

Late Woodland Pottery Production in Essex County, Ontario: Evidence from the Puce Site

By

Chiara Williamson

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

This thesis examines a collection of Early Late Woodland (Western Basin Tradition) pottery from the Puce Site (AbHq-3) in St. Clair Shores, Essex County, Ontario. The site was discovered through a Cultural Resource Management Stage 2 property assessment, and subsequent archaeological work was undertaken to excavate the site. Using an attribute analysis, 51 earthenware vessels recovered during these excavations are examined using 11 different variables: Nature of Specimen, Castellation form, Upper Rim Profile, Rim Form, Lip Thickness, Collar Height, Surface Modification, Decorative Completeness, Tool, Technique, and Motif. This analysis indicates that the pottery producers at Puce were employing design methods associated with the late Riviere au Vase and early Younger phases of the Western Basin Tradition. Results show that cord wrapped instruments were the preferred tool of executing decorative motifs, while stamping techniques and discontinuous linear oblique lines were the most common design elements found within the collection. These traits are common during the Early Late Woodland in the lower Great Lakes region. Finally, these data are compared to the nearby Silverman site, and other sites in the region, in an effort to elucidate the presence of local design patterns in pottery production.

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Table of Contents

Author's Declaration.....	ii
Abstract.....	iii
Acknowledgements.....	iv
List of Figures.....	viii
1.1 Introduction.....	1
1.2 Cultural Resource Management and Archaeological Licencing in Ontario	1
1.3 The Public Issue: Lack of Indigenous Control Over Artifact Stewardship	3
1.4 Current CRM Engagement with Indigenous Communities.....	5
1.5 The Way Forward	6
2.1 Introduction.....	10
2.2 Previous Research on the Western Basin Tradition.....	10
2.3 Archaeology of the Puce Site (AbHq-3).....	14
2.4 Methodology	19
2.5 Results of the Attribute Analysis	22
2.5.1 Aspects of Form.....	22
2.5.2 Aspects of Decoration	24
2.5.2.1 Vessel Exterior	24
2.5.2.2 Vessel Interior	25
2.5.2.3 Vessel Lip.....	27
2.6 Comparison with the Silverman Site (AbHr-5)	28
2.7 Discussion.....	29
2.7.1 Lifeways at Puce.....	34
2.8 Conclusions.....	37
2.9 References Cited	39
3.0 Appendix 1: Tabular Data.....	42
Table A1: Comparison between Puce and Silverman – Decorative Attributes	42
Table A2: Lip Surface Modification.....	45
Table A3: Interior Surface Modification	45
Table A4: Exterior Surface Modification	45
Table A5: Exterior Band 1 Tool	45
Table A6: Exterior Band 1 Technique	46
Table A7: Exterior Band 1 Motif.....	46
Table A8: Exterior Band 2 Tool	46
Table A9: Exterior Band 2 Technique	47

Table A10: Exterior Band 2 Motif.....	47
Table A11: Exterior Band 3 Tool	47
Table A12: Exterior Band 3 Technique	48
Table A13: Exterior Band 3 Motif.....	48
Table A14: Interior Band 1 Tool	48
Table A15: Interior Band 1 Technique	48
Table A16: Interior Band 1 Motif.....	49
Table A17: Interior Band 2 Tool	49
Table A18: Interior Band 2 Technique	49
Table A19: Interior Band 2 Motif.....	50
Table A20: Interior Band 3 Tool	50
Table A21: Interior Band 3 Technique	50
Table A22: Interior Band 3 Motif.....	50
Table A23: Lip Band 1 Tool.....	50
Table A24: Lip Band 1 Technique.....	51
Table A25: Lip Band 1 Motif.....	51
Table A26: Lip Band 2 Tool.....	51
Table A27: Lip Band 2 Technique.....	51
Table A28: Lip Band 2 Motif.....	52
Table A29: Upper Rim Profile.....	52
Table A30: Rim Form.....	52
Table A31: Castellation Form.....	52
Table A32: Lip Form	52
Table A33: Interior Decorative Completeness	53
Table A34: Lip Decorative Completeness	53
Table A35: Exterior Decorative Completeness	53

List of Figures

Figure 1. Western Basin Sites in Essex County, Southwestern Ontario.....	14
Figure 2. Aerial view of the Puce Site	15
Figure 3. Plan view of Puce Site.....	17
Figure 4. Radiocarbon Calibrations for Puce.....	19
Figure 5. Vessel 8, 37, 30, 18, and 20 from the Puce site.....	31
Figure 6. Vessel 3 from the Puce site.	32
Figure 7. Younger Phase Miniature Vessels from the Dymock Site	34

Chapter 1: Artifact Stewardship within Cultural Resource Management: A Public Issue

1.1 Introduction

Ontario sees hundreds of archaeological sites being excavated each year by a multitude of cultural resource management (CRM) firms. The vast majority of these excavations – fully 95 percent – are in the form of mitigative or salvage investigations (Warrick 2017:91). To excavate most archaeological sites in Ontario, with the exception of federally managed lands, one must be properly licenced through the Ministry of Heritage, Sport, Tourism, and Culture, and needs to follow procedures enshrined in the Ontario Heritage Act. According to the Terms and Conditions of an archaeological licence, per the Ontario Heritage Act, the licence holder is responsible for safekeeping all artifacts recovered during an excavation and holding these items in trust for the people of Ontario (Ontario Heritage Act R.S.O 1990). Many of the sites that are excavated are Indigenous, either pre- or post European contact. The excavation of these sites has numerous implications for Indigenous communities. For one, when it comes to the conservation and stewardship of artifacts, First Nations are often left out of the stewardship discourse. Indeed, there is no mention of Indigenous involvement when it comes to the legislation outlining the responsibilities of the archaeological licensee. With thousands of collections in the care of licenced archaeologists in Ontario, and with many more being acquired each year, Indigenous peoples have a right to care for their own cultural patrimony.

1.2 Cultural Resource Management and Archaeological Licencing in Ontario

To better understand the context of CRM archaeology in Ontario, one must know the various structures in place that govern this practice. The regulatory body that oversees archaeology is the Archaeology Programs Branch of the Ministry of Heritage, Sport, Tourism, and Culture Industries (MHSTCI). Among other things, this branch of the civil service

administers archaeological licencing, maintains the Ontario Public Register of Archaeological Reports, and reviews all reports of archaeological work. According to the Ontario Heritage Act (R.S.O 1990), an individual does not need a license to be employed with a CRM company as a field technician. However, to supervise fieldwork and carry out other tasks, one must apply for an archaeological licence. There are three categories of licences one can hold: a Professional licence, an Applied Research licence, and an Avocational licence. While each licence has different requirements, the Terms and Conditions are regulated by the MHSTCI as described in the Ontario Heritage Act. According to this piece of legislation, under Part IV: Conservation of Resources of Archaeological Value, subsection 66 (1) states that the licensee must hold any curated artifacts in trust for the people of Ontario, as noted earlier. Within the Terms and Conditions for Archaeological Licences, condition 14 contains the same statement, that “the licensee shall hold in safekeeping all artifacts and records of archaeological fieldwork carried out under this licence, except where those artifacts and records are transferred by the licensee to Her Majesty the Queen in right of Ontario or the licensee is directed to deposit them in a public institution in accordance with subsection 66(1) of the Act”.

In 2011, the MHSTCI released the *Standards and Guidelines for Consultant Archaeologists*. Within the Standards and Guidelines, explicit procedures are laid out for completing archaeological work in Ontario. Within a consulting context, this work typically proceeds through up to four stages. A Stage one archaeological assessment is a background study of the proposed area of development including past land use(s). It is meant to provide the consulting archaeologist(s) with information about a property’s archaeological potential and to gauge if fieldwork might be needed (Ministry of Tourism and Culture 2011:14). If so, as determined by either the Ministry or a municipality, a Stage 2 assessment is carried out with the

objective being to record all examples of Indigenous and Euro-Canadian cultural heritage on the property and to determine if further, more expansive (Stage 3) work is necessary to properly document this cultural heritage. If such work is needed, then the archaeologist must further explore and define these heritage sites. A representative sample of artifacts must be collected and, based on these findings, will be used to determine if further mitigative work is needed (Ministry of Tourism and Culture 2011:45). If so, the final stage of an archaeological investigation is the Stage four. This stage is meant “to address development impacts on an archaeological site with a level of cultural heritage value or interest that has been determined to require mitigation. There are two approaches for mitigation of development impacts: avoidance and protection, or excavation (Ministry of Tourism and Culture 2011:67)”. After each stage is completed, a report must be sent to the MHSTCI for review. Stages 2, 3, and 4 all result in the acquisition of archaeological artifacts during their respective assessments. These artifacts, as well as any associated records, must be curated by the licensee responsible for the work.

1.3 The Public Issue: Lack of Indigenous Control Over Artifact Stewardship

Indigenous peoples are not considered separate nations with the larger nation state of Canada, except in a few areas (e.g., British Columbia) (Warrick 2017:89). Due to this, they have little to no control over lands and resources. Every year, in response to development pressures, around 200 archaeological sites are excavated within a CRM context, and 1000 more are discovered and registered as known archaeological sites. Of the registered archaeological sites in Ontario, over 80 percent are Indigenous (Warrick 2017:100). Owing to these activities, and the regulatory framework surrounding licencing as noted above, Ontario archaeology is suffering from a curation crisis and has been for several decades. In Ontario, several thousand collections are held by individual licencees and are at risk of being lost and destroyed (see Karrow 2017).

Many of these collections form part of Ontario's Indigenous cultural heritage, and their loss would create gaps in the archaeological record. Perhaps more importantly, however, improperly stored or lost collections will negatively impact communities who have a spiritual/cultural connection to the materials and who will lose that aspect of their cultural patrimony.

As described in section 1.2 above, the Ontario Heritage Act specifies who is responsible for the stewardship and conservation of artifacts recovered from archaeological sites. However, it is the provinces and territories within Canada that control and manage the archaeological record, on behalf of all Canadians, as a public trust (Pokotylo and Mason 2010:57). This includes Indigenous archaeological materials, and ultimately the archaeological heritage of Indigenous peoples. What is not included, in any legislative document concerning archaeological heritage, is any mention of Indigenous rights or involvement in relation to their own archaeological heritage (Warrick 2017:92). This is a public issue within Ontario's archaeological discourse. There are 133 First Nations communities in Ontario, though only 126 are recognized federally (Chiefs of Ontario 2019), and many of these communities, especially in southwestern Ontario have shared territories and land claims (Williamson and MacDonald 2015:105). CRM projects almost always stem from plans for development – pipelines, housing subdivisions, road and bridge infrastructure, and aggregate pits, for example, and with land development intersecting many different Indigenous territories, bands, and Nations, CRM cannot be separated from the discussion of Indigenous rights, treaties, and titles (Connaughton, Leon, and Herbert 2014:544). The fact that Indigenous communities are unable to care for their own archaeological heritage is a public issue that should be addressed in CRM archaeology. This is necessary if Ontario wants to be part of a larger, worldwide discourse on Indigenous rights and decolonization.

1.4 Current CRM Engagement with Indigenous Communities

As noted in section 1.4, Indigenous communities are not involved in the full range of CRM archaeology. CRM practices within Ontario, however, are increasingly incorporating Indigenous voices but with an emphasis on participation in fieldwork and less so in stewardship over artifacts. According to the Standards and Guidelines, only a Stage 4 assessment requires consultation with Indigenous communities. For every other stage, the Standards and Guidelines states that Indigenous communities should be involved, but there is no duty to consult (Warrick 2017:92). Currently, engagement with First Nations communities often takes the form of participation by Indigenous monitors who work alongside archaeologists during excavations. Indigenous communities are also consulted when they may have claims to land, or if their ancestors were known to occupy that territory. It is worth pointing out that Indigenous monitoring is not legally mandated, but has become incorporated into Ontario CRM archaeology (Warrick 2017:92). Importantly, the Standards and Guidelines also do not address Indigenous involvement in the curation of archaeological materials, as previously mentioned in section 1.3. One exception to this involves sites or collections with Indigenous human remains. The Funeral, Burial, and Cremation Services Act (2002) is the piece of legislation that dictates how human remains are to be treated. When it comes to Indigenous burials, they are either avoided or, where threatened, excavated and reinterred elsewhere at the discretion of the Indigenous community overseeing the project (Warrick 2017:92). This is the only piece of legislation that gives Indigenous communities stewardship over their ancestral remains.

In response to the lack of Indigenous involvement in CRM archaeology and the now ongoing dialogue on decolonization, Indigenous communities in Ontario have begun to develop their own standards and guidelines, which they expect archaeologists to comply with when

conducting work on their traditional lands. Saugeen Ojibway Nation was the first to release their own standards in 2011, followed by Curve Lake First Nation in 2016, and more recently the Mississaugas of the Credit First Nation (MCFN) who in April of 2018 released their “Standards and Guidelines for Archaeology”. In the MCFN Standards and Guidelines, under subsection 4.1 entitled ‘Collections management’, it is stated that MCFN is to be designated the steward of any archaeological collections resulting from development, and may assume stewardship over collections in cases where materials are not being cared for properly, or when MCFN is in a position to develop their own artifact storage facility (MCFN 2018:41). It is unknown if MCFN has acquired a facility to store archaeological materials, and further studies will be needed in order to understand how the MCFN and other Indigenous standards and guidelines are being incorporated into CRM field excavations.

1.5 The Way Forward

Increasingly, organizations from around the world are recognizing Indigenous peoples’ rights and the impact of colonialism. Most notably, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), released in 2008, is one example of a movement to put stewardship, specifically that of archaeological heritage, back in Indigenous hands (Warrick 2017:90). Within Canada, the Truth and Reconciliation Commission of Canada released Calls to Action in 2015. These aim to “redress the legacy of residential schools and advance the process of Canadian reconciliation...” (Truth and Reconciliation:1). Within this document, there are calls for the Canadian government to adopt UNDRIP and for it to be used as a framework for reconciliation (Truth and Reconciliation 2015:4). These documents, put forth by the United Nations and Canada, are seen as a positive step forward for Indigenous rights, but only if they are observed.

In Ontario, stewardship of artifacts remains under the jurisdiction of archaeological licensees as mandated by the government, despite the growing global movement to address this issue. However, without the terms and conditions put forth by the government, what would happen to the artifacts? Might people dispose of artifacts due to financial restrictions and lack of proper housing space? The disposal of artifacts would ultimately harm Ontario's archaeological heritage and the archaeological record, more so in fact than the current curation crisis. Without these protocols, the destruction of artifacts could be a possibility.

One may think that a simple solution would be to renounce control over Indigenous archaeological sites and allow Indigenous people to dictate what happens to the land and extant archaeological materials. However, if this were to happen, land development would likely be impacted which in turn would affect the economy including CRM archaeology (Warrick 2017:90). While allowing Indigenous communities to assert control over their cultural patrimony would be in accordance with UNDRIP, it seems very unlikely that the government of Canada would relinquish control over land in the coming years.

Indigenous archaeology, where Indigenous communities have control over all archaeological work conducted, has been developing over the past 20 years. Sonya Atalay has written numerous books and chapters on the subject (e.g., Atalay 2006, 2010) and notes that it must be conducted with the full collaboration of descendant communities. While the Standards and Guidelines do not legally mandate such an inclusive move, Ontario's CRM archaeologists have incorporated Indigenous involvement into the practice, facilitating relationships with Indigenous communities (Warrick 2017:93). A purely Indigenous archaeology, though, is also

not the answer. Indigenous archaeology must be included within mainstream archaeology to divest the discipline of its colonial roots, instead of separating the two. To separate Indigenous archaeology from its settler counterpart would be to replicate the dominant archaeological paradigm and move from one set of prejudices to another (Atalay 2006:283). Ferris (2003) echoes this sentiment: “moving ownership from archaeologists to Native Americans would convert archaeology from one set of biases to another (Ferris 2003:174). Archaeology can be considered Indigenous if it is done with, by, and for the Indigenous communities being affected by the work (Atalay 2006:292). While CRM is slowly incorporating this approach within its purview, more should be done regarding the curation and stewardship of Indigenous archaeological materials and sites, especially in relation to legislation and legal documents.

Regarding artifacts and other archaeological materials, an increase in Indigenous oversight is not an absurd proposition. There are many challenges that come with the conservation of artifacts, but despite these there is one thing that many people agree on: archaeologists need help caring for collections (Karrow 2017:22). Financial support is needed if collections are to be cared for properly, and funding for Indigenous communities to help manage collections should be given priority. If artifacts are transferred to Indigenous communities, then they will have control over how such collections are curated and accessed. A focus on prioritizing funding from governmental bodies to provide Indigenous communities with ways to curate and manage archaeological materials should be at the forefront of Indigenous archaeological discourse. Not only would that conform to UNDRIP articles, and Calls to Action, but it would be part of a larger decolonial framework that would benefit everyone involved in archaeology and the Indigenous communities themselves. There are challenges with obtaining financial support, mainly in that there are not enough resources to save all of the archaeological

collections in Ontario (Karrow 2017:24). One solution offered by Warrick (2017) would be to implement a tax on developers in the private sector. While Warrick states that the revenue could then be used to preserve Indigenous archaeological sites and cultural heritage landscapes, it could be argued that in times where avoidance and preservation are not possible, that money could be used to create spaces to safely store archaeological materials.

Chapter 2 of this thesis deals with pottery from an archaeological site in Essex County, Ontario, excavated by Fisher Archaeological Consulting. During excavations, archaeologists encountered a ceremonial canine burial. Bekejwanong (Walpole Island) First Nation was the Indigenous community working with the company on this project, and work was halted while elders from the community travelled to the site and conducted a private ceremony (FAC 2017:26). The remains were then repatriated to Walpole Island First Nation for reburial. Instances like this, where CRM companies give control to Indigenous communities, where they become the stewards of their archaeological heritage, is what continually needs to happen in the discipline.

It is with this issue in mind that I intend to publish the research undertaken in Chapter 2 in the *Canadian Journal of Archaeology* as one of their many objectives includes creating relationships with Indigenous communities. They also aim to promote an understanding of archaeology among all Canadians. Since Chapter 2 focuses on a CRM project in Ontario, it is fitting that the research will be disseminated to the people who live here and work in CRM as professional archaeologists, and as Indigenous liasons.

Chapter 2: Late Woodland Pottery Production in Essex County, Ontario: Evidence from the Puce Site

2.1 Introduction

In this study, I undertake an analysis of early Late Woodland pottery from the Puce Site (AbHq-3) in Essex County, Ontario, in an effort to better understand potting practices and design trends in the region at this time. Located immediately south of County Road 22 on the banks of the Puce River, this site was examined by Fisher Archaeological Consulting (FAC) over the course of two field seasons. While only a small portion of the site was documented, the recovered artifactual and ecofactual assemblages were sizable. FAC recovered some 155,000 artifacts and documented 448 cultural features spread across a .13 ha site located on both sides of the river. As described below, Puce can be attributed to the Riviere au Vase and early Younger phases of the Western Basin Tradition, and appears oriented to a seasonal, warm weather exploitation of fish and other resources from the area. Here, extended families or bands camped while processing and storing food within a subsistence-settlement pattern organized around mobility. Of the artifacts recovered, over 76,000 were identified as Indigenous ceramics, and it is from these items that I examine pottery vessels in an effort to characterize regimes of production and design at the site. Vessels are analyzed quantitatively by variables of form and decoration. To better understand the patterns that emerge from the analysis, I then compare the results with a similar study undertaken by Watts (1997) on pottery from the nearby Early Late Woodland Silverman site.

2.2 Previous Research on the Western Basin Tradition

The lands surrounding the western basin of Lake Erie, which today comprise parts of southwestern Ontario, southeastern Michigan, and northwestern Ohio, were home to a distinct

archaeological tradition during the Late Woodland period (ca. AD 600-1650) (see Fitting 1965; Murphy and Ferris 1990) known as the Western Basin Tradition. Following early work in the area by Emerson Greenman (e.g., 1958) and Tom Lee (e.g., 1951), among others, James E. Fitting was the first to devise a culture historical framework for this area in his book *Late Woodland Cultures of Southeastern Michigan* (1965). Based predominantly on changes in ceramic design through time, Fitting (1965) proposed that Late Woodland archaeological cultures in the region were distinct from comparable (Iroquoian) groups to the east and designated these as part of the 'Younge Tradition'. The Younge Tradition is now known as Western Basin Tradition, following revisions to Fitting's (1965) framework by David Stothers and his colleagues (e.g., Stothers et al. 1994). Fitting's framework was divided into four chronological phases: Riviere au Vase (ca. AD 600-900), Younge (ca. AD 900-1200), Springwells (ca. AD 1200-1400), and Wolf (ca. AD 1400-1650). Later revisions to the Fitting/Stothers framework for Western Basin Tradition archaeology by Murphy and Ferris (1990) extended the reach of this taxonomic construct to parts of southwestern Ontario, including Essex, Kent, and Lambton counties. Western Basin sites are also documented during in the Early Late Woodland in parts of Middlesex and West Elgin counties. The vast majority of Western Basin sites are found along the drainages of western Lake Erie, Lake St. Clair, and lower Lake Huron (Murphy and Ferris 1990:189). For the purposes of this study, cultural developments during the early Late Woodland Riviere au Vase and Younge phases are of particular interest.

The people living in southwestern Ontario during the earlier phases of the Late Woodland were communities of mobile hunter-gatherers who moved seasonally to take advantage of various resource rich environments (Murphy and Ferris 1990:233). Marsh environments along the south shore of Lake St. Clair, where the Puce site is found, and at Point Pelee in southern

Essex County, were particularly attractive to such groups owing to the variety and abundance of resources during the warmer seasons. Foodways in these areas would have involved the exploitation of fish, birds, and land mammals, as well as plant foods including wild rice and nuts (see Keenlyside 1978:26-42). This way of life continued through much of the succeeding Younger Phase, but the appearance of larger and longer-lived encampments supported by horticultural economies is evident by the Springwells Phase, though hunting, gathering, and fishing were still prevalent (Murphy and Ferris 1990:254).

According to Fitting (1965), two ceramic wares known as ‘Wayne’ and ‘Riviere’ are associated with the Western Basin Tradition. **Table 1** (below) provides some of the defining characteristics for these groups.

Table 1. Western Basin Ceramic Wares Traditions Defined by Fitting (1965). From Watts 1997:3-4.

Wayne Ware	Riviere Ware
<ul style="list-style-type: none"> • small and globular-shaped pottery with pronounced shoulders • slightly elongated bodies and semi-conoidal or rounded bases • vessels are entirely cord-roughened from base to lip • exterior cord malleation is either vertical or slightly oblique • lips can be either cord roughened or decorated with transverse or oblique dentate suture or cord-wrapped stamp designs • Interiors are largely smoothed or wiped and rarely evidence decoration 	<ul style="list-style-type: none"> • contain one horizontal band of oblique impressions on the interior • often contain two bands of decoration on the exterior rim surfaces • Exterior rim and neck surfaces are usually decorated below the horizontal bands of obliques in a variety of motifs • motifs can include one or more rows of triangles (filled or alternatively open and filled), plaits, and horizontals. • decorative motifs are executed in a number of impressed and incised techniques

Within each ware, Fitting (1965) created different types such as Wayne Cordmarked and Wayne Smoothed. He also noted that Riviere Ware had two variants with four types including Vase

Dentate, Vase Tool Impressed, Vase Corded, and Macomb Linear (Watts 1997:7). Following revisions to Fitting's (1965) ceramic typology by Stothers et al. (1994) and Murphy and Ferris (1990), the salience of many of these types has been questioned. Similar specimens are, however, generally found throughout the Western Basin and can be ascribed to each of the Tradition's first three phases. Fitting (1965) believed that Wayne Ware evolved into Riviere Ware and that the transition occurred towards the end of the Riviere au Vase Phase (Watts 1997:8). The transition from Riviere au Vase to Younge is not, however, easily seen within ceramic assemblages. Murphy and Ferris (1990) would go so far as to say that there is not a single ceramic marker that can separate one phase from the other. This is particularly problematic in southwestern Ontario where no single component Riviere au Vase sites have yet been documented.

Notable Western Basin sites ascribed to the Riviere au Vase and Younge phases are shown in **Figure 1**. The sites known as the Silverman, Dick, Robson Road, Cherry Lane, Bruner-Colasanti, and 11H8, 11H10, and 11H2 on Point Pelee, all roughly date to the same time period as Puce. Of note here is the Silverman site, which is found only a short distance away from Puce. For his Master's thesis, Watts (1997) performed an attribute analysis on the Silverman and Point Pelee sites to better understand the chronological sequence of Riviere au Vase Phase pottery designs in southwestern Ontario. Within Essex County, a number of recent archaeological investigations involving the Western Basin Tradition have taken the form of cultural resource management (CRM) excavations. This is the case with both the Puce and Silverman sites.

2.3 Archaeology of the Puce Site (AbHq-3)

In 2012, Fisher Archaeological Consulting was contracted by the County of Essex to conduct an archaeological assessment of County Road 22 along the western banks of the Puce

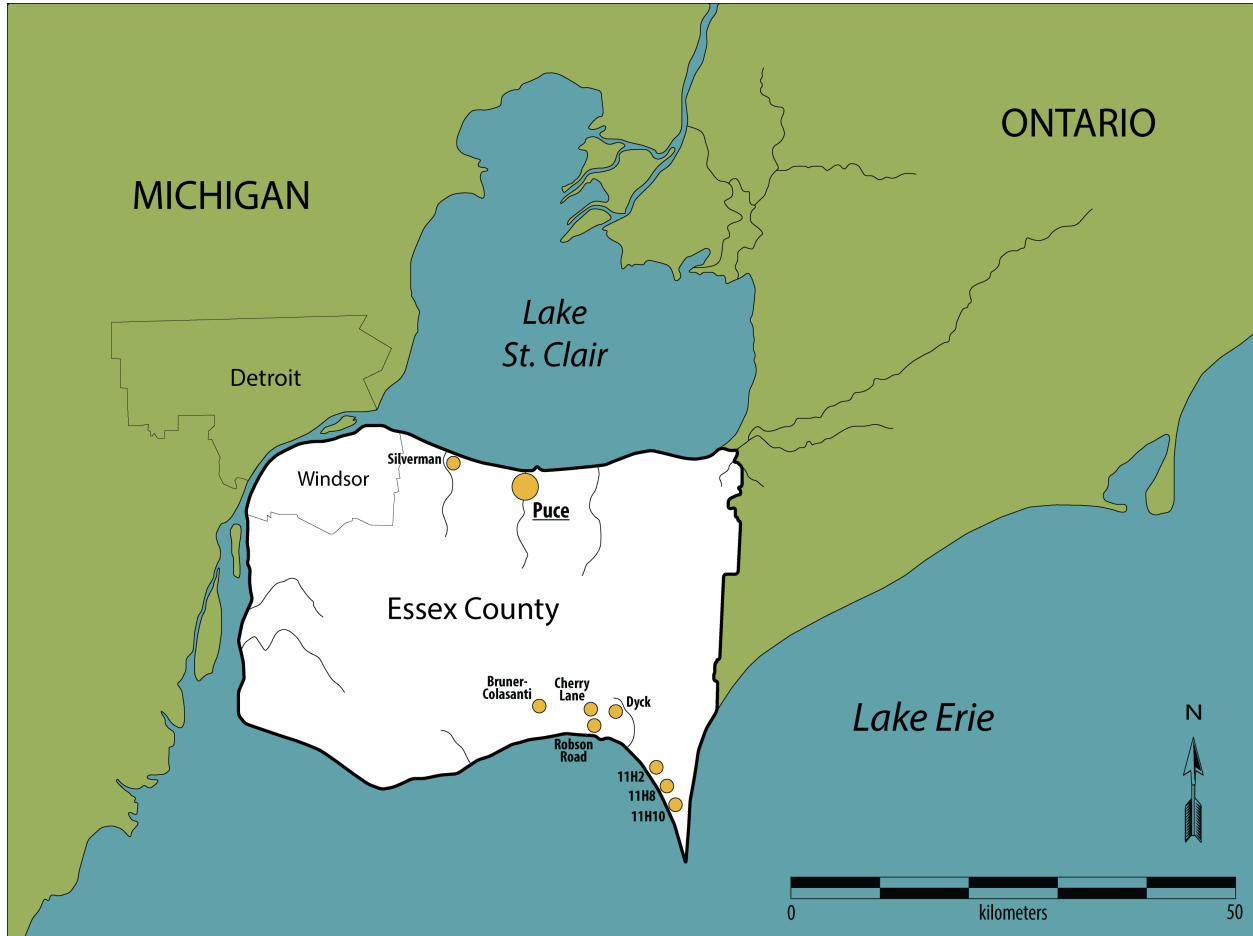


Figure 1. Western Basin Sites in Essex County, Southwestern Ontario. Illustration by C. Watts

River (FAC 2017:i) prior to a proposed road and bridge widening. A Stage 2 Archaeological Assessment was conducted and significant findings on the south side of Country Road 22, west of the Puce river, were documented by FAC. Recovered materials included ceramics and stone tools associated with past Indigenous groups, as well as Euro-Canadian materials, which suggested the presence of a substantial site. Stage 3 test excavations were conducted in the spring of 2012 while Stage 4 mitigative excavations were carried out between July, 2012 and December, 2013.

During the Stage 3 excavations, it was revealed that materials associated with this site were located on both the southwest and southeast banks of the river (see **Figure 2**) and



Figure 2. Aerial view of the Puce Site. Courtesy of FAC

originated during the Late Woodland period. The presence of a 19th century tavern was also located during these excavations. Some areas of the site, most notably along its northern edge, had been disturbed by activities associated with the earlier construction of County Road 22, the bridge, and the installation of utilities. However, the overall integrity of the site, especially along the southwestern bank of the river, was considered good to excellent. While the southeastern side of the site had been subjected to plowing, soils on the southwestern side remained intact.

Approximately 1,300 square metres were excavated by FAC along the southwestern and southeastern banks of the river. Throughout the Stage 4 excavations, 448 cultural features were

documented and over 155,000 artifacts were recovered (FAC 2017:i). Of the features identified, 377 were found to be associated with past Indigenous occupations at the site. Analysis of the artifacts from these features resulted in the identification of 20,884 lithic remains and 76,060 ceramics. The remaining materials were faunal remains and artifacts associated with the 19th century use of the property. No human remains were found at the site, but a canine burial was discovered with Feature 492.

On the southeastern banks of the site, there were a total of 53 Indigenous features recorded. These included 22 Indigenous pits, 28 posts, and three unidentified features of Indigenous or Euro-Canadian origin. On the southwestern banks of the site, where occupations appear to have been concentrated, a total of 324 Indigenous features were recorded. These consisted of 177 Indigenous pits, 108 posts, 13 activity areas, six hearths, six considered 'other', and 14 possibly Indigenous or Euro-Canadian in origin. Among the identified Indigenous pits were storage pits, middens, smudge pits, and refuse pits (FAC 2017: 10.2-4). While the main habitation appears to have favoured the southwestern bank, one must keep in mind that the southeastern part of the site had been ploughed and impacted by modern construction. It may also be that denser occupations on this side of the site lay outside the excavation limits (FAC 2017:10.6). Regardless, of the 22 features recorded here, 11 can be assigned to the Western Basin Tradition (FAC 2017:10.6). Large storage pits comprised six of these features, while two additional storage pits also appear to have served as refuse pits. The function(s) of the remaining three features could not be determined (FAC 2017:10.7).

Of the features on the southwestern bank, the majority were found at the eastern end of the site, closest to the river (FAC 2017:10.7). Given that this area is comprised of sandy soils

situated along a ridge, it makes sense that this part of the site would have been most densely occupied, especially as to the west there is a slope down to a marshy area with an active spring (FAC 2017:10.7). According to the report, there were 13 to 15 activity areas here, as seen in

Figure 3.

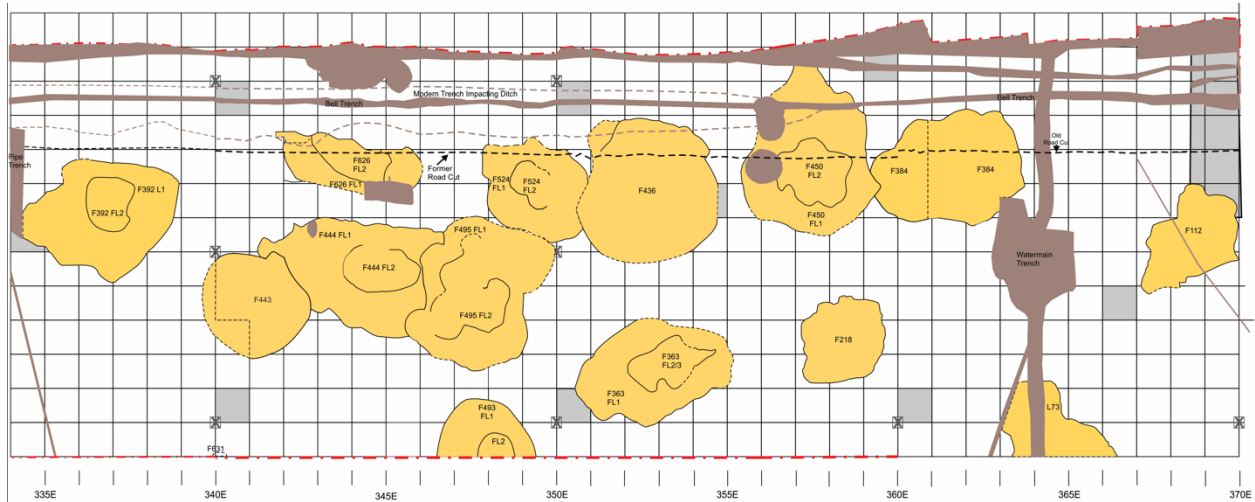


Figure 3. Plan view of Puce site showing activity areas (in yellow) and excavation limits (in red). Courtesy of FAC

Some of these activity areas were initially thought to be house structures but a lack of postmolds worked against this interpretation (FAC 2017:10.8). Within many of these activity areas were overlapping storage pits, refuse pits, and hearths. For example, Feature 450 contained six pit features but also articulated with eight features in its immediate vicinity (FAC 2017:10.18-19). Based on the archaeological material recovered from this feature, it appears to have been an activity area where food processing and storage took place (FAC 2017:10.18-19). The purposes of other activity areas are unknown, for their artifact densities were too low to determine how they were used. Of the features on the southwestern bank, 23 pits and one post are associated with the Western Basin Tradition based on diagnostic artifacts (FAC 2017:10.34). Because of the high volume of diagnostic ceramics associated with the Riviere au Vase and Younge phases, FAC (2017) concluded that other features containing ceramics could also be

recognized as Western Basin in nature. In total, 129 features associated with the Western Basin Tradition were found here, suggesting this area would have been intensively inhabited on a seasonal basis (FAC 2017:10.34).

The Puce site was comprised of many different stratigraphic levels or 'lots'. Owing to its largely undisturbed nature, the southwestern bank had a total of 82 lots, while the southeastern bank had 32 with the majority of these arising from modern construction. Master Lot (ML) 12 was the lot associated with the main habitations of the site (FAC 2017:3.30).

Preliminary analyses of the ceramic materials carried out by FAC as part of their technical report placed the site in the Riviere au Vase (AD 600-900) and Younge phases (ca AD 900-1200) of the Western Basin Tradition. Charcoal samples recovered from Features 111 and 492 were submitted by FAC for radiocarbon dating and produced two identical dates of 1200 ± 30 years BP (Beta-406901, wood charcoal, $\delta C13 = -24.7\text{‰}$; Beta-406902, wood charcoal, $\delta C13 -24.7\text{‰}$). When calibrated using INTCAL13 data, these dates contain two intercepts at the 2σ probability: cal AD 720-740 and cal AD 765-895 (see **Figure 4** below).

These assays suggest the site dates to the Early Late Woodland period. Based on the above evidence, along with the analysis of other diagnostic artifacts and features recovered at Puce, FAC reports that the site would have been occupied by multiple communities (families or bands) during the Late Archaic / Early Woodland ca. 2,500 to 400 B.C., the Early Late Woodland, as well as during the 19th century. Much of the occupation occurred during the Early Late Woodland.

2.4 Methodology

As specified in the Introduction, this study aims to provide a quantitative, attribute-based analysis of the ceramic assemblage recovered from the Puce site. This study employs a Pottery Rim Section Analysis Code created by David Smith and modified by Watts (e.g., 2008). Watts (1997) employed a similar code for his analysis of five ceramic assemblages from southwestern Ontario (Point Pelee sites: 11H2, 11H8a(1), 11H8a(2), 11H8b, and Silverman AbHr-5) which

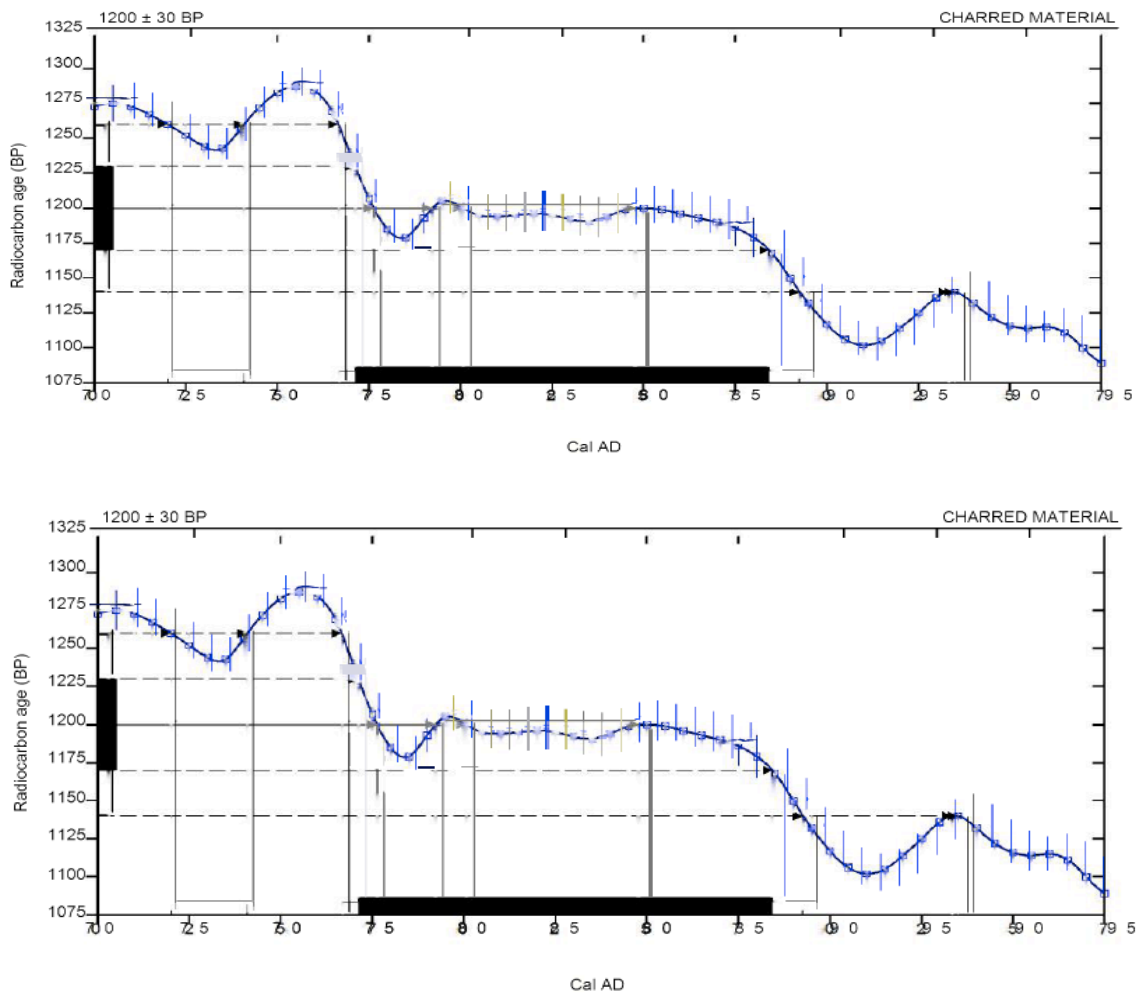


Figure 4. Radiocarbon Calibrations for Puce. Courtesy of FAC

greatly aids in comparing the Puce materials to other sites in the region. Indeed, this study will compare the Puce collection to materials recovered from Silverman in an effort to understand the relationship between these two sites.

While entire vessels are occasionally recovered archaeologically, more often than not a ceramic assemblage is made up of broken sherds and this is the case with pottery from Puce. This does not, however, typically impede an analysis; as decorative components are placed on the rims and necks of Woodland period wares, these are considered the most stylistically sensitive areas of the vessel. While rim sections are most often fragmentary, they are easily identifiable, and so long as a sample can be considered representative of the broader ‘population’ of ceramic vessels at a site, the pieces can be used to conduct an analysis.

Archaeologists have developed different methods of analysis for studying ceramics. FAC conducted an analysis known as the ‘type-variety approach’ and this classification system “involves creating classes for ‘membership’ of a particular set of attributes, arrived at subjectively, which are then grouped and defined according to mutual exclusivity” (Watts 1997:28). This method is popular with archaeologists, especially in understanding the chronologies of Iroquoian ceramic production, and has been used to analyze pottery ascribed to the Western Basin Tradition following Fitting’s (1965) monograph (Watts 1997:29). One of the main problems with the type-variety approach, however, is the discrepancy between archaeologists’ conceptions of ‘types’ and modifications over time to defining attributes. Moreover, in the Western Basin Tradition particularly, a great deal of variety can be seen in the combinations of decorative attributes (see Watts 2008). For these reasons, there are advantages in conducting an attribute-based approach rather than following the type-variety method. These advantages include:

1. “its greater conciseness and stronger control over factors of time and space (as opposed to the typological approach)” (Watts 1997:30)
2. “its tendency to maintain the integrity of individual attributes without obscuring or losing them within a rigid typological paradigm.” (Watts 1997:30)
3. “it provides a sturdy database for use in making comparisons, i.e. attributes are not subject to periodic revision as can occur with types; and” (Watts 1997:30)
4. “its capacity to trace the changes in individual attributes through time (see 2. Above) should the data be substantial enough to do so.” (Watts 1997:30)

As mentioned earlier, this study employs an attribute-based approach to recording aspects of rim form and decoration on the ceramic rim fragments from Puce. Using the Pottery Rim Section Analysis Code as a reference, the rim sherds were analyzed according to the following variables: Nature of Specimen, Castellated form, Upper Rim Profile, Rim Form, Lip Thickness, Collar Height, Surface Modification, Decorative Completeness, Tool, Technique, and Motif. With regard to Tool, Technique and Motif, these variables are associated with rim decoration. “Rim decoration is recorded in a series of ‘bands’- linear applications of attributes around the circumference of the vessel rim (Watts 1997:31)”. For each band on the interior, exterior, and lip the variables of tool, technique, and motif are recorded.

Before the recording of attributes could take place, it was first necessary to determine how many ceramic vessels would be utilized. Of the Indigenous ceramics identified by FAC, a total of 1,139 rim or rim fragments were noted. When FAC performed the initial analysis on these sherds, a total of 49 vessels were identified. To be included in this study, a vessel needed to be represented by a rim/or multiple rim sherds. The rim sherds chosen had to have intact interior,

exterior, and lip surfaces and be at least 28 mm in diameter (roughly the size of a toonie). Following these conditions, 46 vessels identified by FAC were initially selected for further analysis along with an additional eight vessels not examined by FAC for a total of 54 vessels. Upon closer inspection, Vessels 9, 33, and 39 were removed from the study for not containing intact interior, exterior, and/or lip surfaces.

With the sample in place, the next step of the analysis involved a ‘vessel sort’. This is done to ensure that each rim sherd represents a unique pottery vessel and there are no duplicates that could skew the results of the analysis. As the entire sample is fragmentary, when we refer to vessels in this way, we are referring to representative examples of individual vessels. During the vessel sort it was determined that there were six vessels that had inferred mends, decreasing the number of vessels analyzed in this study to 51. An inferred mend occurs when rims appear to be part of the same vessel but cannot be physically fit together. Generally speaking, it was applied conservatively in this study and only after aspects of form and decoration were considered identical. The vessels with inferred mends were Vessels 1, 6, 27, 29, 43, and 47. Vessels 6, 27, and 47 were removed from further analysis. Once the vessel sort was completed, a quantitative analysis of the rim sherds was conducted and recorded in an Excel spreadsheet. These data appear in **Appendix 1**. The results of the analysis will be discussed in the following section.

2.5 Results of the Attribute Analysis

2.5.1 Aspects of Form

When looking at Early Late Woodland vessels from southwestern Ontario, there are certain aspects of form that are consistent throughout the various assemblages. Murphy and Ferris (1990:195-209) note that during the early phases of the Western Basin Tradition, one

would expect to see vessels with flat lips though rounded lips are not uncommon. Lip Form data from the Puce analysis is in line with this suggestion; 67 percent (n=34) of the vessels analyzed herein contain flat lips while the remainder (n=17) were found to be rounded. Murphy and Ferris (1990) also discuss rim form and state that during this time period, vessels are generally uncollared and uncastellated, though 'incipient' collars start to appear in the Younge Phase. The majority of vessels at Puce were uncollared, making up just over 92 percent (n=47) of the sample, while the remainder display incipient collars (3.9%; n=2) or true collars (3.9%; n=2). Unfortunately, due to the fragmentary nature of the collection, when recording the presence or absence of castellations on the vessel rims, just over 92 percent (n=47) of the sample was found to be Indeterminate. Castellations on the remainder of the specimens were recorded as Not Present (3.9%; n=2) and Present (3.9%; n=2). When it comes to the classification of the Upper Rim Profile of vessels, concave profiles were highest in frequency at 58.8 percent (n=30) while 29.4 percent (n=15) were straight, and 11.7 percent (n=6) were indeterminate.

In terms of Surface Modification, smoothing is evident on most interior surfaces of vessels throughout this time period, but it is also evident on the lip and exterior surfaces, especially by the transitional period from Riviere au Vase to Younge (AD 800 to 900) (Murphy and Ferris 1990:196). Therefore, it is no surprise that when quantifying the results for Surface Modification, the Puce ceramics showed that 86.3 percent (n=44) of the interior surfaces of the vessels were smooth. The remainder of interior surfaces were either indeterminate (7.8%; n=4), textured (3.9%; n=2), or wiped (2.0%; n=1). The same preference for smoothing was evident on the Lip surfaces, with 92.2 percent (n=47) being labelled as smooth, and only 5.9 percent (n=3) as textured. There was one instance where surface modification on the lip could not be determined. The exterior surfaces showed a higher percentage of textured surface modification

with 33.3 percent (n=17) of sherds being recorded as such, but the majority were smooth (66.7%; n=34).

2.5.2 Aspects of Decoration

2.5.2.1 Vessel Exterior

For Exterior Band 1, when quantifying the variable 'Tool', there was a high frequency of Cord Wrapped Instrument (CWI) use comprising 64.7 percent (n=33) of all rim sherds. Plain was the second highest in frequency with 13.7 percent (n=7), while Linear (Straight) tool use made up 11.7 percent (n=6). Single examples of Linear (Curved), Dentate (Polygonal), Pointed (Annular), and Pointed (Round) tool use were also noted. The variable 'Technique' showed that Parallel Stamping was the dominant method of application at 62.7 percent (n=32). Plain was the next highest frequency recorded 13.7 percent (n=7). Oblique Stamping comprised of 11.7 percent (n=6) while single examples of Bossing, Drag-Stamping, and Perpendicular Stamping comprised 1.9 percent of the sample. For the variable 'Motif', Linear Right Obliques were the most common design element at 52.9 percent (n=27). An absence of decoration (Plain) on this band was the second highest frequency recorded at 13.7 percent (n=7). Linear Vertical elements were found on 11.7 percent of vessels (n=6). Applications of Linear Horizontal designs made up 7.8 percent (n=4) while Linear Left Oblique decoration was found on 3.9 percent of specimens (n=2). Bossed Horizontal and Punctate Horizontal decoration were each recorded once for 1.9 percent of the total.

For Exterior Band 2, tool use was again dominated by CWI impressions at 53.3 percent (n=16). Plain was the second highest in frequency at 20 percent (n=6). Linear (Straight) tool impressions made up 16.6 percent (n=5) while Pointed (Round) instrument use comprised 10

percent (n=3) of the sample. With regard to technique, Parallel Stamping was the most dominant application at 30 percent (n=9) while Plain and Oblique Stamping both had the second highest recorded frequency at 20 percent (n=6). Three vessels or 10 percent of the sample were incised, and Punctate (Perpendicular) applications made up 6.6 percent (n=2). Drag-Stamping and Push-Pull designs were each observed only once (3.3 percent). Motifs recorded on this band included Linear Horizontal at 36.6 percent (n=11), Linear Right Oblique at 20 percent (n=6) and an absence of decoration (Plain) at 20 percent (n=6).

There were only six instances of vessels having Exterior Band 3 decoration. CWI use comprised 66.6 percent of decoration here (n=4) with the remainder of the sample being Plain (33.3 percent, n=2). Techniques used on Exterior Band 3 consisted of Parallel Stamping at 66.6 percent (n=4) with an absence of decoration (Plain) comprising the rest (33.3 percent, n=2). For Exterior Band 3 Motif, single examples of Chevron Horizontal, Linear Horizontal, Linear Left Oblique, Linear Right Oblique, and Plaits Linear Horizontal were all observed (66.4% of the sample) while 33.3 percent (n=2) of vessels were Plain.

2.5.2.2 Vessel Interior

Looking at Interior Band 1, the majority of tool use consists of CWI decoration at 52.9 percent (n=27). The next highest frequency is Plain at 29.4 percent (n=15). Tool use could not be determined on three vessels (5.8 %) while the same number of vessels displayed Linear (Straight) designs. Two vessels (3.9%) contained Linear (Curved) tool use while one (1.9%) contained Pointed (Annular) elements. For Interior Band 1 Technique, the dominant application was Parallel Stamping at 62.7 percent (n=32) with the second most common application being an absence of decoration (Plain) at 29.4 percent (n=15). Technique could not be determined on three

vessels (5.8%) while one vessel displayed Perpendicular Stamping. With regard to Motif on Interior Band 1, there were three common designs: Linear Right Oblique at 29.4 percent (n=15), Plain at 29.4 percent (n=15) and Linear Vertical elements at 23.5 percent (n=12). Linear Left Oblique designs comprised of 7.8 percent of the sample (n=4), while 5.8% (n=3) were Indeterminate. Linear Horizontal and Punctate Horizontal designs were both observed only once (2 x 1.9% of the sample).

For Interior Band 2, the most common design is an absence of decoration (Plain) at 58 percent (n=18), followed by Pointed (Round) tool use at 22.5 percent (n=7) and CWI use at 9.6 percent (n=3). Pointed (Elliptical) tools were used on 6.4 percent (n=2) of the sample while Pointed (Polygonal) were used on 3.2 percent (n=1). Concerning Technique, Plain was again found on 58 percent (n=18) of the sample, while Perpendicular Stamping was seen on 22.5 percent (n=7). Parallel Stamping made up 9.6 percent (n=3), Bossing was found on 6.4 percent (n=2), and Oblique Stamping was observed on 3.2 percent (n=1) of specimens. With regard to Motif, 58 percent (n=18) of the sample was Plain, followed by Punctate Horizontal at 22.5 percent (n=7). Bossed Horizontal decoration comprised of 9.6 percent (n=3) of the sample, while Linear Left Oblique was found on two specimens (6.4%) and Linear Vertical elements on one sherd (3.2%).

There were eight instances of vessels displaying an Interior Band 3. In all cases, this band was found to be Plain.

2.5.2.3 Vessel Lip

Murphy and Ferris (1990:195-202) note that in both the Riviere au Vase and Younge phases, lip surfaces are often decorated and the data from Puce confirms this statement. Lip surfaces with decoration comprise 65.3 percent of the vessel assemblage examined here. The Silverman assemblage also corroborates this assertion, as only 24 percent of the assemblage examined by Watts (1997) had plain lips.

With regard to the Puce assemblage, for Lip Band 1, Tool use was primarily given over to CWI impressions at 47 percent (n=24) while roughly a third of the sample (33.3%, n=17) was Plain. Four instances (7.8%) of Linear (Straight) tool use were observed, while 3.9 percent (n=2) of applications were made with Dentate (Polygonal) tools. Single instances of Linear (Curved), Linear (Wavy), and Pointed (Round) tool use were also noted on this band (3 x 1.9 percent). For Lip Band 1 Technique, Parallel Stamping was the most common application at 62.7 percent (n=32), followed by Plain at 33.3 percent (n=17). Oblique Stamping (n=1) and Perpendicular Stamping (n=1) each made up 1.9 percent of the sample. For Lip Band 1 Motif, the three highest frequencies were Plain at 33.3 percent (n=17), Linear Right Oblique at 27.4 percent (n=14) and, lastly, Linear Vertical at 19.6 percent (n=10). Lesser frequencies of Linear Left Oblique elements (13.7%, n=7), Linear Horizontal (3.9%, n=2) and Punctate Horizontal (1.9%, n=1) were also recorded.

Only one vessel displayed a second band of decoration on the Lip. It was comprised of CWI impressions made by Parallel Stamping in a Linear Right Oblique manner.

2.6 Comparison with the Silverman Site (AbHr-5)

“A Quantitative Analysis and Chronological Seriation of Riviere au Vase Phase Ceramics from Southwestern Ontario” was an MSc thesis by Watts (1997) which examined ceramic assemblages from five Riviere au Vase sites ascribed to the Western Basin Tradition. Of the five sites, one in particular – Silverman – is of interest to this study due to its close proximity to Puce. The Silverman site (AbHr-5) was excavated by Mayer Heritage Consultants Inc. (MHCI) between 1994 and 1995 prior to the development of a subdivision. The site dates to ca. AD 700-1200 (MHCI 1996) and, like the Puce site, is situated between an inlet and the beach of Lake St. Clair in a marsh environment (MHCI 1996:1). During excavations of the site, roughly 9,800 ceramic vessel sherds were recovered; from these, MHCI reconstructed 9 vessels (Watts 1997:24). When Watts (1997) did his analysis, he identified another 137 rim specimens for a total sample of 146 vessels.

In FAC’s (2017) report, the Puce Site (AbHq-3) was compared to nearby sites in order to understand the broader context of early Late Woodland occupations in the area. In this report, one of its authors, James Molnar, stated that the ceramic assemblage at the Silverman site was similar to Puce but he was unable to make specific comparisons for two reasons. Firstly, according to Molnar, ceramic typologies for the Western Basin Tradition in southwestern Ontario have not been adequately developed. The second reason given was that in his analysis of the Silverman site, Watts (1997) had used an attribute approach, as had Keenlyside (1978) at Point Pelee, while FAC employed a type-variety approach. Due to budgetary and time constraints, FAC was unable to replicate this analytical approach (FAC 2017). As discussed in the Methodology section above, the reason for pursuing an attribute analysis instead of the type-variety approach is that it is more objective and consistent (Watts 1997:30). Since this study

employs an attribute analysis, I was able to compare the Puce collections to those examined by Watts (1997) from Silverman. The results of this comparison are presented in **Appendix 1** and briefly described below.

What this comparison shows is that potters at Puce and Silverman followed similar design practices in terms of decoration. For tool use on the exterior, interior, and lip surfaces, both Silverman and Puce show high frequencies of either plain or CWI. Decorative techniques are dominated at both sites by either plain specimens or stamping. As well, motifs are dominated by either an absence of decoration (plain) or Linear Obliques (Left, Right, Vertical, and Horizontal). And yet, while these collections show high degrees of similarity, they also show minor differences. In terms of Technique, there appear to be more instances of furrowing (incising) and dentate use at Silverman. This variability could possibly be explained by different sample sizes – 51 vessels were examined from Puce, while Watts (1997) looked at 146 from Silverman – but it may be, or may also be, that potting preferences simply varied slightly between the two sites.

2.7 Discussion

The results of this analysis strongly suggest that the potters at Puce had clear design preferences with regard to aspects of pottery form and decoration. For example, the potters preferred smooth interior, lip, and exterior surfaces on vessel rims/necks. They designed their forms with flat lips and uncollared/concave upper rim segments. With regard to decoration, they were partial to cord wrapped instruments, designs favouring parallel-stamping, and linear elements (e.g., left, right, horizontal, vertical) arranged in bands. Decoration was evident on all three surfaces from the majority of rim sherds analyzed. The potters at Silverman also tended to

choose cord or cord wrapped instruments as tools, stamping techniques when applying decoration, and linear motifs on all three surfaces. Similarities in pottery form and decoration between Silverman and Puce, as noted in **Appendix 1**, suggest the people who inhabited these sites adhered to the same design sensibilities. When coupled with similarities in settlement patterns between the two sites, as outlined below, we may deduce that they were part of the same archaeological culture (i.e., Riviere au Vase). Based on this evidence, it could be that the two sites were occupied by different communities (families or bands) contemporaneously or sequentially by one group of people. A distance of some 7 km separates the two sites.

While the radiocarbon dates from Puce suggest a late Riviere au Vase phase affiliation, several vessels in the collection contain elements of form and decoration indicative of later Younger Phase pottery. Unlike earlier Riviere au Vase wares, this pottery is known to have incipient collars and elaborately decorated necks (see Murphy and Ferris 1990:203). Given what has been previously discussed with the results of the Puce analysis, some of the vessels ascribe to these sets of designs. Notably, Vessels 8, 18, 30, and 37 all display evidence of richly decorated necks, as seen in the images below. Vessels 3 and 20 display incipient collars, as well as decorated necks. As well, the neck decoration on these six vessels varies in terms of tool, technique, and motif. Vessel 8 (see **Figure 5**, below) has decoration on all three surfaces but, looking specifically at the exterior, there are two rows of Linear Right Oblique stamps that would have carried on past the break in the sherd. This is evidenced by other pieces of the vessel in the collection. The potter(s) who made this vessel employed a cord wrapped instrument for applying the decoration. The potter(s) also went to some length to smooth the area under the lip to then apply a cord wrapped instrument in the stamping fashion mentioned above, to make this

particular band stand out. As well, in terms of form, Vessel 8 contains one of the two instances of castellations seen within the assemblage at Puce.

The potter who made Vessel 37 (see **Figure 5**, below) used a cord in their design of Horizontal

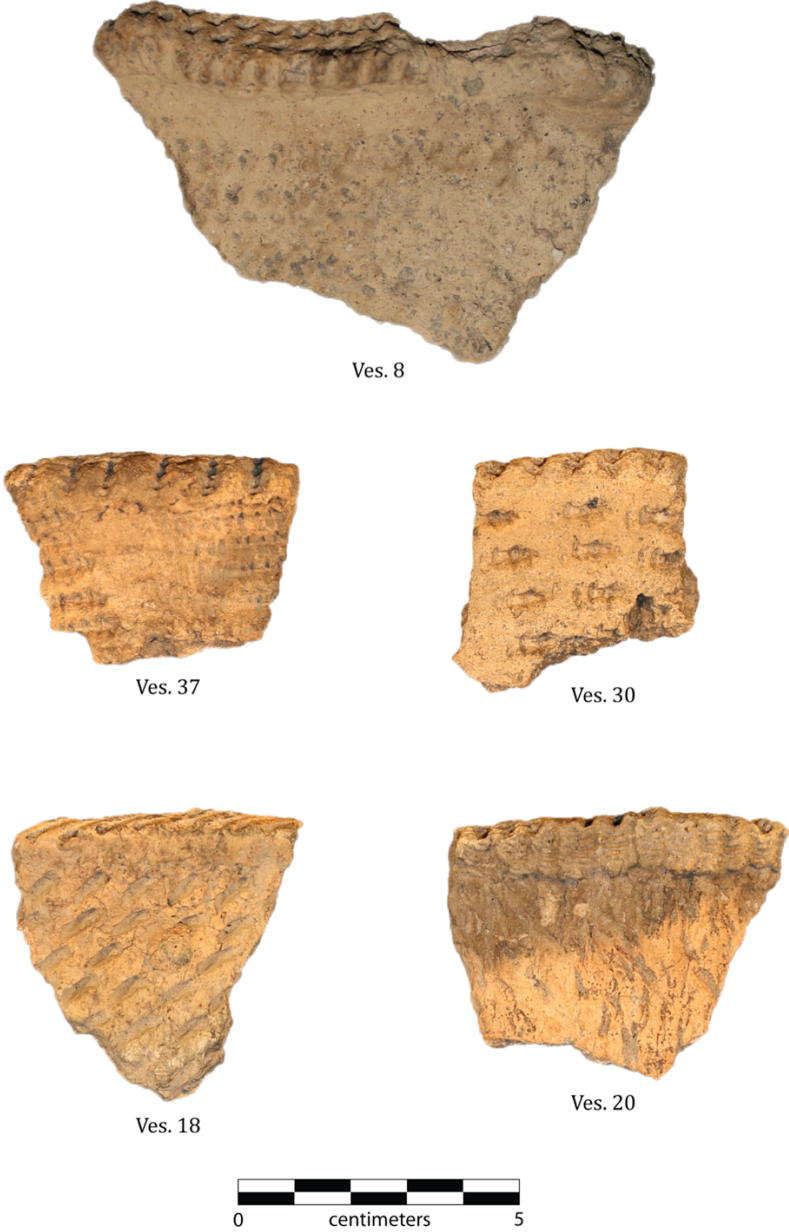


Figure 5. Vessel 8, 37, 30, 18, and 20 from the Puce site.

Stamping elements. This design is quite different from Vessel 30 (see **Figure 5**, below). whose maker used a cord wrapped instrument to stamp horizontally. Vessel 18's maker (see **Figure 5**, below) used a Linear (Straight) tool to stamp Right Obliques along the neck and they also applied punctates. One of the vessels with an incipient collar (Vessel 20) (see **Figure 5**, below) has designs along the neck under the lip of stamped linear obliques that were applied with a cord wrapped instrument. This can be considered elaborate compared to plain exteriors. Vessel 3, meanwhile, (see **Figure 6**, below) is a relatively intact small vessel. The neck is visible and shows that the entire surface is



Ves. 3



Figure 6. Vessel 3 from the Puce site

covered in Linear Right Stamps which were applied with a cord wrapped instrument. There are particular miniature vessels that are common during the Younge phase that are different from what are considered 'juvenile' vessels (Murphy and Ferris 1990). Murphy and Ferris (1990) suggest that these smaller vessels would have had a practical use, perhaps intended for a single serving of food. Murphy and Ferris (1990) provide a photo example of one of these miniature vessels from the Dymock site (see **Figure 7**, below). Vessel 3 from the Puce collection could be considered one of these vessels by way of comparison. Vessel 3, as well as the others noted here, suggest the Puce site contains wares more indicative of the Younge rather than Riviere au Vase phase.

Cord Wrapped Instrument (CWI) use is commonly found during the Early Late Woodland period across much of the lower Great Lakes (see Watts 1997) and, not surprisingly, it is well represented at Puce. As seen in **Appendix 1**, CWI use on the exterior is roughly comparable between Puce and Silverman at 59.6 percent and 47.9 percent respectively though higher frequencies of CWI decoration are found on Band 2 of the Exterior at Puce. CWI use is also comparable between Puce and Silverman when it comes to Band 1 of the Interior at 52.9 percent and 60.9 percent respectively but deviates where Lip Decoration is concerned with 48 and 68 percent respectively.

With regard to collars, Puce shows low frequencies of vessels with this attribute; 92.1 percent of the sample was recorded as collarless, which is indicative of a Riviere au Vase phase affiliation. Direct comparisons between Puce and Silverman with regard to the use of collars could not be made because this data is not available in Watts (1997) but other Early Late

Woodland sites suggest a similar pattern. For example, Lennox (1982) notes that 75.9 percent of the pottery recovered from the Bruner-Colasanti site near Leamington was collarless while Reid



Figure 7. *Younge Phase Miniature Vessels from the Dymock Site (Murphy and Ferris 1990:209). Vessel on the left is comparable to Vessel 3 at Puce.*

(1982) found only six of roughly 215 vessels at the nearby Robson Road site contained crude collars. Surface Modification, meanwhile, was another variable that could not be compared between the Puce and the Silverman collection. However, looking again to other sites in the region, one can deduce the preference potters had for smoothing. Reid (1982) states that most sherds found at the Robson Road site had lips, upper rims, and necks that were smoothed. This is consistent with the present analysis where 92.2 percent of the lip surfaces, 86.3 percent of interiors, and 66.7 percent of exterior surfaces were recorded as Smooth.

2.7.1 Lifeways at Puce

Much like the pottery assemblages associated with the Riviere au Vase and Younge phases, subsistence practices and settlement patterns evolved only incrementally over the course of the Early Late Woodland (see Murphy and Ferris 1990:231-244). Sites ascribed to both phases

are found along river drainages such as the Thames and Sydenham, but Riviere au Vase sites are also located along the resource rich sand points of Point Pelee and Rondeau Bay to the exclusion of later sites. In this case, the Puce site, like the nearby Silverman site, is nestled along a drainage associated with the southern shore of Lake St. Clair, where comparatively rich resources would also have been found in the region's numerous marshes. Indeed, this suggestion is borne out by the variety and quantity of faunal remains (over 50,000 elements) recovered from Puce (see FAC 2017:Section III). Lake sturgeon, freshwater drum, catfish, sunfish, minnow, and whitefish are just some of the fish species recovered from the site, with freshwater drum occurring in abundance, while deer and turtle remains were also found in large quantities. Owing to the great quantity of freshwater drum, a fish which spawns in the early summer (May-June), it has been suggested that Puce was occupied primarily in the early summer to take advantage of this resource (FAC 2017:Section III). This stands in stark contrast to many previously documented Riviere au Vase phase sites in Ontario which appear oriented toward fall hunting and nut processing (see Murphy and Ferris 1990:231-233). Having said this, a partial floral analysis from Puce (see FAC 2017:Section III) does note that a variety of nut remains, including hickory, butternut, and walnut, were recovered from limited areas of the site indicating that some activities took place in the fall. Moreover, the presence of sizable quantities of deer also suggest occupation of the site later in the year. Notably, cultigens were absent.

Settlement patterns during Riviere au Vase and Younge phase times are often dominated by the presence of pit features, notably storage pits, and this is certainly true of Puce. As previously mentioned, 177 Indigenous pits were discovered during the excavations, many of them overlapping, and designated by the report authors as storage / refuse pits. Their use as storage pits was suggested by their depth, along with the presence of straight edges, flat bottoms,

and homogeneous soil fills (FAC 2017), all of which would have worked to preserve food for later consumption, perhaps during winter months when resources were scarcer (Murphy and Ferris 1990:238). That most of these features did not contain many artifacts suggests they were primarily used as storage rather than refuse pits (FAC 2017:10.2). Notably, excavations at Silverman also resulted in the discovery of feature clusters consisting of circular storage pits, and like Puce, these storage pits had very low artifact densities and a homogeneous soil fills (MHCI 1996:12). Similar patterns have been documented at other Western Basin sites in Essex County, including Cherry Lane, Robson Road, and Bruner-Colasanti.

While house forms are rarely seen at these sites, an assortment of small dwellings was documented at Silverman (see MHCI 1996) while one house was recognized at Cherry Lane (see Murphy and Ferris 1990:236). While dwellings were not found at Puce, it bears mentioning that only a small strip of land was excavated here (roughly 13 m wide on the western side of the site) while large areas of both Silverman and Cherry Lane were exposed. As well, an isolated line of post moulds was discovered during excavations on the western side of Puce and FAC (2017) states in their report that this could have been a house wall with the remainder lying outside the study area. Were the limits of excavation expanded outward at Puce, particularly to the south, it may be that dwellings would be encountered. Yet when compared with other Western Basin sites from the same time period, the lack of homes is not unusual. The absence of dwelling forms at Puce and other sites may be a function of settlement duration, of campsites with temporary structures in other words which did not leave any archaeological evidence behind.

As described above, while occupations at Puce are found on both sides of the river, the densest areas of activity are found on the southwestern bank along with the majority of vessels.

Also recovered from the site were 105 'Wasters' (.01% of the entire pottery assemblage) and 21 'Juveniles'. Wasters are lumps of fired clay that were discarded during the pottery production process. Their presence at Puce, along with the juvenile vessels, strongly suggests that pottery production occurred on site. This is consistent with other sites in the area, notably Silverman, where wasters accounted for 0.1 percent (n=17) of the pottery assemblage while juvenile vessels made up 0.1 percent (n=18) of the sample (MHCI 1996). As well, Lennox (1982) states that the ceramic assemblage recovered from Bruner-Colasanti was most likely produced on site using clay from a local source, while Suko (2017) came to a similar conclusion with regard to pottery production at the more distant Location 3 site near Arkona.

All together, these lines of evidence suggest that lifeways at Puce were organized around a seasonal occupation of the site, likely from early summer through fall, and focused on a variety of economic tasks including the exploitation of fish and other resources. It remains to be seen if Puce was one of numerous sites along the south shore of Lake St. Clair that were occupied contemporaneously by bands or extended families, or part of a settlement system that favoured sequential occupation of these sites by the same group(s). Given the similarities between Puce and Silverman, the former interpretation seems most compelling. Whatever the case, the pottery assemblage analyzed here suggests that production took place on site and employed designs common to the early Late Woodland Western Basin Tradition.

2.8 Conclusions

Available archaeological evidence from both the Puce and Silverman sites suggests that Western Basin peoples who lived along the southern shores of Lake St. Clair during the early Late Woodland Period would have followed an economic pattern based on the seasonal

exploitation of various plant and animal foods. With ample resources, including fish, deer, and nuts available during the warmer months, communities were able to thrive. These communities were also producing pottery, and the excavations carried out by Fisher Archaeological Consulting at Puce provide an important window into early Late Woodland Western Basin Tradition pottery production.

By analyzing the ceramic assemblage, which consists of 51 vessels, it can be inferred that the pottery makers at Puce followed a design repertoire common to the Riviere au Vase and Younge phases. Results show numerous consistencies among the vessels in terms of form, with high frequencies of vessels containing smoothed surfaces, flat lips, uncollared rims, and concave profiles. The quantification of decorative attributes showed similar homogenization, with potters using cord wrapped instruments to apply primarily discontinuous linear motifs by way of parallel stamping techniques. These decorative traits were seen on all three surfaces of the examined vessels. These inferences, coupled with the radiocarbon dates, indicate that Puce would have been occupied throughout the early Late Woodland Period and groups would have been making pottery on site.

When compared with other sites of the same time period, specifically the nearby Silverman site, a preference in these specific tools, techniques, and motifs was noted. Like Puce, the pottery makers at Silverman were partial to cord wrapped instruments, stamping techniques, and linear motifs on all three surfaces of the vessel. This comparison indicates that it is quite possible that both Puce and Silverman were occupied contemporaneously by bands or extended families, or as part of a settlement system that favoured sequential occupation of these sites by the same group(s).

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3.0 Appendix 1: Tabular Data

Table A1: Comparison between Puce and Silverman – Decorative Attributes

	Silverman	Puce
Exterior Decoration B1 Tool		
Plain	43.8% (n=64)	13.4% (n=7)
CWI	47.9% (n=70)	59.6% (n=31)
Linear (Straight)	0	11.5% (n=6)
Pointed Instrument (Round)	7.5% (n=11)	3.8% (n=2)
Dentate	0.7% (n=1)	1.96% (n=1)
Exterior Decoration B1 Technique		
Plain	43.8% (n=64)	13.4% (n=7)
Stamping	41.8% (n=61)	74.9% (n=39)
Notched	11.0% (n=16)	0
Furrow (Incised)	3.4% (n=5)	0
Exterior Decoration B1 Motif		
Plain	43.4% (n=64)	13.72% (n=7)
Linear Horizontal	0.7% (n=1)	7.84% (n=4)
Linear Left Oblique	6.2% (n=9)	3.92% (n=2)
Linear Right Oblique	30% (n=44)	52.94% (n=27)
Linear Vertical	10.3% (n=15)	11.76% (n=6)
SI Bossed Horizontal Over Linear Right Oblique	0	1.96% (n=1)
SI Punctate Horizontal Over Linear Horizontal	0.7% (n=1)	1.96% (n=1)
SI Punctate Horizontal Over Linear Right Oblique	0.7% (n=1)	1.96% (n=1)
Exterior Decoration Band B2 Tool		
Plain	59.6% (n=68)	20.00% (n=6)
CWI	28.9% (n=33)	53.33 (n=16)
Linear (Straight)	0	16.66% (n=6)
Pointed (Round)	8.8% (n=10)	10% (n=3)
Dentate	1.8% (n=2)	0
Exterior Decoration Band 2 Technique		
Plain	59.6% (n=68)	20% (n=6)
Stamping	28.9% (n=33)	60% (n=18)
Punctate (Perpendicular)	0	6.66% (n=2)
Incised	7.0% (n=8)	10.00% (n= 3)
Push-Pull	4.4% (n=5)	3.33% (n=1)
Drag-Stamp	0	3.33% (n=1)
Exterior Decoration Band 2 Motif		
Plain	59.6% (n=68)	20.00% (n=6)
Linear Horizontal	7.9% (n=9)	36.66% (n=11)
Linear Left Oblique	6.1% (n=7)	6.66% (n=2)

Linear Right Oblique	8.8% (n=10)	20.00% (n=6)
Punctate Horizontal	1.8% (n=2)	6.66% (n=2)
Linear Vertical	0	3.33% (n=1)
Exterior Decoration Band 3 Tool		
CWI	38.1% (n=8)	66.66% (n=4)
Plain	38.1% (n=8)	33.33% (n=2)
Pointed (Round)	19% (n=4)	0
Exterior Decoration Band 3 Technique		
Stamping	42.9% (n=9)	66.66% (n=4)
Plain	38.1% (n=8)	33.33% (n=2)
Exterior Decoration Band 3 Motif		
Chevron Horizontal	0	16.66% (n=1)
Linear Horizontal	9.5% (n=2)	16.66% (n=1)
Linear Right Oblique	28.6% (n=6)	16.66% (n=1)
Plain	38.1% (n=8)	33.33% (n=2)
Plaits Linear Horizontal	0	16.66% (n=1)
Linear Left Oblique	19% (n=4)	0
Interior Decoration Band 1 Tool		
CWI	60.9% (n=86)	52.94% (n=27)
Indeterminate	0	5.88% (n=3)
Linear (Curved)	0	3.92% (n=2)
Linear (Straight)	0	5.88% (n=3)
Plain	31.9% (n=45)	29.41% (n=15)
Pointed (Annular)	5.0% (n=7)	1.96% (n=1)
Dentate (Notched)	2.2% (n=3)	0
Interior Decoration Band 1 Technique		
Indeterminate	0	5.88% (n=3)
Plain	31.9% (n=45)	29.41% (n=15)
Stamping	60.3% (n=85)	64.7% (n=33)
Notched	6.4% (n=9)	0
Furrow (Incised)	1.4% (n=2)	0
Interior Decoration Band 1 Motif		
Indeterminate	0	5.88% (n=3)
Linear Horizontal	0.7% (n=1)	1.96% (n=1)
Linear Left Oblique	9.9% (n=14)	7.4% (n=4)
Linear Right Oblique	36.9% (n=52)	29.41% (n=15)
Linear Vertical	36.9% (n=52)	23.52% (n=12)
Plain	31.9% (n=45)	29.41% (n=15)
Punctate Horizontal	0.7% (n=1)	1.96% (n=1)
Interior Decoration Band 2 Tool		
CWI	4.5% (n=5)	9.67% (n=3)

Plain	90% (n=99)	58.06% (n=18)
Pointed (Elliptical)	0	6.45% (n=2)
Pointed (Polygonal)	0.9% (n=1)	1.96% (n=1)
Pointed (Round)	3.6% (n=4)	22.58% (n=7)
Dentate (Notched)	0.9% (n=1)	0
Interior Decoration Band 2 Technique		
Plain	90% (n=99)	58.06% (n=18)
Stamping	8.1% (n=9)	35.48% (n=11)
Bossed	0	6.45% (n=2)
Furrow (Incised)	1.8% (n=2)	0
Interior Decoration Band 2 Motif		
Bossed Horizontal		9.67% (n=3)
Linear Left Oblique	1.8% (n=2)	6.45% (n=2)
Linear Vertical	0.9% (n=1)	1.96% (n=1)
Plain	90% (n=99)	58.06% (n=18)
Punctate Horizontal	1.8% (n=2)	22.58% (n=7)
Linear Right Oblique	1.8% (n=2)	0
Linear Horizontal	1.8% (n=2)	0
Lip Decoration Band 1 Tool		
CWI	68% (n=100)	47.05% (n=25)
Plain	23.8% (n=35)	33.33% (n=17)
Dentate (Polygonal)	2.0% (n=3)	3.92% (n=2)
Linear (Curved)	0	1.96% (n=1)
Linear (Straight)	0	7.84% (n=4)
Linear (Wavy)	0	1.96% (n=1)
Pointed (Round)	6.1% (n=9)	1.96% (n=1)
Lip Decoration Band 1 Technique		
Plain	23.8% (n=35)	33.33% (n=17)
Stamping	61.9% (n=91)	66.66% (n=34)
Notched	8.8% (n=13)	0
Furrow (Incised)	4.1% (n=6)	0
Rolled	0.6% (n=1)	0
Lip Decoration Band 1 Motif		
Plain	23.8% (n=35)	33.33% (n=17)
Linear Horizontal	4.1% (n=6)	3.92% (n=2)
Linear Left Oblique	19.7% (n=29)	13.72% (n=7)
Linear Right Oblique	34% (n=50)	27.45% (n=14)
Linear Vertical	6.8% (n=10)	19.60% (n=10)
Punctate Horizontal	2.0% (n=3)	1.96% (n=1)

Table A2: Lip Surface Modification

Lip Surface Modification		
Indeterminate	1	1.96%
Smooth	47	92.15%
Textured	3	5.88%
Total	51	100%

Table A3: Interior Surface Modification

Interior Surface Modification		
Indeterminate	4	7.84%
Smooth	44	86.27%
Textured	2	3.92%
Wiped	1	1.96%
Total	51	100%

Table A4: Exterior Surface Modification

Exterior Surface Modification		
Smooth	34	66.66%
Textured	17	33.33%
Total	51	100%

Table A5: Exterior Band 1 Tool

Exterior Band 1 Tool		
Cord	1	1.96%
CWI	30	58.82%
Dentate (Polygonal)	1	1.96%
Linear (Curved)	1	1.96%
Linear (Straight)	6	11.76%
Plain	7	13.72%
Pointed (Annular)	1	1.96%
Pointed (Round)	1	1.96%
SI Pointed (Round) Over CWI	1	1.96%
SI Pointed (Elliptical) Over CWI	1	1.96%
SI Pointed (Elliptical) Over Linear (Straight)	1	1.96%

Total	51	100%
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Table A6: Exterior Band 1 Technique

Exterior Band 1 Technique		
Bossed	1	1.96%
Drag-Stamp	1	1.96%
Plain	7	13.72%
SI Stamped (Perpendicular) Over Stamp (Parallel)	2	3.92%
Stamp (Oblique)	6	11.76%
Stamp (Parallel)	32	62.74%
Stamp (Perpendicular)	1	1.96%
SI Bossed Over Stamp (Parallel)	1	1.96%
Total	51	100%

Table A7: Exterior Band 1 Motif

Exterior Band 1 Motif		
Bossed Horizontal	1	1.96%
Linear Horizontal	4	7.84%
Linear Left Oblique	2	3.92%
Linear Right Oblique	27	52.94%
Linear Vertical	6	11.76%
Plain	7	13.72%
Punctate Horizontal	1	1.96%
SI Bossed Horizontal Over Linear Right Oblique	1	1.96%
SI Punctate Horizontal Over Linear Horizontal	1	1.96%
SI Punctate Horizontal Over Linear Right Oblique	1	1.96%
Total	51	100%

Table A8: Exterior Band 2 Tool

Labels	Exterior Band 2 Tool	
Cord	1	3.33%
CWI	13	43.33%
HD CWI Pointed (Round)	1	3.33%
Linear (Straight)	5	16.66%

Plain	6	20.00%
Pointed (Round)	3	10.00%
SI Pointed (Round) CWI	1	3.33%
Total	30	100%

Table A9: Exterior Band 2 Technique

Exterior Band 2 Technique		
Drag-Stamp	1	3.33%
HD Stamp (Parallel) Stamped (Perpendicular)	1	3.33%
Incised	3	10.00%
Plain	6	20.00%
Punctate (Perpendicular)	2	6.66%
Push-Pull	1	3.33%
SI Bossed Stamp Parallel	1	3.33%
Stamp (Oblique)	6	20.00%
Stamp (Parallel)	9	30.00%
Total	30	100%

Table A10: Exterior Band 2 Motif

Exterior Band 2 Motif		
HD Plaits Linear Horizontal Punctate Horizontal	1	3.33%
Linear Horizontal	11	36.66%
Linear Left Oblique	2	6.66%
Linear Right Oblique	6	20.00%
Linear Vertical	1	3.33%
Plain	6	20.00%
Punctate Horizontal	2	6.66%
SI Bossed Horizontal Linear Right Oblique	1	3.33%
Total	30	100%

Table A11: Exterior Band 3 Tool

Exterior Band 3 Tool		
CWI	4	66.66%
Plain	2	33.33%
Total	6	100%

Table A12: Exterior Band 3 Technique

Exterior Band 3 Technique		
Plain	2	33.33%
Stamp (Parallel)	4	66.66%
Total	6	100%

Table A13: Exterior Band 3 Motif

Exterior Band 3 Motif		
Chevron Horizontal	1	16.66%
Linear Horizontal	1	16.66%
Linear Right Oblique	1	16.66%
Plain	2	33.33%
Plaits Linear Horizontal	1	16.66%
Total	6	100%

Table A14: Interior Band 1 Tool

Interior Band 1 Tool		
CWI	27	52.94%
Indeterminate	3	5.88%
Linear (Curved)	2	3.92%
Linear (Straight)	3	5.88%
Plain	15	29.41%
Pointed (Annular)	1	1.96%
Total	51	100%

Table A15: Interior Band 1 Technique

Interior Band 1 Technique		
Indeterminate	3	5.88%
Plain	15	29.41%
Stamp (Parallel)	32	62.74%

Stamp (Perpendicular)	1	1.96%
Total	51	100%

Table A16: Interior Band 1 Motif

Interior Band 1 Motif		
Indeterminate	3	5.88%
Linear Horizontal	1	1.96%
Linear Left Oblique	4	7.84%
Linear Right Oblique	15	29.41%
Linear Vertical	12	23.52%
Plain	15	29.41%
Punctate Horizontal	1	1.96%
Total	51	100%

Table A17: Interior Band 2 Tool

Interior Band 2 Tool		
CWI	3	9.67%
Plain	18	58.06%
Pointed (Elliptical)	2	6.45%
Pointed (Polygonal)	1	1.96%
Pointed (Round)	7	22.58%
Total	31	100%

Table A18: Interior Band 2 Technique

Interior Band 2 Technique		
Bossed	2	6.45%
Plain	18	58.06%
Stamp (Oblique)	1	3.22%
Stamp (Parallel)	3	5.88%
Stamp (Perpendicular)	7	22.5%
Total	31	100%

Table A19: Interior Band 2 Motif

Interior Band 2 Motif		
Bossed		9.67%
Horizontal	3	
Linear Left		6.45%
Oblique	2	
Linear Vertical	1	1.96%
Plain	18	58.06%
Punctate		22.58%
Horizontal	7	
Total	31	100%

Table A20: Interior Band 3 Tool

Interior Band 3 Tool		
Plain	8	100%
Total	8	100%

Table A21: Interior Band 3 Technique

Interior Band 3 Technique		
Plain	8	100%
Total	8	100%

Table A22: Interior Band 3 Motif

Interior Band 3 Motif		
Plain	8	100%
Total	8	100%

Table A23: Lip Band 1 Tool

Lip Band 1 Tool		
Cord	1	1.96%
CWI	24	47.05%

Dentate (Polygonal)	2	3.92%
Linear (Curved)	1	1.96%
Linear (Straight)	4	7.84%
Linear (Wavy)	1	1.96%
Plain	17	33.33%
Pointed (Round)	1	1.96%
Grand Total	51	100%

Table A24: Lip Band 1 Technique

Lip Band 1 Technique		
Plain	17	33.33%
Stamp (Oblique)	1	1.96%
Stamp (Parallel)	32	62.74%
Stamp (Perpendicular)	1	1.96%
Grand Total	51	100%

Table A25: Lip Band 1 Motif

Lip Band 1 Motif		
Linear Horizontal	2	3.92%
Linear Left Oblique		13.72%
Linear Right Oblique	7	27.45%
Linear Vertical	14	19.60%
Plain	10	33.33%
Punctate Horizontal	17	1.96%
Total	51	100%

Table A26: Lip Band 2 Tool

Lip Band 2 Tool		
CWI	1	100%
Grand Total	1	100%

Table A27: Lip Band 2 Technique

Lip Band 2 Technique		
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Stamp (Parallel)	1	100%
Total	1	100%

Table A28: Lip Band 2 Motif

Lip Band 2 Motif		
Linear Right		100%
Oblique	1	
Total	1	100%

Table A29: Upper Rim Profile

Upper Rim Profile		
Concave	30	58.82%
Indeterminate	6	11.76%
Straight	15	29.41%
Total	51	100%

Table A30: Rim Form

Rim Form		
Collared	2	3.92%
Incipient		3.92%
Collar	2	
Not Collared	47	92.15%
Grand Total	51	100%

Table A31: Castellation Form

Castellation Form		
Indeterminate	47	92.15%
Not Present	2	3.92%
Present	2	3.92%
Total	51	100%

Table A32: Lip Form

Lip Form		
Flat	34	66.66%
Rounded	17	33.33%

Total	51	100%
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Table A33: Interior Decorative Completeness

Interior Decorative Completeness		
B1>B2>B3>Break	8	15.68%
B1>B2>Break	22	43.13%
B1>Break	17	33.33%
B1>PB2>Break	2	3.92%
Indeterminate	2	3.92%
Total	51	100%

Table A34: Lip Decorative Completeness

Lip Decorative Completeness		
B1>B2>Break	1	1.96%
B1>Break	50	98.03%
Total	51	100%

Table A35: Exterior Decorative Completeness

Exterior Decorative Completeness		
B1>B2>B3>Break	3	5.88%
B1>B2>Break	20	39.21%
B1>B2>PB2>Break	1	1.96%
B1>B2>PB3>Break	2	3.92%
B1>Break	20	39.21%
B1>PB2>Break	4	7.84%
PB1>Break	1	1.96%
Total	51	100%

Table A36: Nature of the Specimen

Exterior Decorative Completeness		
UR+Lip+Int	6	11.76%
UR+Neck+Lip+Int	45	88.23%
Total	51	100%