	1	debitage	trimming	1	On	0	
298	491	1	debitage	fragment	9	On	0	
298	492	1	debitage	fragment	9	On	0	
298	492	1	debitage	thinning	1	On	0	
298	493	1	debitage	trimming	2	On	0	
298	493	1	debitage	thinning	1	On	1	Small
298	493	1	debitage	initial	1	On	0	Small
298	493	1	debitage	fragment	4	On	0	
298	493	1	debitage	fragment	3	On	1	
298	493	1	debitage	fragment	2	On	6	
298	493	1	debitage	shatter	1	On	12	small, blocky, heat ripples on edge & a side
			1.16					side notched base, light grd base, heavier grnd
298	493	1	biface	ppo base	1	On	0	notches

							_	
298	494	1	debitage	fragment	4	On	0	
298	494	1	debitage	thinning	2	On	0	Small
298	494	1	debitage	thinning	2	On	1	Small
298	494	1	debitage	thinning	1	On	6	Small
298	494	1	debitage	initial	1	On	0	
298	495	1	debitage	fragment	5	On	0	
298	495	1	debitage	fragment	6	On	1	
298	495	1	debitage	trimming	1	On	1	
298	495	1	debitage	thinning	1	On	0	Small
298	495	1	debitage	fragment	1	Unk	0	Port Colb? – small
298	495	1	biface	preform tip	1	On	1	small, sinuous edge, biconvex
298	496	1	debitage	shatter	1	On	1	tiny sliver
298	496	1	debitage	fragment	4	On	0	
298	496	1	debitage	fragment	1	On	2	Small
298	496	1	debitage	fragment	1	On	6	
298	496	1	debitage	fragment	2	On	1	
298	496	1	debitage	trimming	1	On	0	
298	496	1	debitage	thinning	1	On	4	
298	496	1	debitage	thinning	1	On	0	
298	496	1	debitage	thinning	1	On	1	
298	497	1	debitage	fragment	7	On	0	
298	497	1	debitage	fragment	1	On	1	
298	497	1	debitage	fragment	1	On	2	
298	497	1	debitage	thinning	2	On	0	
298	498	1	debitage	thinning	1	On	0	
299	490	1	debitage	initial	1	On	0	
299	490	1	debitage	thinning	2	On	0	
299	490	1	debitage	trimming	1	On	6	
299	491	1	debitage	fragment	1	On	6	
299	491	1	debitage	fragment	1	On	4	
299	491	1	debitage	fragment	2	On	1	
299	491	1	debitage	fragment	2	On	0	
299	492	1	debitage	fragment	1	On	0	
299	492	1	debitage	fragment	1	On	1	

	10.0					-		
299	492	1	debitage	thinning	1	On	1	
299	492	1	debitage	thinning	2	On	0	1 has crushed platform
299	493	1	debitage	fragment	7	On	0	
299	493	1	debitage	fragment	2	On	1	
299	493	1	debitage	fragment	1	On	6	
299	493	1	debitage	fragment	1	On	2	
299	493	1	debitage	thinning	2	On	0	
299	493	1	biface	preform frag	1	On	2	lrg heat fracture; small rather chunky preform base?
299	494	1	debitage	fragment	5	On	0	
299	494	1	debitage	trimming	1	On	0	
299	494	1	debitage	thinning	2	On	1	
299	494	1	util flake	micro/spoke	1	On	1	dors right & left
299	495	1	debitage	fragment	6	On	0	
299	495	1	debitage	fragment	3	On	1	
299	495	1	debitage	trimming	1	On	0	
299	495	1	debitage	thinning	2	On	1	
299	495	1	debitage	thinning	2	On	0	
				<u> </u>				lrg, thick & one edge blasted by heat;
299	495	1	debitage	initial	1	On	12	secondary?
299	495	1	biface	fragment	1	On	1	thick & small; 1 crushed edge - wedge? or just frag?
299	496	1	debitage	fragment	5	On	0	
299	496	1	biface	fragment	1	On	12	blasted by heat; undetermined function; thick & irreg
299	497	1	debitage	fragment	3	On	0	
299	497	1	debitage	initial	1	On	0	Small
299	498	1	debitage	trimming	1	On	0	lrg platform for trim flk
300	486	1	debitage	fragment	2	On	0	
300	486	1	debitage	fragment	1	On	6	
300	486	1	debitage	thinning	1	On	1	
300	486	1	debitage	trimming	1	On	0	
300	487	1	debitage	fragment	1	On	6	
300	487	1	debitage	fragment	1	On	0	
300	487	1	debitage	trimming	1	On	0	lrg, flat platform
300	487	1	debitage	thinning	1	On	1	

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300	487	1	debitage	thinning	1	On	0	
300	487	1	debitage	thinning	1	On	4	
300	487	1	util flake	microscraper	1	On	0	on thinning; ventral right
300	488	1	debitage	thinning	3	On	1	
300	488	1	debitage	thinning	1	On	2	
300	488	1	debitage	fragment	3	On	0	
300	488	1	debitage	fragment	1	On	1	
300	489	1	debitage	thinning	2	On	0	Small
300	489	1	debitage	fragment	1	On	1	
300	489	1	debitage	fragment	2	On	0	
300	489	1	debitage	initial	1	On	0	long & thin; small
300	490	1	debitage	fragment	3	On	0	
300	490	1	debitage	fragment	1	On	1	
300	490	1	debitage	thinning	1	On	1	
300	491	1	debitage	initial	1	On	1	Small
300	491	1	debitage	fragment	2	On	1	
300	491	1	debitage	fragment	9	On	0	
300	491	1	debitage	initial	1	On	6	lrg platform, thick & short
300	492	1	debitage	thinning	3	On	0	
300	492	1	debitage	thinning	1	On	1	
300	492	1	debitage	fragment	2	On	2	
300	492	1	debitage	fragment	1	On	6	
300	492	1	debitage	fragment	8	On	0	
300	492	1	debitage	shatter	1	On	6	
						_		impact fract; side notched (2 on one side),
300	492	1	biface	рро	1	On	1	grnd base
300	492	1	biface	preform frag	1	On	1	thick, lrg fragment
300	493	1	debitage	fragment	5	On	0	
300	493	1	debitage	thinning	3	On	0	all small; one pale
300	494	1	debitage	thinning	1	On	0	small w/lrgish platform
300	494	1	debitage	trimming	1	On	0	
300	494	1	debitage	fragment	3	On	0	
300	495	1	debitage	fragment	2	On	0	
300	496	1	debitage	fragment	2	On	1	
300	496	1	debitage	fragment	1	On	0	

300	496	1	debitage	thinning	1	On	1	
300	497	1	debitage	fragment	2	On	0	
301	486	1	debitage	fragment	6	On	0	
301	486	1	debitage	fragment	1	On	6	
301	486	1	debitage	thinning	1	On	1	short, thick, small
301	487	1	debitage	thinning	1	On	1	Small
301	487	1	debitage	thinning	3	On	0	all small
301	487	1	debitage	trimming	1	On	0	
301	487	1	debitage	fragment	1	On	2	
301	487	1	debitage	fragment	8	On	0	
301	487	1	debitage	potlid	1	On	6	
301	488	1	debitage	thinning	4	On	0	all small
301	488	1	debitage	thinning	2	On	1	Small
301	488	1	debitage	fragment	10	On	0	
302	490	1	debitage	fragment	5	On	0	
302	490	1	debitage	fragment	5	On	1	
302	490	1	debitage	fragment	2	On	6	
302	490	1	debitage	fragment	1	On	2	
302	490	1	debitage	trimming	1	On	6	very potlidded
302	490	1	debitage	initial	1	On	1	
302	491	1	debitage	thinning	3	On	0	one light variety; all small
302	491	1	debitage	thinning	1	On	1	Small
302	491	1	debitage	fragment	3	On	0	
302	491	1	debitage	fragment	2	On	2	
302	491	1	debitage	fragment	1	On	6	
302	492	1	debitage	thinning	3	On	0	all small
302	492	1	debitage	trimming	1	On	0	
302	492	1	debitage	fragment	1	On	0	
303	487	1	debitage	fragment	1	On	1	
303	487	1	debitage	fragment	1	On	2	
303	487	1	debitage	fragment	1	On	0	
303	487	1	debitage	thinning	2	On	0	both small
303	487	1	debitage	thinning	1	On	1	buff; small
303	488	1	debitage	initial	1	On	0	small, thick platform

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303	488	1	debitage	thinning	3	On	0	
303	488	1	debitage	fragment	2	On	0	
303	488	1	debitage	fragment	1	On	1	
303	489	1	debitage	fragment	1	On	2	
303	489	1	debitage	fragment	1	On	1	
303	489	1	debitage	initial	1	On	1	Small
303	489	1	debitage	thinning	1	On	0	Small
303	490	1	debitage	fragment	2	On	0	
303	490	1	debitage	fragment	2	On	1	
303	490	1	debitage	fragment	1	On	2	
303	490	1	debitage	thinning	1	On	1	Small
303	490	1	debitage	thinning	1	On	0	Small
303	491	1	debitage	fragment	3	On	9	
301	489	1	debitage	fragment	5	On	0	
301	489	1	debitage	fragment	1	On	1	
301	489	1	debitage	fragment	1	On	12	
301	489	1	debitage	fragment	4	On	6	
301	489	1	debitage	thinning	3	On	1	all small
301	489	1	debitage	thinning	1	On	0	very small, thick platform
301	489	1	biface	bif worked?	1	On	1	looks like flake with min scarring on ventral
301	491	1	debitage	trimming	1	On	0	
301	491	1	debitage	thinning	1	On	0	Small
301	491	1	debitage	thinning	1	On	6	Small
301	491	1	debitage	thinning	1	On	2	Small
301	491	1	debitage	shatter	1	On	6	blocky, heat blasted
301	491	1	debitage	fragment	1	On	1	
301	491	1	debitage	fragment	1	On	2	
301	491	1	debitage	fragment	1	On	4	
301	492	1	debitage	thinning	2	On	0	Smal
	10.5							planar dors surface; pronounced prox/distal
301	492		debitage	thinning	1	On	1	curve
301	492		debitage	tragment	4	On	0	
301	492	1	debitage	tragment	2	On	1	
301	493	1	debitage	trimming	1	On	0	
301	493	1	debitage	thinning	1	On	4	Small

301	493	1	debitage	thinning	1	On	0	thick, crushed platform; small
301	493	1	debitage	fragment	4	On	0	
302	486	1	debitage	fragment	1	On	0	
302	487	1	debitage	fragment	3	On	0	
302	487	1	debitage	potlid	1	On	6	lrg irregular
302	487	1	debitage	thinning	1	On	1	Small
302	487	1	debitage	thinning	1	On	2	Small
302	487	1	debitage	trimming	1	On	6	
302	488	1	debitage	fragment	6	On	0	
302	488	1	debitage	fragment	4	On	1	
302	488	1	debitage	fragment	1	On	2	
302	488	1	debitage	fragment	1	On	6	
302	488	1	debitage	thinning	2	On	0	both small
302	488	1	debitage	thinning	1	On	1	thick platform; thick flk
302	489	1	debitage	thinning	2	On	0	both small
302	489	1	debitage	fragment	2	On	0	
302	489	1	debitage	fragment	1	On	1	
302	489	1	debitage	fragment	1	On	12	
302	489	1	debitage	fragment	2	On	6	

APPENDIX B: LITHIC DEFINITIONS

FLAKE DEFINITIONS

Primary Decortication

Primary flakes are the by-products of the initial stages of reduction of lithic raw material. Typically, they are large, with a pronounced bulb of percussion. The angle of the striking platform is approximately 90 degrees, and the platform is usually large and unfaceted. The dorsal surface contains 50-100% of its cortical surface, indicating little or no modification of the core prior to the removal of the primary flake.

Secondary Decortication

Secondary flakes are generally large, although size really does not matter. They have a diffuse bulb of percussion, and the striking platform angle is about 90 degrees and unfaceted. The dorsal surface of the secondary flake retains up to 50% of its cortical surface, indicating that some flakes had been struck from the core prior to its removal. Dorsal flake scars are few in number and large.

Tertiary

Tertiary flakes usually lack any traces of cortical surface, but may exhibit some remnants as the flakes were removed to eliminate any bumps or flaws in the tool. Tertiary flakes represent an advanced stage of the reduction sequence, being by-products of preform and biface manufacture. Tertiary flakes may be divided into initial, biface thinning and biface retouch flakes.

a) Initial: Initial flakes are associated with the core reduction process and early preform manufacture. They typically should have no cortical surface, dorsal scars are few and large, and the striking platform is unprepared, approximately 90 degrees.

b) Thinning: These flakes are smaller and thinner than initial flakes, and are produced "in the thinning to shaping stage of biface manufacture" (Ellis 1979:35). Platforms are varied from large to small and "pseudo" faceted to multi-faceted. The platform angle is acute, ranging from 40 to 65 degrees forming an overhanging lip on the ventral surface (Ellis 1979:37 and 53).

c) Trimming/Retouch: In this definition, trimming flakes include those flakes produced by the manufacture and rejuvenation of a biface. Although the flakes are the product of two different activities, it is difficult to distinguish between these flakes (Ellis 1979:48), and therefore it is expeditious to place them in the same general category of trimming flakes. Trimming flakes are generally so small that they are not recovered using the conventional 6mm hardware cloth. The platform angle is acute, as well as abraded, the lip is overhanging, and the bulb of percussion is diffuse (Ellis 1979:44).*Note: The reduction of lithic material into a finished stone tool is a reductive process and one conducted on a continuum. It is for the convenience of the analyst to attempt to place the debitage into discrete categories. The designation of primary, secondary and tertiary is not to imply that the size of the flakes decreases as the process continues, nor is it to suggest that all tertiary flakes are removed following secondary flakes, and all

secondary are removed after all primary flakes. The definitions are more the end result, rather than the sequence, and the nomenclature is for ease of reference.

Utilized Flakes

Pieces of debitage that have been selected to be used as tools. The piece has been picked up, used in a specific task and then discarded.

Retouched Flakes

Pieces of debitage that have been selected to be used as tools. The piece has been picked up, modified in order to be adapted for a specific task, and then discarded.

Uniface

A tool that has been knapped on only one face, *ie*. a formal endscraper.

Biface

A tool that has been knapped on both (two) faces.

APPENDIX C: PLATES



Plate 1: Reestablishing grid



Plate 2: Excavating units



Plate 3: Excavating units



Plate 4: Shovel-shining



Plate 5: Excavated Site Area



Plate 6: Looking (*l* to *r*) at Brewerton projectile point and preform fragment collected from unit 300-492



Plate 7: Looking at microscraper collected from unit 300-487



Plate 8: Looking at biface collected from unit 299-496



Plate 9: Looking at biface, possibly a wedge, collected from unit 299-495



Plate 10: Looking at a microscraper/spoke collected from unit 299-494



Plate 11: Looking at biface/perform tip collected from unit 298-498 and biface/perform fragment collected from unit 299-493



Plate 12: Looking at projectile point base collected from unit 298-493 and end scraper collected from unit 296-493