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Revisiting the Blue Earth Oneota Taxon

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By

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This thesis has been examined and approved by the following members of the student's committee.

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Archeological research should in the end be a discussion about people, not just objects. I am thankful that I had friends around me during this project who enjoyed these discussions of the prehistoric past, of the people who lived there, and of the complicated legacy of the artifacts they left behind.

CLEAN WATER LAND & LEGACY AMENDMENT

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Abstract

Clark Dobbs' 1984 dissertation on Blue Earth Oneota settlement patterns is often the go-to treatment for the Blue Earth taxon. Since the publication of his work, new methods of archeological research have been employed within the field and new data have been uncovered from both Blue Earth sites in Minnesota and Oneota sites throughout the Midwest. This thesis attempts to ask if the modern archeology of Blue Earth Oneota is still comprehended by Dobbs' 1984 publication. Feature analysis of material recovered from refuse pit features during the 2012 excavation at the Vosburg site (21FA02) was utilized in this research along with a thorough literature review. Refuse pit feature analysis identified concentrations of different artifacts while also inspecting the rate of cortex, rind, and heat-treatment on lithic artifacts. The high presence of cortex on Grand Meadow Chert and Prairie du Chien Chert implies direct sourcing of these raw materials from outcroppings, while a high frequency of Prairie du Chien chert with heat-treatment indicates a specific process of lithic tool production performed at the Vosburg site. Other research performed after the 2012 excavation highlights the differences between Blue Earth and other nearby Oneota complexes. The field of archeology uses an application of taxonomy similar to that utilized in biology, with different levels of specific taxa structured within a defined hierarchy. It is crucial for archeological taxa to be revisited when new and relevant data are available.

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Chapter 1: Introduction

Blue Earth Oneota is a term used to refer to a series of artifacts and sites used by late prehistoric peoples around 700 years ago in southcentral Minnesota along the Blue Earth River. These sites were first researched in the 1930s, and ever since research of Blue Earth Oneota has only gone forward in fits and starts. When discussed in the literature, Dobbs' 1984 dissertation is the go-to treatment for this archeological complex. While Dobbs' dissertation stands as a thorough interpretation of the relevant data available at the time, it also stands as a specific moment in archeological research, one that is now 39 years in the passing. Since Dobbs' description of Blue Earth Oneota in the mid-1980s, the status of archeological research throughout the Upper Midwest has evolved. New advances in research have been accepted within the field, and vast amounts of new data concerning the Oneota tradition have been uncovered from excavations throughout the Upper Midwest. Artifacts analyzed by Dobbs in his 1984 Blue Earth Oneota research have been reanalyzed with new and more modern methods, and a recent excavation in 2012 of the type-site for Blue Earth Oneota (21FA02) has also offered new data. The aim of this project is to test if Dobbs' 1984 description of Blue Earth Oneota still reflects the archeological reality all these years later.

Similar to biological taxonomy, the field of archeology has developed a way to describe and compare different archeological complexes based off observable attributes. Archeological taxonomy allows researchers to place artifacts and sites within a temporal and spatial context, which better facilitates discussions regarding the people who created these sites and artifacts. Archeologists build taxa off whatever attributes can be discerned through the archeological record. Usually, the style of artifacts recovered is a large factor in the process of describing archeological taxa. Yet every possible qualitative and quantitative description possible should be applied when creating archeological taxa. Site settlement patterns, subsistence patterns, intra-site feature distribution, and raw resource procurement patterns are examples of other attributes that can be used to describe an archeological taxon.

How an archeological taxon is described is also how it can also be possibly tested. Associating archeological taxa with observable attributes allows for other researchers to test for the presence or

absence of these attributes when analyzing data from archeological sites. As the field of archeology and other adjacent sciences advance, new methods for interpreting the archeological record becomes possible, and with these new methods come new ways of describing attributes associated with artifacts or sites.

In accordance with other contemporary research, Dobbs utilized two distinct archeological factors in describing Blue Earth Oneota as a unique taxon: pottery style and settlement patterns (Dobbs 1984; Hall 1962). The highly decorated pottery found at Blue Earth sites allows for in-depth characterizations of the local pottery styles, which in turn allows for the comparison between Blue Earth style pottery and the pottery of other Oneota manifestations such as those found in Red Wing, Minnesota. Dobbs also applied the results of his Blue Earth River Valley survey, which described no Oneota sites existing within the river valley on the east side of the river.

Research Objectives

This project utilized two approaches to reexamine the Blue Earth Oneota taxon. The first approach involved a thorough literature review of any research involving Blue Earth Oneota. The second approach utilized in this thesis was refuse pit feature analysis. Artifacts recovered from two separate refuse pit features (Features 1 and 5) excavated in 2012 from the Vosburg site (21FA02) were analyzed for this research, in the hope of observing depositional patterns within the feature refuse or patterns related to lithic artifacts. Artifacts of Prairie du Chien and Grand Meadow chert were recorded in a catalog that documented the presence of cortex, rind, and heat-treatment to observe any abundance or lack of these features. The simple presence of cortex or rind on lithic artifacts can give researchers a glimpse into raw material procurement patterns, which in turn can give hints toward other social traditions such as trade. The presence of heat-treatment on lithic artifacts can also allow researchers to understand lithic tool production processes, an important factor when examining material adaptations to local environments. The abundance of waste flakes, broken stone tools, and crushed animal bone indicate both Features 1 and 5 are refuse features, where collected waste from activity areas within the site was deposited. The lithic debitage recovered from these refuse features, while not a perfect window into the traditions of lithic tool

production performed at the Vosburg site, still offer informative data on the practices used on lithic procurement and actual on-site tool production.

Dobbs' description of the Blue Earth Oneota taxon, like all research, was limited to the available data and research methods of the time. Thirty-nine years after publication, Dobbs' dissertation is still used as the main reference in modern literature when referring to Blue Earth Oneota. Although the methods used in this research cannot test every statement leveled by Dobbs in his description of Blue Earth, a general reexamination of the taxon is in need after the passing of the last few decades which have involved the accumulation of new data within and without of the Blue Earth Oneota region in southcentral Minnesota.

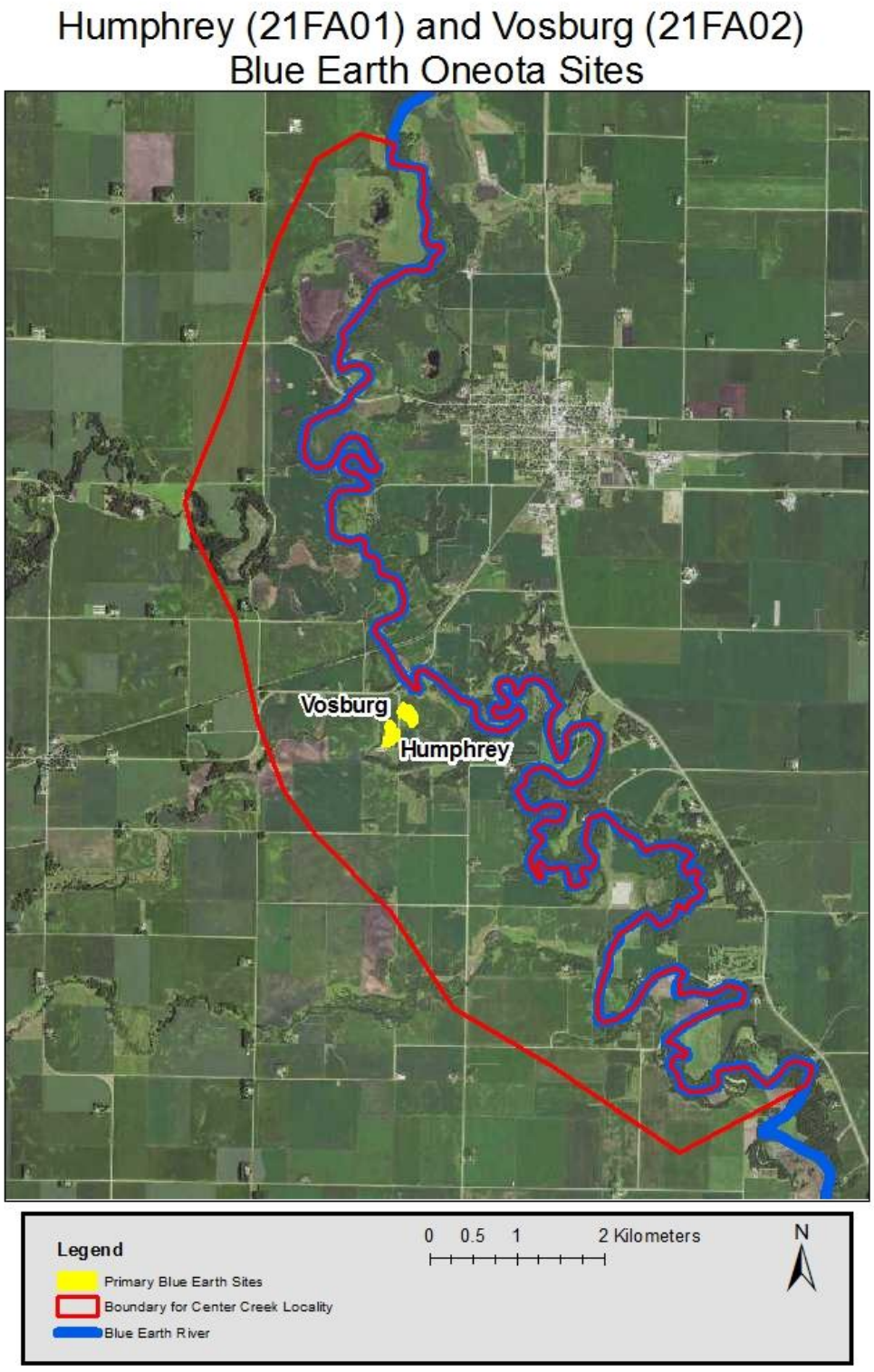
Chapter 2: Background

General History of Oneota Taxon

Ellison Orr was the first to apply the term Oneota in relation to recovered archeological material in 1914 after finding pottery in northeast Iowa that appeared distinct from the other known Woodland and late prehistoric pottery at the time (Alex 2000). Charles Keyes, the state archeologist of Iowa at the time, applied the term to additional archeological material later recovered in northeast Iowa. It has been repeated by past researchers that the Upper Iowa River was known as the Oneota River, deriving its name from the outcrops of Oneota dolomite along its bank. This is only a rumor, and the river was never given the name Oneota.

It did not take long after the discovery of Oneota sites in northeast Iowa for seemingly similar materials to be recognized in southern Minnesota. In 1935, Charles Keyes visited the town of Winnebago "to examine village sites there, and compare them with materials he had excavated in Iowa" (Dobbs 1984:63). Unfortunately, Keyes did not include his impressions within a report. The first true research conducted within the area was done by Lloyd Wilford in the early 1930s, who had worked in the region while recording sites found during a state-wide survey effort (Dobbs 1984). Wilford (1952) recognized materials from his 1939 excavation of the Humphrey site in southcentral Minnesota as Oneota, and applied the taxon to the nearby village of Vosburg in 1949 (Figure 1). At that time, using the Midwestern Taxonomic System suggested by McKern (1939), the Oneota taxon was interpreted to be an aspect of the Upper Mississippi Phase. Examining Oneota material recovered from Blue Earth County, Minnesota, Wilford agreed with Keyes, who "noted that shell-tempered pottery from sites in the Blue Earth River Valley of Minnesota exhibited certain differences in decorative design from the pottery of the Orr focus" (Wilford 1939:10). Wilford later applied the Blue Earth Oneota taxon to materials recovered from multiple late prehistoric sites in Red Wing, Minnesota (Neumann 2017).

Figure 1


Humphrey (21FA01) and Vosburg (21FA02)
Blue Earth Oneota Sites
Vosburg
Humphrey
Legend
Primary Blue Earth Sites
Boundary for Center Creek Locality
Blue Earth River
0 0.5 1 2 Kilometers
N

Work done by Robert Hall (1962) was some of the next significant research to use the term Oneota to address shell-tempered pottery recovered from late prehistoric sites in eastern Wisconsin. Pottery found at the Carcajou Point site was linked to Oneota by Hall in 1950, who formalized the Koshkonong Bold and Carcajou Curvilinear pottery types from his excavations at Carcajou Point (Hall 1962). At the time, Hall described the pottery as showing similarities to what was known as Orr and Lake Winnebago pottery already recovered in Wisconsin (Hall 1962:10). Hall described the pottery found during one of his first days excavating at Carcajou Point in 1957 as being "undeniably Upper Mississippi in form, paste, surface finish, and technique of decoration," but with decorative motifs "obviously inspired by...Middle Mississippi pottery" (Hall 1962:11).

Hall's work in *The Archaeology of Carcajou Point* (1962) went on to have a huge influence on the future understanding and application of the Oneota taxon. By this time, Willey and Phillips (1958) had published an updated taxonomic system which sought to utilize new 14C radiocarbon dating techniques to allow for temporal boundaries within archeological taxa. This system had not been readily accepted by researchers, but stemming from a 1960 conference in which "a tentative agreement on Oneota was reached" (1962:160) Hall and other researchers agreed that Oneota should be understood as a tradition, made of three developmental horizons: the Emergent horizon (A.D. 900 -1000), the Developmental horizon (A.D. 1000-1350), and the Classic horizon (A.D. 1350-1650). A historic horizon (A.D. 1650 – 1775) would later be suggested (Dobbs 1984). Hall suggested "the Oneota tradition would derive its identity from the Oneota aspect, and more particularly from its Classic horizon, but would also include selected components of the Apple River and Silvernale foci, which have never been included within the Oneota aspect" (1962:102).

The discovery of the Correctionville locality in Northwest Iowa expanded the boundaries of Oneota archeology further west. The Correctionville locality, located along the Little Sioux River Valley, eventually revealed multiple village sites, including the Dixon, Gothier, Anthon, and Correctionville sites (Henning 1998). The nearby Bastian locality "is defined on the basis of one site, the Bastian village, located just north of Cherokee at the confluence of Mill Creek with the Little Sioux River" (Henning and

Thiessen 2004:389). Even further north, in the Lake Okoboji-Upper Little Sioux locality, other village sites were discovered, including Gillet Grove, Milford, and Harriman. Henning (1998) described the material recovered from the Lake Okoboji-Upper Little Sioux locality as having similarities with Orr phase materials. The complexity and robustness of the still young Oneota taxon was proved by the discovery of these three geographically distinct Oneota localities in Northwestern Iowa, with two containing multiple village sites with obviously related archeological material. This notion of spatially separated sites related through similar archeological material was further confirmed through the artifacts recovered at the Blood Run village site in the Northwestern Iowa region, a nearby but separate site from the other three Northwestern Iowa localities. Blood Run quickly proved to be one of the largest Oneota sites on record (Henning 1998).

As the area in which archeological material was identified as Oneota expanded, it became clear that similar sites were not limited to the Upper Midwest. Sites along the lower Missouri River in both Kansas and Missouri were excavated to reveal shell tempered, globular pottery (Henning 1998). Other material assigned to the Oneota tradition was found in Missouri at the Upper Osage River Locality and throughout the Chariton River Region. It would not be long until archeological material recognized as Oneota was present throughout eight different states, including Nebraska, Illinois, and Indiana. The research focused at these locations expanded the modern understanding of Oneota lifeways and adaptive strategies across different environments, but very little of this research has had any impact on our understanding of Blue Earth Oneota in southcentral Minnesota.

Development of Oneota Taxon in Minnesota

As previously mentioned, the Blue Earth taxon was first realized through conjoined work on the part of both Orr and Wilford, though Wilford would be the one to develop and create a true understanding of Blue Earth Oneota out of his research throughout the 1940's and 1950's. Wilford's first publication on his work in Blue Earth Oneota was his report on the Humphrey site, where he described the Oneota as belonging to "an agricultural economy with village storage pits and bison scapula hoes, supplemented by

hunting as shown by the presence of broken animal bones, projectile points, and knives and scrapers as skinning tools" (Wilford 1939:10). This description matched both the late prehistoric sites encountered in northeastern Iowa by Ellison Orr and the sites encountered by Wilford in southern Minnesota, despite some differences in pottery design and style.

In his research, Wilford notes the abundance and density of storage pits encountered at the Humphrey site in 1939, something that he would then reencounter at the nearby Vosburg site in 1949. Wilford notes (1945b:38) that grit-tempered Woodland pottery was recovered at Humphrey "in a localized area, at all levels throughout the pits and elsewhere." While, according to Wilford, the stratification suggested contemporary occupation with Oneota groups, it was also thought possible that the Woodland sherds were older and "mixed" with the younger Oneota sherds during the digging of the many closely spaced storage pits. On the other hand, the presence of Oneota pottery was noted at the Cambria site, north of Humphrey, and also at the Great Oasis site in southwestern Minnesota (Wilford 1945a). Pottery recognized as belonging to Cambria was also recovered at the Great Oasis site. While the Cambria site offered no helpful stratification, Wilford explained that the stratification at the Great Oasis site suggested "the great Oasis culture is the oldest of the three" (1945a:38).

Wilford used the evidence of "well developed agriculture, particularly the presence of storage pits" as reasoning to include the Great Oasis culture as part of the Mississippi pattern instead of Woodland (Wilford 1945a:38). He made a similar case for Cambria, arguing that Cambria has a "weightier" argument for being included in the Mississippian pattern, as it displayed traits of each of the three phases: Upper, Middle, and Plains Mississippian. Despite these claims, Wilford at the time was unsure of which of the phases to place either Cambria or Great Oasis.

Without available 14C dating at the time, Wilford believed the Great Oasis sites to be the oldest, citing "the preponderance of stemmed arrowheads and the lack of handles on pottery vessels" (1945:38) combined with the presence of some Woodland adaptations. He also reasoned Oneota was the youngest of the three different cultures, as a direct link between Oneota material and early historic cultures of the Chiwere Siouan peoples had already been conceived. At the time of contact, European explorers noted the

presence of Chiwere Siouan and Dakota tribes, while "the peoples responsible for the Cambria culture were no longer present" (Wilford 1945a:39).

Confident in this sequential timeline and examining "the sequence generally accepted in the states to the south and southeast of Minnesota" (1945a:39-40), Wilford suggested a developmental sequence leading from Great Oasis to Cambria to Oneota. Wilford noted Woodland influences are prominent at Great Oasis sites, while Middle Mississippian influences are definite in the Cambria aspect. Wilford perceived these differing adaptive strategies as one evolution leading to the culmination of the Oneota aspect of the Upper Mississippi phase.

Further excavations in Red Wing, Minnesota at the Bartron site in 1949, the Bryan Site in 1951 and 1954, and the Silvernale site in 1948 and 1950, led Wilford to develop a different, more detailed sequence of development for Blue Earth Oneota (Dobbs 1984, Schirmer 2002). Wilford (1955) reasoned that the material recovered from these Red Wing sites were close enough in similarity to be grouped into the Blue Earth taxon. Still operating without the benefit of precise dating, Wilford worked on constructing developmental sequences through perceived adaptive strategies, stylistic similarities, and geographic proximity. Associating the Cambria aspect with Mississippian adaptive strategies, and noting the common presence of trailed lined decoration on Cambria pottery, Wilford (1955) believed that Cambria people were a direct ancestor to Blue Earth Oneota. Through the data available at the time, it made sense to Wilford that the Silvernale focus was the developmental bridge spanning Cambria and Oneota material. Wilford suggested Silvernale pottery differed from Cambria pottery in only three important ways: "it is shell tempered, the most common shape has a rolled rim and no neck, and the designs on the upper body are often curvilinear rather than rectilinear" (1955:140). While Wilford suggested a developmental sequence between Silvernale and Blue Earth, he also did the same for Blue Earth and Orr. The presence of historic trading goods along with the absence of older, intrusive pottery as seen at the Humphrey site allowed Wilford to understand Orr Oneota sites in northeast Iowa as the younger occupation. To Wilford, a clean sequence from Cambria to Silvernale, from Silvernale to Blue Earth, and from Blue Earth to Orr was evident in the archeology available at the time.

Research questions centering around the developmental origins of Oneota and Blue Earth continued after Wilford. Guy Gibbon dedicated parts of his research toward understanding Oneota development in Wisconsin and Minnesota, often concentrating on Cahokia-based Mississippian influences traveling north into the Prairie Peninsula from the American Bottom. Gibbon thought it possible that Mississippian traits spread northward into Late Woodland societies throughout Minnesota and Wisconsin through the spread and adoption of maize agriculture. Gibbon (1972:167) specifically points to the Effigy Mound tradition as a group of Late Woodland bands that "experienced a gradual, differential adjustment to a basic innovation in the economic foundations of their social units; a more secure food supply and external interaction."

Gibbon (1974) believed that intensified maize horticulture would have been more appealing to these nomadic Midwestern groups due to the utilization of new food-storage techniques combined with an increasing amelioration of the climate. The little climatic optimum (A.D. 850-1300) coincided with the northward spread of maize out of the American Bottom region, until the crop "reached its northernmost prehistoric limits in northeastern North America by A.D. 1000" (Gibbon 1972:168). Gibbon (1974) argued that Oneota sites in southern Wisconsin show a full adaptive shift toward maize horticulture as soon as A.D. 900. This adoption of intensified horticulture could have initiated socio-political structural shifts throughout these previously hunter-gatherer societies. A shift in food production symbolizes a shift in labor coordination, which Gibbon explained can lead to a wide swath of other eventual evolutions in culture, such as in "family type, child rearing practices, and the form of community interaction with neighboring peoples, in a network-like fashion" (Gibbon 1972:168). The adoption of shell tempering in pottery manufacturing by Oneota groups might have been in conjunction with the adoption of maize agriculture, as the inclusion of shell tempering can often allow a pot longer exposure to hotter cooking temperatures.

While Gibbon believed Mississippian food-production was the inspiration for northern groups to adopt flavors of Mississippian culture, he also believed it was important to understand how Mississippian ideas such as intensified maize horticulture spread north. Gibbon (1972) explained that many other

researchers had proposed the intrusive migration of Mississippian social units north into the Prairie Peninsula, due to the difficulty in understanding the transition between food-collecting and the adoption of maize agriculture. This transition in eastern Wisconsin proved to be difficult in part due to "the rapidity of the change, the frequent shifting of site locations, and the nearly complete absence of multicomponent sites with reasonably clear stratigraphy" (Gibbon 1972:168). The sudden appearance of smoothed surface treated pottery with shell tempering also seemed to support the simple migration of Mississippian people northward into new environments. Gibbon suggested that if more early Oneota sites were found with grit tempered, cord-marked pottery, theories of in situ development would have been more prevalent among researchers.

At the time of his research, it had become commonly accepted that in situ developments lead to the Iroquois' adoption of intensified food production in the northeast United States. While the Iroquois also utilized technology that in a Midwest setting is considered to be Mississippian, such as globular pots and small triangular projectile points, the Mississippian taxon is not applied due to the separate nature of cultural development. Despite an *in situ* model for Oneota origins being comparable to the development of Iroquois culture, Gibbon proposed intrusive cultural practices spreading northward up from Cahokia through intensified trade networks. While Gibbon explained his model was in need of empiric testing, he proposed the State-level integration achieved by Cahokia allowed for the growth of a secondary state, which he names the Ramey State (Gibbon 1974). Gibbon believed Red Wing sites such as Silvernale and Bryan to be examples of true Mississippian village sites, which would have allowed for interactions between Woodland and Mississippian peoples. Along with Aztalan in western Wisconsin, and sites around the confluence of the Mississippi and Apple rivers in northwest Illinois, Gibbon thought Silvernale and Bryan to be "strategic nodal points around the periphery of the core zone" (Gibbon 1974:134).

Following Wilford's excavations of the Humphrey and Vosburg sites in 1938 and 1947, respectively, the sites along the Blue Earth River valley in southern Minnesota were not visited by researchers in any intense way throughout the mid-1950s and 1960s. Guy Gibbon and Michael Scullin returned to the area in 1974 and 1975 to survey the Center Creek locality (Anderson 2018:35). Graveling

operations in 1976 led to the discovery of another nearby site (21FA50) which was identified by the presence of artifacts and several fire pits. A volunteer crew mapped the exposed pits and recovered the salvageable content.

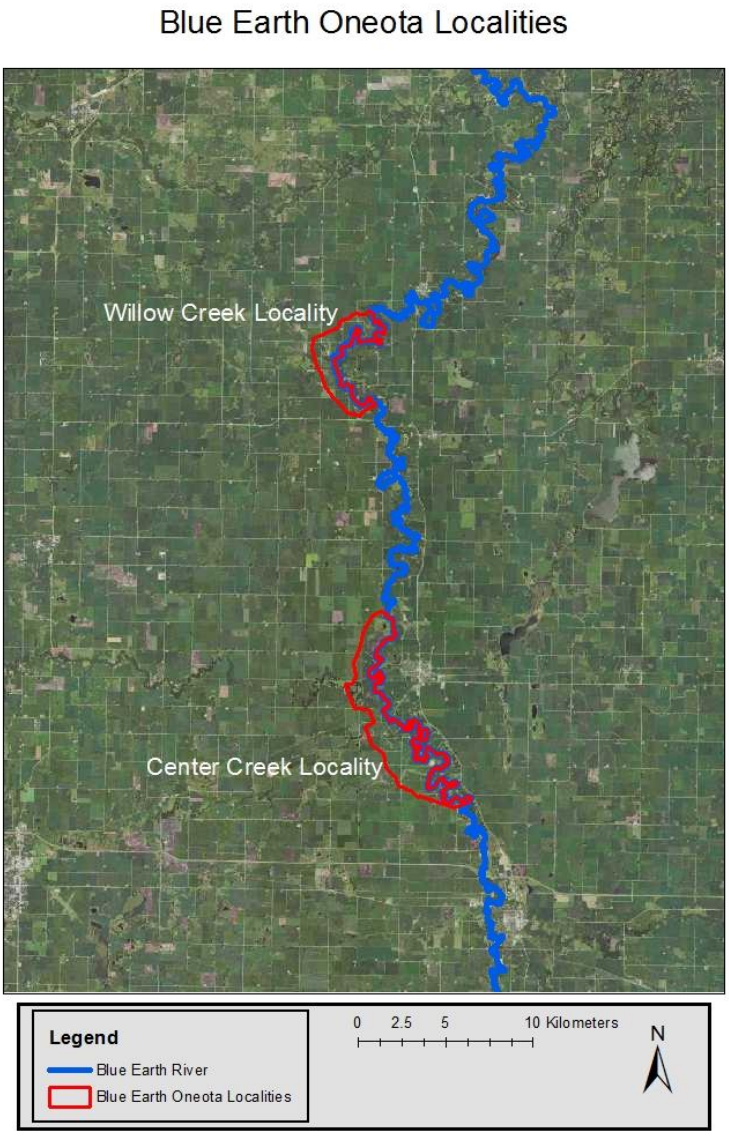
In 1979 Guy Gibbon returned for a University of Minnesota archeological field school at Vosburg in conjunction with the Science Museum of Minnesota. The stated mission of the field school beyond basic archeological excavation was the recovery of faunal and floral material. Clark Dobbs oversaw this excavation, and used the findings from the field school as data in his 1984 PhD dissertation.

Two large survey efforts were conducted in 1980 and 1981 within the Blue Earth River valley. Orrin C. Shane III conducted surveys for the Science Museum of Minnesota and discovered a cluster of Oneota sites around the confluence of Willow Creek and the Blue Earth River, comprising what would become the Willow Creek locality (Figure 2) (Dobbs 1984). During the same years, Clark Dobbs, now a doctoral candidate at the University of Minnesota, managed surveys along the Blue Earth River for the University of Minnesota that would generate data from surface finds which he later used in his dissertation study in conjunction with previously recovered material from the Vosburg site.

Unfortunately, the results of Shane's survey were never published. As of today, Dobbs' dissertation is the most comprehensive treatment of Blue Earth Oneota. Before Dobbs' dissertation, much of the literature regarding Blue Earth Oneota contained unproven assertations based on small assemblages. Wilford applied the Blue Earth taxon during a time when the variation of Oneota pottery material was still unrealized, leading to Blue Earth being used as a place holder in most early applications in places like Red Wing, Minnesota, and at the Sheffeld site along the St. Croix River.

Recovery methods used during the 1979 Vosburg excavation are not entirely documented. The excavation would eventually include 24 2x2m units containing 67 features. It is reported that the dark coloring of the first 25-30 centimeters of soil made feature discovery "usually impossible." Dobbs utilized quarter inch mesh screening for "the first portion of the excavations" while using a "window screen to obtain the bones and teeth of small mammals" (Dobbs 1984:73) in feature fill. The majority of

Figure 2



encountered features were interpreted to be storage refuse pits. Another goal of the 1979 field school was the discovery of house or structurally related features. Dobbs claimed the integrity of any postmold or structural features might have been obliterated by the 100 years of plow activity.

Dobbs (1984) described the features encountered during the 1979 field school as being similar to the two of the seven features encountered by Wilford in 1949, but also to features typical at other Oneota sites. In his dissertation, Dobbs categorizes the 67 features encountered at Vosburg in 1979 as belonging

to three different feature types: bell-shaped storage pits; trash pits that vary in size but tend to be oval or elliptical; and shallow basin shaped features. Of these features, Dobbs noted:

> These three types of features are the most common at Vosburg. However, there is considerable variation in the form and contents of features. The relative sterility of these features is striking. The density of artifacts and bone within the refuse is either quite high or quite low. There is little middle ground. Many of the bell shaped storage pits appear to have been sealed and never reopened. Some were used for storage and later filled with refuse. No evidence of mat or fiber lining of these pits has been found (Dobbs 1984:92).

It is important to the research of this thesis to note that Dobbs claimed some of these features indicated evidence of repeated episodes of filling, though he does not elaborate on this evidence. Dobbs also notes in his dissertation that many of the bell-shaped storage pits "are almost always capped with a layer of sand and gravel about 10 centimeters thick" (Dobbs 1984:91).

In his 1984 dissertation, Dobbs offered eight radiocarbon dates collected from the Vosburg site. Only one of these samples was from Wilford's 1947 excavation, which was submitted for assay by Elden Johnson. Dobbs described this radiocarbon date as being the most questionable. The remaining seven samples were recovered from "primary refuse deposits within features…each associated with ceramics" (Dobbs 1984:93). At the time, it was believed maize did not return accurate radiocarbon dates, so Dobbs only submitted wood charcoal samples. It is possibly due to this nature of his samples that his dates eventually became controversial, with high error ratings (150 years). Dobbs offered a conservative interpretation of his sample radiocarbon dates: each sample was deposited around A.D. 1300 with "differences in the dates interpreted as the result of error and variation that is inherent in the radiocarbon dating method" (Dobbs 1984:94).

His liberal interpretation of the radiocarbon dates, which he admits as being his preferred reading, involves a "disjunct occupation of the site by Oneota people" (Dobbs 1984:95). Dobbs hypothesized an Oneota occupation starting during the late tenth or early eleventh century A.D., continuing until the mid or late seventeenth century. Dobbs believed this hypothesis was supported by other radiocarbon dates taken from both Emergent Mississippian sites in Missouri and Oneota sites in northwest Iowa and La

Crosse, Wisconsin. Dobbs also argued the considerable variation in pottery styles supported the hypothesis of a prolonged occupation at Vosburg, claiming a shorter period of occupation would leave behind a more homogenous pottery assemblage.

During the 1980 and 1981 surveys, Dobbs and Shane found that Oneota sites did not appear outside either the Center Creek or Willow Creek localities. Their survey also found no Oneota sites on the east side of the Blue Earth River (Dobbs and Shane 1982). During these two surveys, thirty-three sites were recorded within the Center Creek locality, and thirty-one sites within the Willow Creek locality. Dobbs and Shane believed that the location of both localities was deliberately selected for a variety of reasons. The locations offered access "to a variety of resource zones including the Blue Earth River, closed deciduous forest, semi-open oak savannah, and prairie," while also offering protection "from prairie fires, severe storms, and flooding" (Dobbs and Shane 1982:68). It is also important to note that the recorded boundaries of these two localities indicated Blue Earth Oneota settlement patterns differed from earlier Woodland and Cambria peoples, whose sites can be found on both sides of the Blue Earth River.

Dobbs was able to establish six basic settlement types within the Center Creek locality on the basis of four indices: "site size, debris density, a scraper index to evaluate the relationships between processing and hunting tools, and a ceramic/lithic index which measures the degree of certain domestic activities" (Dobbs 1984:96). Future systematic survey work in the Blue Earth valley may allow archeologists to expand on these settlement types. One settlement type was represented by only four sites at the time of Dobbs dissertation, and he admitted that it would be impossible with his current data to confidently state the function of these site types beyond the obvious. It is also important to note that each of these settlement types was created using data generated only from surface finds. More extensive data recovery, including intrusive excavation, will allow for a more robust picture of Oneota settlement patterns within the Blue Earth River valley.

Examining the lithic tools recovered from all Center Creek sites during his dissertation studies, Dobbs explained that five types of raw materials were consistently used in stone tool manufacturing: "quartzite, oolitic chert, white chert, Rapid chert, and several miscellaneous materials" (Dobbs 1984:84).

According to Dobbs, quartzite and "a few miscellaneous types of raw material" were used in low frequency, with quartzite commonly used for larger tools. The raw materials referred to as oolitic chert, a white chert, and a grey chert were the most commonly recovered. Dobbs identified what he called the grey chert as Grand Meadow chert, which he also named Rapid Chert. He also identified the Grand Meadow site (21W8), located a hundred miles east of the Center Creek locality, as the assumed source for this raw material. Although outcrops of oolitic chert had been reported within the Blue Earth River valley, Dobbs suggested Center Creek inhabitants were procuring the oolitic chert from secondary sources in gravel deposits. This research aims to test these ideas based on the presence or absence of rind and cortex on Grand Meadow and Prairie du Chien chert artifacts. Lithic nodules recovered from secondary sources within till deposits should have a larger presence of rind compared to cortex, while the opposite is true for nodules queried from primary deposits (Anderson 2018).

The chipped-stone tool assemblage recovered by Dobbs was described as similar to other Oneota assemblages throughout the Upper Midwest, with end scrapers and unnotched triangular projectile points being the most common tool types recovered. Also recovered but in low frequency, Dobbs reported "drills, wedges, gravers, gouges, knives, and other forms…" (Dobbs 1984:86). A strong correlation exists between raw material and tools type reported by Dobbs for both small unnotched projectile points and end scrapers within the Center Creek Locality. The projectile points recovered are consistently made from "small flakes of oolitic chert," while 90% of end scrapers recovered were reported to be manufactured from Rapid Chert (Dobbs 1984:86). Dobbs emphasized the high frequency of end scrapers encountered at Center Creek sites, with Shane indicating a comparable frequency at the Willow Creek Locality. A high abundance of utilized flakes was also evident in the material recovered at Center Creek. Dobbs explained that some sites a ratio of "waste flakes used as tools ranges from 3% at 21FA76 to more than 20% at other sites" (Dobbs 1984:88). Flake knives and graver or burin-like flake tools are reported to be most frequently recovered.

In his dissertation, Dobbs also described the "composite type that is the characteristic ceramic type for the Blue Earth group continuity" (Dobbs 1984:103) as Blue Earth Trailed, which he derived from

82 vessel segments and all from the Center Creek locality. Dobbs also admitted the presence of considerable variation within Blue Earth Trailed, and established nine varieties within the composite type. Dobbs did not include vessels from the Bartron site in Red Wing or the Sheffield site along the St. Croix, and did not directly state that they would not fit within the Blue Earth Trailed composite type (Dobbs 1984, Neumann 2017).

Although the pottery attributed to Blue Earth Oneota shows distinct similarities implying a shared cultural system, Blue Earth pottery also displays some variation in both morphology and decoration. Combined with variation in settlement types and radiocarbon evidence, Dobbs believed the archeology of Blue Earth Oneota implied a series of subunits within the Blue Earth continuity. Dobbs (1984) defined three developmental stages of Blue Earth Oneota: Emergent, Florescent, and Terminal. Emergent Oneota was defined by Dobbs as the transition between Woodland to Oneota lifeways during A.D. 900 – 1000 when most Blue Earth groups lived along the Mississippi River at the Red Wing locality. Dobbs attributed the most distinctive Blue Earth characteristics to the Florescent stage, which he dated between A.D. 1150-1400 but admitted that it was "difficult to draw boundaries between the Florescent, Emergent, and Terminal Stages" (1984:211). In Dobbs' model, during the Florescent stage Blue Earth populations increased as groups left the Mississippi and headed into the prairie of the Blue Earth valley. With hunting and gathering still an important component of subsistence practices, the Florescent stage involved a noticeable increase in maize horticulture corresponding with the relocation onto new prairie soils and an increase in population. The Terminal stage, dating between A.D. 1400 – 1680, represented an increase in bison hunting over maize horticulture, possibly leading to a plateau in Blue Earth population growth.

It is important to note that Dobbs did not clearly state his methods for developing these Blue Earth developmental stages. With radiocarbon dates only from the Vosburg site, and with the rest of his data only generated through surface finds, it is fair to conclude that Dobbs did not have the appropriate data to propose developmental stages for Blue Earth Oneota. Dobbs' application of developmental horizons is similar in like to Hall's work (1962), whose application of horizon was in no way related to the proposed definition by Willey and Phillips taxonomy. Today, some researchers agree (Overstreet

1997) that the developmental horizon concept, as proposed by Hall, should not be applied universally to Oneota complexes outside eastern Wisconsin.

Recent Blue Earth Oneota Research

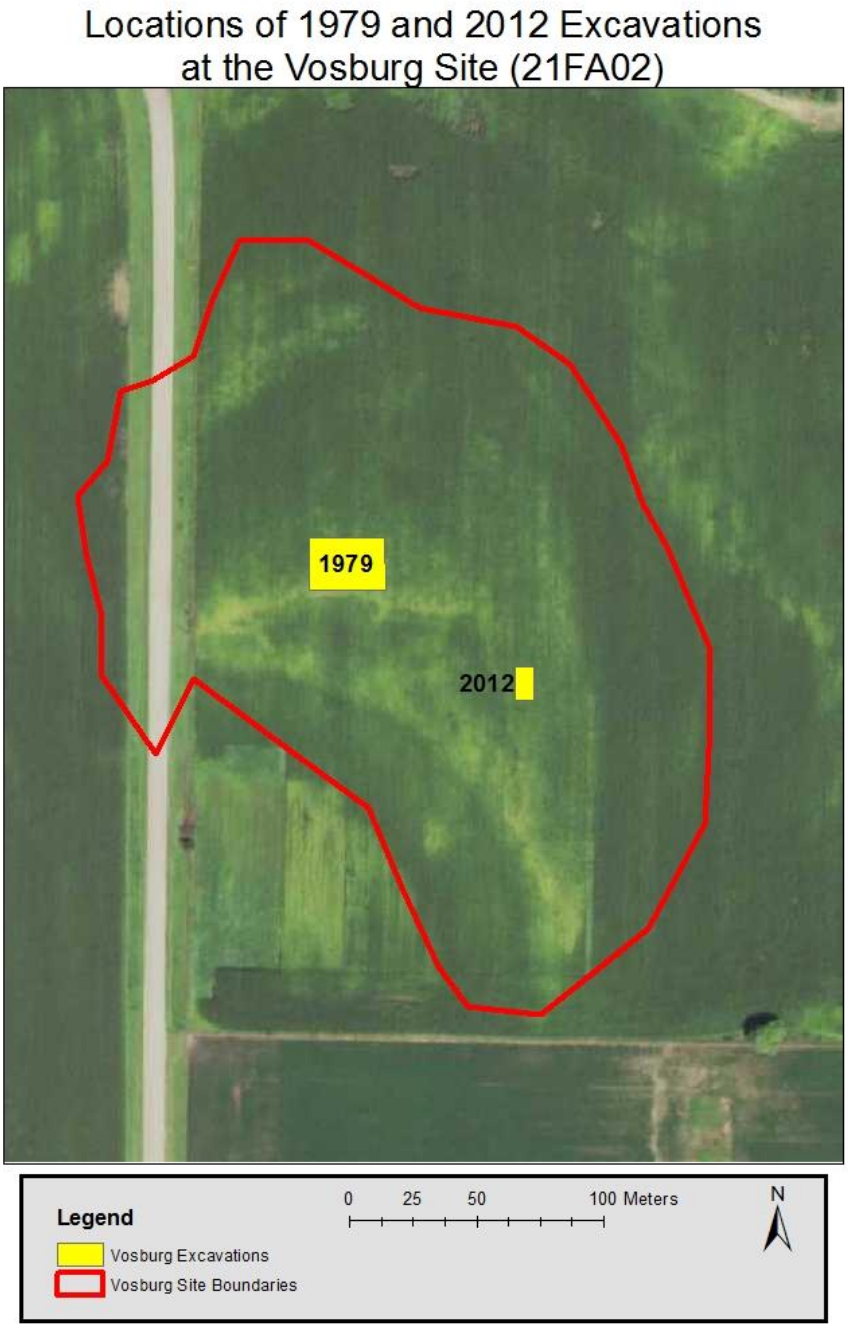
In the early 1980s, archeologists surface surveyed and excavated two habitation sites (21FA72 and 21FA97) during the reconstruction of CSAH 10 (Anderson 2018). Ten features were excavated between the two sites, most of which appeared to be the truncated bottoms of hearths. Anderson (2018:36) noted that "large portions of two Blue Earth phase pottery vessels" from 21FA97 were also recovered. In 2007, the natural Resources Conservation Service surveyed 21FA50 before a sediment control project. No archeological material was encountered, leading archeologist Patrick McLoughlin of the NRCS to determine the site had been destroyed by gravel mining. In 2010, shovel testing by the 106 Group at 21FA69 led to the discovery of a single piece of debitage (Anderson 2018).

Research at the Vosburg site resumed in 2012 under the direction of Ronald Schirmer of Minnesota State University, Mankato. See Figure 3 for the location and approximate extents for the 1997 and 2012 excavations. This excavation opened eight one-by-one meter units and one fifty-by-fifty centimeter unit and encountered 13 features. These features were comparable to those encountered by Dobbs at Vosburg in 1979. Excavated units were screened through quarter inch mesh, while feature matrix was collected for flotation. Artifacts within feature soil considered to be culturally diagnostic were piece plotted and collected separately from the float samples.

Master thesis research from Minnesota State University, Mankato utilized the material data recovered from the 1979 excavation in conjunction with the 2012 excavation to better understand the Blue Earth taxon. Michelle Neumann (2017) sought to compare pottery attributes from the Blue Earth and St. Croix rivers to those of the of the Red Wing region. Neumann (2017:3) explained that pottery from all three areas was originally defined "using a few vague classifications and little quantitative data," and that the resulting typological classifications have unfortunately stuck throughout the decades. Each of the

three areas Neumann used in her research were unique; Red Wing posed as an aggregation area where distinct groups would have gathered and interacted, the Blue Earth River is home to two tightly clustered

Figure 3



localities surrounded by a stark absence of sites, and the St. Croix River is home to the Sheffield site with no other known Oneota villages nearby. As already mentioned, at one time Blue Earth occupations were thought to have been present at both Red Wing and Sheffield.

Lloyd Wilford initiated typological classifications for both the Blue Earth and Red Wing region (Neumann 2017). Wilford defined pottery recovered from Humphrey and Vosburg as belonging to the Blue Earth focus, which was changed into a phase by Gibbon who, like Wilford, noticed the similarities between Blue Earth pottery and the pottery recovered from Red Wing and Sheffield. As previously mentioned, Dobbs (1984) created the Blue Earth Trailed pottery type from 82 vessel segments recovered from the Center Creek Locality. Neumann provided a thorough definition of Blue Earth Trailed pottery:

> Blue Earth Trailed jars have globular vessel shapes, orifice diameters of 10-30 centimeters, smoothed surfaces, round lips that are 1-7 mm thick with lip notches, straight everted rims that are 2-13 mm thick and 6-54 mm long with interior trailed lines, sharp (86%) necks, round shoulders that are 2-12 mm thick with trailed lines and punctates, and strap (70%) handles that are 30 mm long at maximum with occasional vertical trailed lines. Common shoulder motifs are line panels, chevrons, punctate borders, and concentric circles. Line thicknesses range from 0.5-5 mm. (2017:236-237).

Neumann compared both the morphology and decorations of Blue Earth trailed vessels to the pottery found at the Red Wing region and the Sheffield site. Overall, Neumann discovered that while similarities do exist between the three areas, significant differences are also present which imply distinct cultural histories. As far as decoration, pottery recovered from the Center Creek locality and the Red Wing region "share similar elements and motifs but differ greatly in overall decorative profile" (Neumann 2017:222). Chevrons and punctate borders are common for both Red Wing and Center Creek, but their patterning is distinct to each area. Center Creek pottery also includes line borders within decorations in a way not commonly seen at Red Wing. While birdtails are not a typical motif at either Center Creek and Sheffield, at least one vessel with such a motif has been recovered from both locations. Neumann found that vessels from the Red Wing region and the Center Creek locality differ on a wide variety of morphological traits, but only share similarities with "round shoulders, smooth surfaces, and rectilinear lines, which are recognized as broad characteristics representative of pottery within the Oneota tradition"

(Neumann 2017:182). Compared to Red Wing vessels, Blue Earth pottery is more similar to Sheffield pottery in orifice size.

Despite noticeable variation amongst Blue Earth vessels, there is considerable homogeneity within both the shapes and decorations chosen by Blue Earth craftspeople which imply a fluid flow of information and ideas between sites. With the exception of one sample, all pottery surfaces from Center Creek have been smoothed (Neumann 2017). Of all the body sherds collected at Humphrey and Vosburg, only two percent were not shell tempered and were of grit temper instead (Anfinson 1997), and these possibly represent a different Late Woodland occupation. No sherds have been found with mixed temper at Center Creek. Neumann (2017:181) also explained that "lip notches are nearly ubiquitous on Center Creek segments with notches on the interior surface being the most common." Despite sharing some similarities with the vessels found at Red Wing and Sheffield, it is clear, thanks in part to the work performed by Neumann, that Blue Earth Oneota was a unique social system separated from other nearby Oneota societies.

Josh Anderson (2018) also sought to better establish the relationship between Blue Earth Oneota and the Oneota located within the Red Wing region. Anderson analyzed the morphology of end scrapers made of Grand Meadow chert recovered from both areas. Although the relationship between the two groups is poorly understood, recent radiocarbon dates indicate that Oneota occupations within the Blue Earth Valley were contemporaneous with the Spring Creek Oneota phase in Red Wing (Schirmer 2016). Examining end scrapers from both locations, Anderson found that not just the morphology of scrapers was different between the two areas, but also the raw material chosen. Of the Blue Earth end scrapers analyzed by Anderson, ninety percent were of Grand Meadow Chert, with the remaining end scrapers made from either Prairie due Chien Chert or unidentified materials (Anderson 2018:61). Only fifty-five percent of the end scrapers examined by Anderson from Spring Creek phase sites were of Grand Meadow Chert, with thirty-six percent made of Prairie du Chien Chert. This difference in the raw material used for end scrapers between the two locations is statistically significant but also implies different patterns of material collection distinct to both locations. Anderson found that a significant number of end scrapers

from both locations had cortex present while both locations also produce end scrapers with all stages of reduction represented, which he believed suggested that "the residents of sites associated with both phases had direct access to the Grand Meadow Quarry (21MW8)" (2018:161). Although it is possible both groups were acquiring Grand Meadow Chert from the same source, the idea that Blue Earth peoples were gathering raw materials differently than those at Spring Creek sites is somewhat supported by the morphological differences of end scrapers between the two locations. Anderson believed that, although statistically insignificant, the morphological differences of end scrapers between the two locations might suggest that Spring Creek peoples were making less frequent quarrying trips to the Grand Meadow Quarry, stating:

> The tendency for Grand Meadow Chert end scrapers from Spring Creek phase sites to have ground platforms and eraillure facets more often than those from Blue Earth phase sites, as well as the typically larger bulbs of percussion and eraillure facets on Grand Meadow Chert end scrapers from Blue Earth phase sites, is consistent with a conscious or unconscious attempt at the conservation of Grand Meadow Chert at the Spring Creek phase sites. (2018:163)

Although statistically insignificant, the higher frequency of Spring Creek end scrapers with cortex compared to those on Blue Earth end scrapers possibly implies that Blue Earth peoples were more selective with what size Grand Meadow Chert nodules to transport. Anderson also suggested that the differences in material conservation might imply a difference in demand for quickly produced end scrapers at Blue Earth sites compared to Spring Creek sites, "indicating that the pressures/incentives associated with hide-products were stronger for Blue Earth phase groups" (2018:164-165). The one statistically significant difference Anderson was able to find in Grand Meadow end scrapers between the two locations was weight, with Grand Meadow end scrapers from Blue Earth sites weighing on average a gram heavier than those found at Spring Creek sites. Anderson also discovered that end scrapers associated with Woodland sites have a higher frequency of ventral lateral retouch which might imply a difference in hafting preferences.

Despite that almost all of the comparative dimensions examined by Anderson returned statistically insignificant differences, he did find that Grand Meadow end scrapers from Blue Earth sites

were consistently different from those recovered at Spring Creek sites. These differences might be minute, but consistent differences in morphology might imply consistent differences in craftsperson preferences between the two locations. It is also likely these differences are simply the result of sampling error as no statistical significance is present to support real variation within the sample. A more robust sample size might help show the true presence of statistical variation between Blue Earth and Red Wing end scrappers.

Examining pottery, which allows the craftsperson much more freedom of expression when compared to lithics, Neumann (2017) found that there are significant differences in both style and morphology between Red Wing sites and Blue Earth sites. The findings of Neumann, and to some degree Anderson, implies that while Blue Earth societies were to some degree interacting with nearby Oneota neighbors, that they were also distinct groups of people deserving of their own distinct taxon.

More recent research performed by Rutter (2023) and Stebbins (2023) offers even more insight into Blue Earth Oneota lifeways using modern analysis methods. Analyzing the zoological remains recovered from the Vosburg site during the 2012 excavation, Rutter concluded that Vosburg was likely utilized as a spring and summer habitation due to the large amount of osteichthian and bivalve remains. Rutter suggested more mammal remains would be present as a result of cold season habitation. Rutter (2023:79) states "during warm months, the inhabitants of Vosburg would have utilized an expansive collection of foraging, aquatic, and agricultural resources while also hunting both small and large game." Interpreting the presence of specific bison bones, Rutter also concluded

> The large mammal assemblage at Vosburg does not provide evidence of butchering and processing, or marrow extraction occurring at the site. It is likely that several kill and butchering sites can be found in the area surrounding Vosburg. The presence of bison bone at the site provides the use and reliance on bison by western Oneota groups, but evidence is yet to be discovered regarding the processing of bison at habitation sites. Instead, it is much more likely that small groups of hunters were traveling on the prairie, hunting and killing the bison, and processing the animal at the kill site. The meat, hide, and bone resources were then transported back to the main village. (2023:80)

Rutter's (2023) findings promote future researchers to test for the presence or absence for signs of butchering at Vosburg or other large Blue Earth Oneota village sites in accordance with her findings. The

implications generated by Rutter's findings suggest a working network of sites surrounding Vosburg, where food was procured and butchered away from the village. Future research can test for the presence of these smaller sites related to hunting and butchering. This research is made difficult due to the lack of pottery or other diagnostic artifacts usually associated with smaller sites where butchering was performed.

Analyzing the botanical remains recovered from the northwest corner of Feature 5, Stebbins (2023) was able to recreate environmental conditions likely present during the prehistoric occupation of Vosburg. Stebbins (2023) states that the wood charcoal analyzed for her work is indicative of Maple-Basswood vegetation, implying that the presence of Big Woods vegetation might have "developed in south-central Minnesota centuries earlier than previously thought," (Stebbins 2023:64). Stebbins also suggested "the environment surrounding the site was more mesic or wet-mesic than thought by previous researchers" (2023:64). The presence of Big Woods vegetation in or around the Blue Earth River valley could explain the lack of bison kills sites associated with that area during Blue Earth Oneota occupation, as flat, expansive grassland might have been elsewhere away from the river valley. Occupants of Vosburg might have lived in an environment that did not readily lend itself to large herds of roaming bison in need of abundant grazing vegetation.

Comparing zoological and botanical remains between the 2012 excavation and Dobbs' 1979 excavation is difficult through various obstacles. As Rutter (2023) states, a true comparison between the two zoological collections would require a complete reanalysis of the 1979 faunal material due to the field sampling methods and cataloging employed by Dobbs (1984). A general comparison between the two assemblages does indicate some stark differences, as Dobbs (1984) reported only 4.97% of the zoological assemblage recovered during his excavation as bison, while Rutter reports 29.34% of the zoological material recovered during 2012 as bison. Rutter (2023) explains this may be due to lab analysis methods, as Dobbs noted the presence of "large mammal" bone without associating the material to bison or other species. As Stebbins (2023) states, there has been almost no paleoethnobotanical research conducted on the Vosburg site. Dobbs (1979) only reported twenty-two specimens from the 1979 excavation, which were identified to the genus or species level (as seen in Stebbins 2023).

Both Rutter (2023) and Stebbins (2023) highlight the diverse assemblage of zoological and botanical remains at the Vosburg site, implying a diversified system of food production often associated with Oneota subsistence patterns (Edwards 2017). Stebbins identified cultigens such as *Zea mays* (Maize), *Cucubita pepo* (Pumpkin Squash), and *Phaseolus vulgaris* (Common Bean) within Feature 5, but also acknowledged an "intense utilization of wild resources at the Vosburg site" (Stebbins 2023:56). Both researchers also concluded the possible presence of feasting represented within Feature 1 and 5. Feasting is well documented in Red Wing in association with Oneota sites (Schirmer 2002). As a unique social mechanism related to many other social practices, such as trade, food production, and religious ceremonies, feasting is an important aspect of late prehistoric lifeways in the Upper Midwest.

Evolutions in Understanding Oneota Archeology

The world of prehistoric archeology no longer reflects the setting in which earlier archeologists such as Wilford or Keyes operated. The adoption of the Willey and Phillips (1958) taxonomic system in conjunction with the power of 14C radiocarbon dating has allowed archeologists to develop much more exact theories of past societies and migrations. Continuous decades of research have also developed an in-depth body of data throughout the Upper Midwest which has offered a much more robust picture of Oneota settlement between different localities and regions. Wilford and Keyes were working in a time when the Oneota taxon was still freshly imagined, and materials definable as Oneota were only known to be in a limited swath of northeast Iowa, southcentral and eastern Minnesota, and eastern Wisconsin. The varied nature of Oneota pottery design and decoration was therefore unknown at the time, making it easier to group faraway assemblages under one sub-taxon of the Oneota tradition, such as Blue Earth.

As more material definable as Oneota was recovered in Missouri, Nebraska, Illinois, and Indiana, archeologists realized the sub taxa (phases, group continuities) within the Oneota tradition should be treated at local levels of understanding. The taxon of phase was commonly assigned to Oneota material despite its application not strictly adhering to the description given by Willey and Phillips (1958: 22), who define a phase as "spatially limited to the order of magnitude of a locality or region and chronologically

limited to a relatively brief interval of time." The locations known for having Orr and Blue Earth material were eventually researched heavily enough to create defined boundaries of occupation which meet Willey and Phillips description of a phase, but temporally both complexes span centuries, with neither "limited to a relatively brief interval of time." Dobbs (1984) explained that a group continuity better describes both the Blue Earth and Orr taxon. A group continuity is not formally described in Willey and Phillips taxonomic system, but the nature of past Oneota research—with multiple localities understood simply through the examination of surface materials due to limited excavation efforts—lends itself to the application of group continuities. Further excavations and research could allow for the application of more specific taxonomy to these group continuities, specifically Blue Earth.

Advances in pottery research have also emphasized the unique nature of Oneota localities and regions. As previously mentioned, the statistical analysis employed by Neumann is an example of applying intense standards of artifact typology to better define the unique behaviors of pottery manufacturers between separate Oneota complexes. In eastern Wisconsin, Seth Schneider (2015) hoped to find a better understanding of the social, political, and economic interactions between three spatially distinct Oneota localities: Koshkonong, Grand River, and Waupaca. Schneider (2015:376) was able to conclude that "the compositional data, manufacturing processes, and choices in decorative motifs, indicate that the pottery vessels separate out by locality." While different manufacturing behaviors produced locally unique pottery, similar practices were still employed between each locality. A similar amount of clay matrix and temper was employed between each locality. Based on the differences and similarities in pottery, Schneider (2015:377) concluded "sharing is evident also in the decorative elements and patterns used which demonstrate an iconographic cohesiveness between the localities. However, the localities maintained a group identity by only sharing a few decorative motifs with each other and varying in how the elements and patterns were displayed."

Both Neumann and Schneider are modern examples for the application of pottery analysis to better understand the intrarelationship between separate Oneota localities. Each author used intense analysis methods to record pottery attributes for comparison between localities. Schneider's research also

utilized clay sourcing methods, including ED-XRF, to determine if sherds were locally manufactured or imported from other clay sources. The largest black hole in our understanding of Blue Earth Oneota is the nature of the Willow Creek locality. Both Dobbs and Shane agreed that both localities belonged to the Blue Earth taxon, with similar pottery designs and decorations, but as to the relationship between the two areas, almost nothing is known. Research similar to that of Neumann and Schneider would help understand the dynamic between the two localities.

With only one 14C date to use, the temporal relationship between Willow Creek to Center Creek sites is difficult to understand. Willow Creek might represent a different settlement of Blue Earth groups contemporary with Center Creek sites, in which case research such as Schneider and Neumann could help understand the nature or amount of communication and interaction between the two localities. New 14C dates could also demonstrate that the two localities are temporarily separate, and represent an evolution of settlement patterns by the Blue Earth group continuity. The single current 14C radiocarbon date indicates a contemporary relationship between the two localities.

The Status of Blue Earth Oneota Archeology

Despite all the evolutions in archeological field and lab methods, the communities' understanding of Blue Earth Oneota has progressed throughout the past century in only fits and starts. Dobbs' dissertation still serves as the sole treatment of the taxon. In his dissertation, Dobbs' claims stylistic relations between Blue Earth and other Oneota complexes (northwest and northeast Iowa, Red Wing, Minnesota). Later work has established the unique nature of Blue Earth compared to these other spatially separated Oneota complexes, although the relationships between these different areas implied by their material similarities is still uncertain.

The modern understanding of Blue Earth Oneota has lagged behind advances in research applied in other areas of Oneota occupation. Structural features are poorly understood at Blue Earth sites. The type and size of house structures have huge implications on social structures and subsistence patterns (O'Gorman 2010), both of which are minimally understood for the taxon. Overall, the one limitation that

hangs a shadow over all Blue Earth research is the overemphasis of the taxon's type site, Vosburg. Further research using data not derived from the Vosburg or Humphrey site will help to better reflect the archeological reality of the Blue Earth taxon, as any behaviors specific to the Vosburg site are currently being treated as representative of the entire Blue Earth taxon. Data derived from other sites will help to show the variation and similarities of Blue Earth material culture and site structures. Of course, obtaining 14C radiocarbon dates associated with diagnostic pottery sherds from these other Blue Earth sites would be ideal. Finding such data at sites located in the Willow Creek locality will also expand our knowledge of Blue Earth groups.

Chapter 3: Methods

The research included in this project involved the analysis of artifacts recovered from the 2012 Vosburg site excavation. This research focuses on feature analysis of two refuse pit features (Feature 1 and 5) encountered in 2012. Both features are nearly 1.5m wide, and were documented as being ovular, dark stains of "greasy" silt loam. Both features were fully sampled for flotation and were excavated until vertical termination. Staining associated with Feature 1 terminated at 95 centimeters below surface, while the staining associated with Feature 5 terminated at 160 centimeters below surface. This research only utilized artifacts recovered from the northern halves of both features. Soil samples taken from the refuse pit features were floated and sorted, and artifacts were split into their respective material categories: zoological, lithic, pottery, and botanical. The research for this project analyzed the lithic and pottery artifacts recovered from these soil samples and the artifacts recovered from unit excavation and surface collection. The zoological artifacts utilized in this project's research were sorted from float fractions and analyzed by Rutter (2023). Botanical data within this research derived from the work performed by Stebbins (2023), who analyzed the carbonized botanicals from the northwest quarter of Feature 5 after sorting them from float samples.

Flotation

Soils samples taken from various pit features were floated in a Dousman A1 Flote-Tech flotation system. The volume and provenience of the soil samples were recorded on a lab float log before being floated. Every material category of artifact was sorted from the heavy fractions, using a USA Sieve Series tower to sort material into sizes. Artifacts from Feature 1 were sorted into sizes corresponding with the 25mm, 12.5mm, 6.3mm, 2.5mm, and 1mm mesh. Artifacts from Feature 5 were sorted similarly but this study did not utilize artifacts sorted from 1mm mesh for this feature. Material found with the 2.5mm mesh and smaller was sorted for artifacts using a Meiji Techno RZ Microscope.

Artifact Analysis

The weight for all pottery and lithic artifacts analyzed for this study was recorded. A Sartorius High Capacity Lab Balance was used to record weight for both pottery and lithics. Artifacts that were not diagnostic, matched in raw material and artifact morphology, and were sorted into the same sieve size, were recorded within one catalogue entry. Diagnostic artifacts or formal lithic tools were given their own catalogue entry, and had their maximum length, maximum width, and maximum thickness recorded using a Mitutoyo Digimatic Caliper. For access to the complete catalog, including artifacts recovered outside of Feature 1 and 5, contact the EARTH Systems Lab at Minnesota State University, Mankato

Lithic Analysis

All lithic artifacts from the 2012 Vosburg excavation were cataloged which involved the documentation of their raw material, morphology, and size. Raw material was identified using the lithic raw material collection at Minnesota State University, Mankato, in Trafton 362A. Raw materials that could not be decided were recorded as indeterminate. All lithic artifacts were separated into either debitage, tools, or non-tools. Tools and non-tools were categorized into what the catalog calls morphologies, such as projectile points, end scrapers, or hammerstones for tools; or such as fire-cracked rock, cores, or manuports for non-tools. Maximum width, maximum length, and maximum thickness was recorded for any artifact recorded as a tool or non-tool. Heat-treatment, cortex, and rind were recorded if present on any lithic artifact.

Pottery Analysis

All pottery artifacts from the 2012 Vosburg excavation were cataloged, which involved the documentation of surface treatment, decoration, and morphology. Raw material for all pottery artifacts was recorded as pottery. Any pottery sherd that demonstrated some presence of decoration were given their own catalogue entry. Sherds with no decoration, with identical surface treatment and temper, and that shared provenience, were given a shared catalogue entry. Morphology was recorded as belonging to the rim, neck, shoulder, or body of a vessel. Pottery decoration was recorded, including the location of decoration along with the type of decoration (i.e., punctate, stamped, incised, etc.). The orientation, width,

length, and frequency of every decoration type was also recorded. For full catalog of pottery attributes and decorations, contact the EARTH Systems Lab at Minnesota University, Mankato.

Chapter 4: Blue Earth Oneota Radiocarbon Dates

The Nature of Previous Blue Earth Radiocarbon Dates

Understanding the Oneota tradition requires an approach that emphasizes both temporal and spatial factors. Late prehistoric archeological complexes in the upper Midwest offer unique circumstances for researchers: the Oneota tradition seems to have developed quickly out of previously dissimilar lifeways, creating locally defined regions or localities spread throughout the entire upper Midwest. Some of these complexes are more than a hundred miles apart, and yet still share strikingly similar designs and decorations on their pottery. When researching the spatial limits to some Oneota regions or localities, such as the Willow Creek and Center Creek localities in the Blue Earth River valley or the Lake Koshkonong locality in eastern Wisconsin, apparent boundaries of influence can be defined around tight clusters of sites consisting of large villages and smaller resource procurement and hunt sites (Schneider 2015, Edwards 2017). The temporal limits to these and other Oneota complexes are more complicated to understand. Without C14 radiocarbon dates to provide temporal context to the archeology, researchers are left with significant questions concerning the Oneota occupation of the Upper Midwest. Where did the Oneota lifeway first develop, and when? When were some of these localities or regions first occupied, and when were they eventually abandoned? Do some of these localities or regions overlap in time, and if so, could that explain similarities in pottery manufacturing? And if not, could that explain differences in material culture? The spatial nature of Oneota archeology, with defined pockets of occupation spread throughout hundreds of miles of the upper Midwest, requires the asking of such questions.

Despite the eight radiocarbon dates presented by Dobbs in his 1984 dissertation (Table 1), seven of which were recovered during the 1979 excavation, and one of which was recovered by Wilford in 1947 (Dobbs 1984:93), a confident chronological placement has not yet been completed for the Blue Earth taxon. This is for multiple reasons, including plant biology, plant anatomy, atmospheric chemistry, and scientific methodology, which are addressed below.

Table 1: Radiocarbon Dates from the Vosburg Site as Presented by Dobbs (1984)

Lab no	14C Years	Corrected Calendric	Provenience
I-795	160 ± 85	A.D. 1760 - 1680 ± 95	Charcoal scattered through level 3, 1947
GX 6780	670 ± 140	A.D. 1260 - 1290 ± 150	Charcoal from F 57
GX 6781	675 ± 140	A.D. 1260 - 1290 ± 150	Charcoal from F 59
GX 6782	345 ± 140	A.D. 1470 - 1510 ± 150	Charcoal from F65
GX 7032	585 ± 125	A.D. 1350 ± 135	Charcoal from F7
GX 7033	525 ± 125	A.D. 12390 ±135	Charcoal from F 13
UGa 4123	835 ± 80	A.D. 1110 - 1170 ± 90	Charcoal from level 3, F 28
UGa 4124	1035 ± 65	A.D. 950 ±75	Charcoal from level 2, F 20

Radiocarbon dating is possible due to the natural intake of the carbon isotope 14C by plants and animals. 14C is naturally created in the atmosphere as 14N particles are bombarded with thermal neutrons supplied by cosmic rays (Wood 2015). Plants and animals intake 14C throughout their lifespan, but this intake stops at the moment of death. When 14C intake stops, radioactive decay of the 14C isotope occurs, returning the isotope to 14N. Radioactive carbon decays at a steady rate, with a half-life of 5,730 years, or 1% every 80 years (Hall 1967). Researchers are able to understand the original amount of 14C within a sample because organisms also naturally intake the carbon isotopes 13C and 12C, which are stable isotopes within the atmosphere. The stable presence of these carbon isotopes allows researchers to reverse engineer the carbon signature of the atmosphere contemporary with the samples' lifespan.

Radiocarbon dating is complicated through multiple factors. Not all organisms intake 12C and 14C in a ratio which exactly matches the atmospheric carbon signature. Plants such as grasses, which tend to grow in hotter, dryer climates, discriminate against C14 intake and prefer C12, the lighter isotope. Without the application of the procedure known as normalization (Hall 1967), radiocarbon dates from samples such as maize kernels can be returned back with much younger or older radiocarbon ages. For this complication, Dobbs and other contemporary researchers refrained from using maize kernels for radiocarbon dating.

Compared to 14C samples of wood, maize kernels are the ideal sample for radiocarbon dating as their lifespan only occurs over the course of a year. Sampling wood for 14C dating offers its own set of

difficulties. Carbonized samples of wood are often found at sites and in refuse features. While their abundance and size are tantalizing for sampling, wood samples often represent only a few rings (or years) of a sample that might have lived multiple decades. Considering the temporal importance of understanding late prehistory, radiocarbon assay with error ranges that span more than half a century can have detrimental impacts on any theoretical timeline. Wood samples have carbon signatures which represent the years they grew. For this reason, researchers calibrate 14C dates in regard to other tree rings which basically supply year by year records of the atmospheric carbon signature. The ratio of carbon isotopes in the atmosphere is not actually constant; factors such as sun flares or nuclear testing can alter the amount of 14C in regard to the lighter isotopes 13C and 12C. For this reason, calibrating 14C dates to spans of time with similar atmospheric carbon signatures is crucial for understanding how much 14C was originally in a sample.

The dates offered by Dobbs' dissertation (Table 1) were also produced using now antiquated technology which did not allow for the more exact result that today's technology can offer. The invention and application of radiocarbon dating by Accelerator Mass Spectrometry (AMS) allows for higher precision dating using smaller samples. Mass spectrometers used in radiocarbon dating before AMS were able to distinguish atoms of specific elements based on their atomic weight, but could not distinguish atoms of different elements with the same atomic weight (Wood 2015). AMS dating allows mass spectrometers to separate 14C isotopes from any other surrounding molecules. While AMS radiocarbon dating was provided by some laboratories by 1980, it did not become commercially viable for many researchers until the later half of that decade (Harris et al. 1987, Taylor 1987, Wood 2015).

The nature of the archeology present at the Vosburg site also complicates the process of developing a confident cultural chronology. Each excavation at Vosburg (Wilford 1947, Dobbs 1979, and Schirmer 2012), has uncovered areas congested with overlapping pit features, indicating some form of intensive occupation at the site. Pit features intruded into by younger pit features may cause mixing of cultural material, possibly destroying any discernable cultural stratigraphy present. As Dobbs noted

during his excavation, it is not always clear through a feature's boundary if it is indeed one intact feature or multiple overlapping features.

The contents of pit features at Vosburg nevertheless indicate some form of temporal continuity at the site. Samples taken from pit features without any intrusions only represent one snapshot of the Vosburg occupation. To best understand the nature of any site, it is ideal that many different C14 samples from features spread throughout the site are submitted for radiocarbon dating. While Dobbs did offer eight different radiocarbon dates, confidence in their accuracy and representativeness is lacking due to reasons mentioned above.

The Context of Previous Blue Earth Radiocarbon Dates

The below section includes updated calibrations for the C14 dates (Table 2) offered by Dobbs and also the latest assays acquired by Schirmer (2016). Provenience for the C14 samples are stated along with the inclusion of any associated pottery sherds.

I-795

In 1964 Elden Johnson submitted a C14 sample for radiocarbon dating that had previously been collected by Wilford during the 1947 excavation (Table 1). This radiocarbon assay is the most questionable sample due to the nature of its collection. Johnson describes the sample as being "scattered" through the third level of an excavation unit, and having no association with any feature. Due to the nature of the collected sample and also the late returned radiocarbon assay, 160 ± 85, the validity of this date has been questioned. Wilford's field notes recorded the excavation level where the wood charcoal sample was recovered as existing below the plow zone, though it is important to note that the Vosburg site has been plowed and used for agriculture for decades. Johnson proposes that modern agricultural activities might have contaminated the sample, introducing modern material to the sample. Johnson also admits that it is possible the late radiocarbon date does reflect occupation of the Vosburg site, though the lack of European trade goods makes the timing of this occupation "improbable." Dobbs (1984) also suggests the sample might have been contaminated in the lab during its seventeen years on a shelf or in

Table 2: Blue Earth Radiocarbon Dates

Lab ID#	Site	Excavation	Feature/XU	Depth	Type/Species	14C age	±	1σ low	1σ high	2σ low	2σ high	Reference
Beta 410961	21BE68	1982 Shane	2	NA	*Zea mays*	610	30	1302	1328	1295	1404	Schirmer 2015
I 795	21FA02	1947 Wilford	XU	L3	Wood Charcoal	160	85	1720	1786	1631	n/a	Johnson 1964
GX 7032	21FA02	1979 Gibbon	7	NA	Wood Charcoal	585	125	1280	1440	1184	1527	Shane 1981
GX 7033	21FA02	1979 Gibbon	13	NA	Wood Charcoal	525	125	1288	1481	1252	1648	Shane 1981
UG 4123	21FA02	1979 Gibbon	20	L3	Wood charcoal	835	80	1152	1270	1030	1283	Dobbs 1984
UG 4124	21FA02	1979 Gibbon	28	L2	Wood Charcoal	1035	65	942	1083	868	1162	Dobbs 1984
GX 6780	21FA02	1979 Gibbon	57	NA	Wood Charcoal	670	140	1218	1418	1026	1485	Shane 1981
GX 6781	21FA02	1979 Gibbon	59	NA	Wood Charcoal	675	140	1215	1420	1024	1478	Shane 1981
GX 6782	21FA02	1979 Gibbon	65	NA	Wood Charcoal	345	140	1422	1670	1391	1710	Shane 1981
Beta 410958	21FA02	1979 Gibbon	66	48-58	*Zea mays*	550	30	1394	1420	1386	1434	Schirmer 2015
Beta 410959	21FA02	2012 Schirmer	1	50-55	*Zea mays*	600	30	1307	1399	1296	1409	Schirmer 2015
Beta 410960	21FA02	2012 Schirmer	5	65-70	*Zea mays*	610	30	1302	1396	1295	1404	Schirmer 2015

the field during collection. Dobbs asserts this date should not be ignored simply due to its outlying nature.

Using the MASCA curve, and plotting the date's range using a 95% confidence, Dobbs applied a corrected calendric date for this sample at A.D. 1760 -1660 ± 95. This corrected date using the MASCA curve bumps this sample's returned date to a little later than Johnson's original analysis, but still much later than expected for a site indicating no historical artifacts.

In 2016, Schirmer published new calibrations for the radiocarbon dates taken at Vosburg, including the sample submitted by Johnson in 1964. Schirmer reported that the OxCal 4.2 program calibrated the Johnson date to a 1σ at 68%, and a 2σ, at 95% confidence. Schirmer's 1σ for the Johnson date rangers from AD 1720-1786, while the 2σ was only given one assay at 1631 (see Table 2).

GX 6780

This sample was during in 1979 by Shane during the second session of the 1979 field school by the Science Museum. This sample was found in Feature 57 at an unknown depth. A shell tempered pottery segment was also recovered from this feature, but its depth of discovery is also unknown. This segment had a drawn up, everted rim decorated on the interior with four tiers of chevrons. Around the segment's strap handle, the shoulder was decorated by oblique lines.

The 14C year returned by this sample is 670 ± 140. Dobbs' (1984) applied MASCA curve corrected this date at a 95% confidence range of A.D. 1260 – 1290 ± 150. The date calibrated using the OxCal 4.2 program by Schirmer places this sample's date between A.D. 1218 – 1418 with a 68% confidence, and between A.D. 1026 – 1485 with a 95% confidence.

GX-6781

This sample was wood charcoal recovered by Shane during the 1979 Vosburg excavation and was taken from Feature 59 from an unknown depth. A shell tempered pottery segment was also recovered from this feature and analyzed by Neumann (2017), but its depth of discovery is not recorded. This

segment has a drawn up, vertical rim with interior decorations of four tiers of chevrons bordered to the right by four horizontal lines.

The 14C year returned by this sample is 675 ± 140 and is strikingly similar to the GX 6780 assay. Dobbs (1984) corrected calendric date using the MASCA curve is A.D. 1260 – 1290 ± 150. Using the OxCal 4.2 program, Schirmer calibrated this assay with 68% confidence to A.D. 1215 – 1420, and with a 95% confidence to A.D. 1024 – 1478.

GX-6782

This sample was wood charcoal recovered in Feature 65 at an unknown depth by Shane during the 1979 Vosburg excavation. Neumann analyzed a shell tempered pottery segment which was also recovered from this feature, but its depth of recovery is not recorded. This pottery segment has interior lip notching and a shoulder with vertical trailed line decorations bordered by punctates, along with a strap handle decorated by vertical trailed lines.

The 14C year returned by this sample is 345 ± 140, the youngest sample recovered by Shane. Appling the MASCA curve for calendric collection, Dobbs (1984) calibrated this assay to A.D. 1470 – 1510 ± 150. Schirmer then applied the OxCal 4.2 program to calibrate this assay with 68% confidence to A.D. 1422 – 1670 and with 95% confidence to A.D. 1391 – 1710.

GX-7032

This sample was wood charcoal recovered in Feature 7 at an unknown depth by Shane in 1979. A shell tempered pottery segment was also recovered from this feature but from an unrecorded depth (Figure 4 and 5).

The C14 year returned by this sample was 585 ±125, which Dobbs (1984) corrected using the MASCA curve to A.D. 1350 ±135. Schirmer later corrected this date applying the OxCal 4.2 program, which placed the sample with a 68% confidence between A.D. 1280 – 1440, and with a 95% confidence between A.D. 1184 – 1527.

Figure 4: Exterior Side of Pottery Rim Found in Feature 7

Figure 5: Interior Side of Pottery Rim Found in Feature 7

GX-7033

This sample was wood charcoal recovered from Feature 13 at an unknown depth. A shell tempered pottery segment was also recovered from this depth (Figure 6), but from an unrecorded depth.

Figure 6: Exterior Side of Pottery Shoulder Found in Feature 13

The C14 year returned by this sample was 525 ± 125. Dobbs (1984) corrected this assay using the MASCA curve to A.D. 1390 ± 135. Using the OxCal 4.2 program, Schirmer later corrected this assay with 68% confidence to A.D. 1288 – 1481, and with a 95% confidence to A.D. 1252 – 1648.

UGa-4123

This sample was wood charcoal recovered by Dobbs from level 3 of Feature 28 during the first 1979 Vosburg field school. Currently, there is no known pottery associated with this C14 assay.

The C14 year returned by this sample was 835 ± 80, which Dobbs (1984) corrected, using the MASCA curve, to A.D. 1110 – 1170 ± 90. Schirmer has applied the OxCal 4.2 program to this assay for calibrated calendric dates, with a 68% confidence showing the dates between A.D. 1152 – 1270, and with a 95% confidence showing the dates between A.D. 1030 – 1283.

UGa-4124

This sample was wood charcoal recovered by Dobbs from level 2 of Feature 20 during the first 1979 Vosburg field school. Currently, there is no known pottery associated with this C14 assay.

The C14 year returned by this sample was 1035 ± 65, the oldest date collected from the Vosburg site. Dobbs (1984) applied the MASCA curve to this assay for a corrected calendric date between A.D. 950 ± 75. Schirmer later applied the OxCal 4.2 program to further correct this assay, resulting in a 68% confidence that the sample falls between A.D. 942 – 1083, and a 95% confidence that the sample falls between A.D. 868 and 1162.

Beta 410958

Unlike the previous C14 samples submitted by Johnson, Shane, and Dobbs, this sample recovered from the 1979 excavation was not wood, but *Zea mays*. There is no associated pottery for this sample. The carbonized maize was found in Feature 66 between 48 and 58 centimeters.

This sample was submitted by Schirmer which resulted in a C14 year of 550 ± 30. Using the OxCal 4.2 program, Schirmer calibrated this sample to the calendric years with 68% confidence between A.D. 1394 – 1420, and with a 95% confidence between A.D. 1386 – 1434.

Beta 410959

This sample was a maize kernel recovered by Schirmer in Feature 1, between 50 and 55 centimeters. Shell tempered pottery was recovered throughout this feature, but a shell tempered segment was also recovered from the same level as the maize C14 sample. This pottery segment displays an undecorated strap handle, with a shoulder decorated by parallel horizontal trailed lines with a punctate border, along with tool impressions along the interior of the rim (Figure 7 and 8).

The C14 year returned by this sample was 600 ± 30. Schirmer applied the OxCal 4.2 program to calibrate this date with 68% confidence between A.D. 1307 – 1399, and with a 95% confidence between A.D. 1296 -1409.

Figure 7: Exterior of Pottery Segment Recovered in Feature 1 (2012)

Figure 8: Profile of Pottery Segment Recovered in Feature 1 (2012)

Beta 410960

This sample was a maize kernel recovered by Schirmer in Feature 5, between 65 and 70 centimeters. Shell tempered pottery was recovered from throughout this feature, but a decorated shell tempered segment was also recovered from the same level as the C14 maize sample. This pottery segment has a shoulder decorated by oblique, trailed lines, with a tool impressed decorations along the interior of the lip (Figure 9).

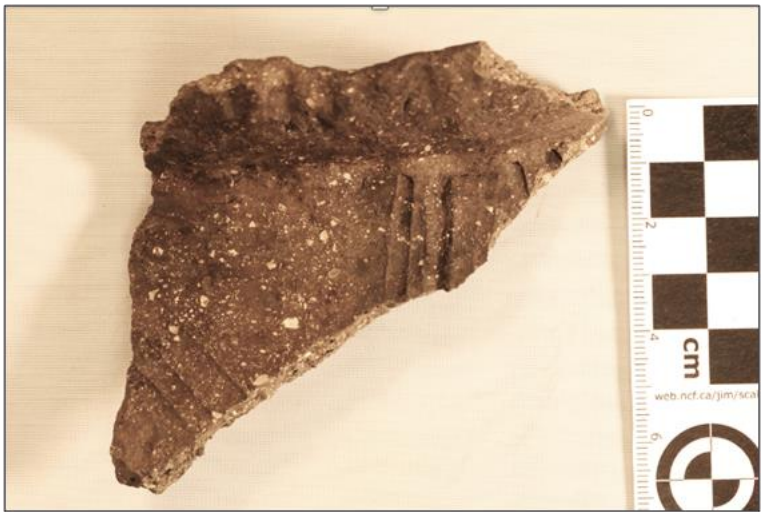


Figure 9: Exterior of Pottery Segment Recovered in Feature 5 (2012)

The C14 year returned by this sample was 610 ± 30, strikingly similar to the C14 assay returned by the other sample recovered by Schirmer (Beta 410959). Schirmer applied the OxCall 4.2 Program calibrated this date with 68% between A.D. 1302 – 1396, and with a 95% confidence between A.D. 1295 – 1404.

Beta 410961

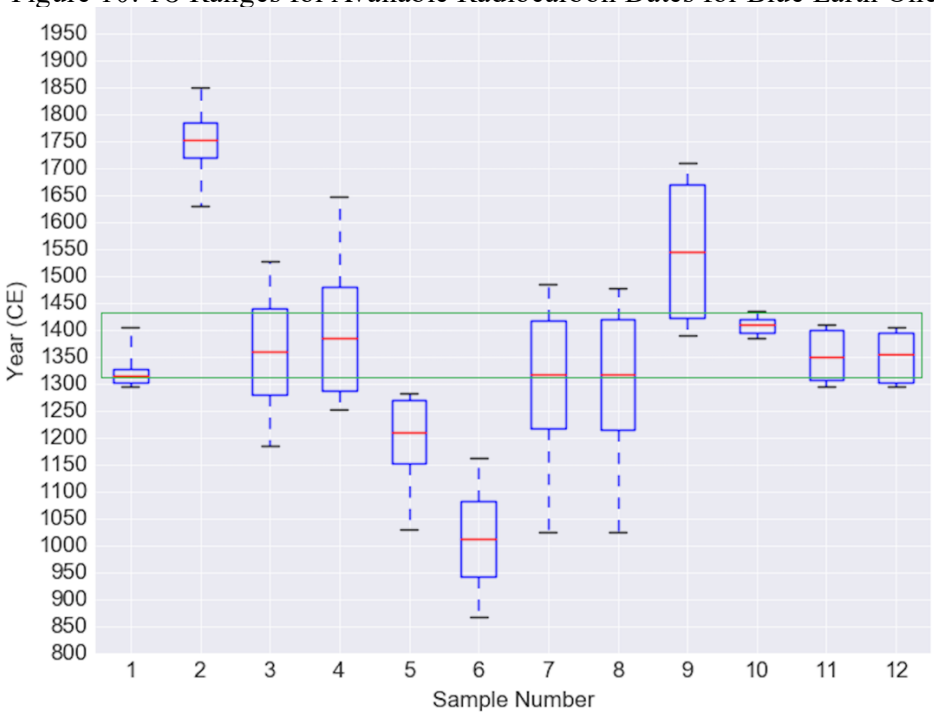
This sample was a maize kernel recovered by Shane at 21BE68 in 1982 but was submitted by Schirmer for C14 dating. This carbonized maize was found in Feature 2 at 21BE68 from and unknown depth. There is no pottery associated with this C14 sample.

The C14 year returned by this sample was 610 ± 30. Schirmer applied the OxCal 4.2 program to calibrate this date, establishing a 68% confidence range between A.D. 1302 – 1328, and a 95% confidence range between A.D. 1295 – 1404.

Analysis of Blue Earth Radiocarbon Dates

As Dobbs mentioned in his interpretation of the available radiocarbon dates for his 1984 dissertation, the assays given for the 14C samples from Blue Earth sites can be read liberally or conservatively. When examining the 1σ dates for all the Blue Earth C14 samples, it is possible to believe the Center Creek locality was inhabited continuously in some manner for more than 800 years. While it is important to utilize both the 1σ and 2σ assays for 14C radiocarbon dates, this research focuses on the 1σ assays as they offer the tightest temporal windows for interpretation. The earliest reading of the 1σ for UGa 4124 is at AD 942, and the latest reading of the 1σ for I-795 (collected by Wilford and submitted by Johnson) is AD 1786. While the I-795 sample has been rightfully called into question, the latest 1σ assay for GX 6782 is as late as AD 1670. It is difficult to interpret the

Figure 10: 1σ Ranges for Available Radiocarbon Dates for Blue Earth Oneota



14C Lab Numbers

1 = Beta 410961	5 = UGa 4123	9 = GX 6782
2 = I-795	6 = UGa 4124	10 = Beta 410958
3 = GX 7032	7 = GX 6780	11 = Beta 410959
4 = GX 7033	8 = GX 6781	12 = Beta 410960

radiocarbon dates from Blue Earth Oneota sites and not come to the conclusion that Vosburg was occupied over the course of at least several centuries. The question remains, how intense were these occupations? And were these occupations stable and continuous? Or sporadic and disconnected?

The most conservative reading of the available C14 assays, while examining the 1σ results of each radiocarbon date, is that Vosburg was almost certainly occupied during the 14th century, and possibly throughout. The radiocarbon readings from Schirmer's most recently submitted samples, from Beta 410959 and Beta 410960, are almost identical. Their 1σ results place their range of occupation basically spanning the 14th century. The Beta 410961 sample, the third sample of maize submitted by Schirmer from the Vosburg site, has a 1σ that spans the first couple decades of the 14th century, spanning from AD 1302 – 1328. Samples submitted by Dobbs also support the idea of a 14th century occupation. Samples GX 6780 and GX 6781 also have almost identical assays, spanning from the early 13th century and terminating in the early 15th century. While these 1σ results include large windows of time, they could represent a 14th century occupation similar to Schirmer's results, or they represent occupation of Vosburg during the 13th century possibly leading into the 14th century occupation. The latest readings of their 1σ range could also imply these two samples represent occupation of Vosburg into the first couple decades of the 15th century.

While these radiocarbon dates strongly imply a 14th century occupation, other samples support the idea of an earlier occupation during the 13th century, and possibly earlier, leading into the occupation during the 14th century. The 1σ for the UGa4123 assay spans from the middle of the 12th century into the later part of the 13th, overlapping with samples GX 6780 and GX 6781, the samples previously mentioned as possibly leading into the later 14th century occupation.

The UGa 4124 reading can represent an even earlier occupation, with its 1σ spanning from the early 10th century into the later part of the 11th century. The 1σ for this assay does not overlap with any other C14 result, and yet it may still possibly represent a comparatively early occupation of the Vosburg site by Oneota peoples. Due to the overlapping nature of the other 14C samples (Figure 10), excluding I-795, it is not exactly a very liberal interpretation to believe Vosburg was in some way occupied continuously starting sometime in the 13th century, possibly even earlier, and onward through the 14th century. The GXa 6782 sample, with a 1σ reading that spans from the early 15th century all the way into the late 16th century, might represent the later part of the Vosburg occupation, post 14th century. This sample might represent the later part of the Vosburg occupation, post 14th century. Whether or not GXa 6782 represents an occupation well past the 14th century, only future radiocarbon dates can help understand the answer to the question.

It is of interest to note that the radiocarbon date submitted by Schirmer from Willow Creek (Beta 410958), the one recent Blue Earth C14 sample not recovered from within the Center Creek locality, overlaps with the other C14 samples of maize submitted by Schirmer from the Vosburg site. The direct implication is that at least some sites within the Willow Creek locality were inhabited simultaneously or almost so with Center Creek sites. The 1σ of the Willow Creek assay submitted from Schirmer overlaps with seven of the other radiocarbon dates collected from Vosburg, including the two samples of maize already mentioned. Again, this supports the notion that Blue Earth sites were not only occupied during the 14th century, but onward into the 15th century as well.

Chapter 5: Results

Pit Feature Analysis

To examine depositional patterns between excavation levels within Feature 1 and 5, this project applied different methods of data management. Artifact ubiquity analysis is applied to discover the presence of any patterns in the vertical or horizontal distribution of artifactual material. Examining artifact presence by weight and count helps to show the nature of the deposits. Having the weight and count of artifactual material for each level shows if certain artifacts are being deposited in small or large amounts while also showing if the deposited artifacts are of significant size. For example, a level with a high count of lithic artifacts but with a low total weight of lithics could imply the artifacts being deposited are late-stage lithic reduction debitage. Tables within this chapter which show the total count and weight for artifact categories include all artifacts found within that specific feature quarter's confines. Tables within this chapter which show the total count and weight for lithic raw materials refer specifically to raw materials used for chipped stone tools, e.g., not metamorphic stone used for ground stone tools.

Feature 1 Northeast Quarter Analysis

In Table 3, artifact ubiquity shows a clear boundary can be identified of artifact ubiquity at 65 centimeters. Every category of artifact is present throughout the northeast quarter of the feature from the first level at 25 centimeters down to 65 centimeters. Below 65 centimeters in the northeast quarter, no artifacts are present except pottery between 80 and 85 centimeters.

Table 3

Feature 1 NE Artifact Ubiquity			
Level	Pottery	Lithic	Zoo
25-30	1	1	1
30-35	1	1	1
35-40	1	1	1
40-45	1	1	1
45-50	1	1	1
50-55	1	1	1
55-60	1	1	1
60-65	1	1	1
65-70			
70-75			
75-80			
80-85	1		
85-90			
90-95			
Total	9/14	8/14	8/14
Presence	64%	57%	57%

In Table 4, the complex nature of the northeast quarter can be clearly seen. The largest concentration of zoological artifacts is between 45 and 50 centimeters, where there is 19.936 grams of recovered material, which is more than double the weight of zoological material found in any other five-centimeter level throughout the quarter. Both the level above and below 45-50 centimeters also have larger amounts of zoological material by weight than the remaining five-centimeter levels, showing a concentration that is actually around 15 centimeters thick.

Table 4

Feature 1 NE Artifact Presence by Weight (g)			
Level	Pottery	Lithic	Zoo
25-30	6.105	5.827	6.25
30-35	22.693	16.08	3.603
35-40	50.481	531.513	1.935
40-45	41.469	21.586	8.455
45-50	25.458	92.538	19.936
50-55	49.246	67.011	9.636
55-60	77.831	44.401	1.468
60-65	6.509	0.789	6.542
65-70			
70-75			
75-80			
80-85	2.153		
85-90			
90-95			
Total	281.945	779.745	57.852
Presence	25.18%	69.65%	5.17%

The concentration of lithic material does not directly match the concentration of zoological material by weight. By a massive amount, the most lithic material is found between 35-40 centimeters, more than five times the amount of material by weight found in any other level. The levels above and below 35-40 centimeters are markedly less, with only 16.08 grams of lithics in the 30-35 centimeters level, and only 21.586 grams of lithics in the 40-45 centimeters level. With the five centimeters between 35-40 having 531.513 grams of lithic material, it is clear that the concentration of lithics does not span more than five-centimeter.

The five centimeters between 55-60 centimeters represents the most pottery by weight, with 77.831 grams of pottery recovered. While the level above this concentration has 49.246 grams of pottery, the five-centimeter level below the concentration at 55-60 centimeters only has 6.509 grams of pottery. In other words, there is a sudden decline in pottery presence by weight after 60 centimeters. Pottery is again recovered at 80-85 centimeters, but only in a small portion at 2.153 grams after fifteen centimeters of absence.

Artifact presence by count in Table 5 tells a different story than artifact presence by weight in Table 4. It is clear from artifact count in the northeast quarter of Feature 1 that the concentration of zoological material does indeed span 15 centimeters between 40-55 centimeters. While zoological material is concentrated heavily by weight in only five centimeters between 45-50 centimeters, by count the level above and below are much more comparable, each having more than 100 zoological artifacts. The 35-40 centimeter level only has 39 zoological artifacts, while the 55-60 centimeter level only has 37. As mentioned, each of the three five-centimeter levels in between have more than 100 zoological artifacts. Zoological artifact count vs weight discrepancies can be explained as artifacts with higher counts yet lower weights indicate a high presence of artifacts that do not have much weight. While the zoological material recovered from 40-45 centimeters and 50-55 centimeters is nearly comparable in count to the zoological material recovered 45-50 centimeters, in weight they are drastically smaller, less than half the weight of zoological artifacts in 45-50 centimeters. This discrepancy implies that the zoological artifacts in 40-45 centimeters and 50-55 centimeters are numerous, but much less in weight compared to those recovered in 45-50 centimeters. By count, lithics are more concentrated between 50-55 centimeters, with 233 lithic artifacts recovered, compared to 45-50 centimeters, which had the most lithic concentration by weight, but with only 158 lithic artifacts. This discrepancy reflects the differences of the size of artifacts recovered. While 50-55 centimeters had the most artifacts by count, their weight was less than the level above, implying smaller artifacts were recovered in more numbers at this level.

Table 5

Feature 1 NE Artifact Presence by Count			
Level	Pottery	Lithic	Zoo
25-30	39	26	23
30-35	62	36	46
35-40	91	87	39
40-45	176	97	102
45-50	108	158	149
50-55	83	233	142
55-60	56	35	37
60-65	21	9	34
65-70			
70-75			
75-80			
80-85	1		
85-90			
90-95			
Total	637	681	572
Presence	33.70%	36.03%	30.26%

While no strong concentration of pottery can be seen by weight throughout the northeast quarter of Feature 1, it is clear a concentration of pottery exists when examining the pottery by artifact count. A clear concentration of pottery exists in the ten centimeters between 40-50 centimeters. Once again, these pieces of pottery might have been numerous, but their total weight implies they were smaller sherds with less weight.

Lithic raw material ubiquity is presented in Table 6. While no lithic material was recovered after 65 centimeters, both Prairie du Chien and Grand Meadow were found in each five-centimeter level from 25-65 centimeters. The same cannot be said for Cedar Valley or Hixton. Cedar Valley can only be found in three of the levels, while Hixton is found in five. Both Cedar Valley and Hixton can be found between 30-35 centimeters, and again between 40-50 centimeters. In other words, in the northeast quarter of Feature 1, whatever level contains Cedar Valley also contains Hixton.

Table 6 shows a heavy favoring of Prairie du Chien lithic material compared to the other three raw materials. By weight, Prairie du Chien is markedly higher in each level than any of the other raw materials, making up more than 88% of the weight of lithic material recovered throughout the entire

northeast quarter. A concentration of Prairie du Chien by weight exists between 45-50 centimeters, although the two levels below this concentration are the next two heaviest levels of Prairie du Chien in the quarter, so the true concentration of Prairie du Chien by weight might better be described as existing between 45-60 centimeters.

Table 6

Feature 1 NE Lithic Raw Material Ubiquity				
Level	PDC	Grand Meadow	Cedar Valley	Hixton
25-30	1	1		
30-35	1	1	1	1
35-40	1	1		
40-45	1	1	1	1
45-50	1	1	1	1
50-55	1	1		1
55-60	1	1		
60-65	1	1		1
65-70				
70-75				
75-80				
80-85				
85-90				
90-95				
Total	8/14	8/14	3/14	5/14
Presence	57%	57%	21%	36%

Grand Meadow by weight also has a concentration, and again it can be argued that this concentration spans more than one five-centimeter level. While 30-35 centimeters has 11.858 grams of Grand Meadow, more than double any other level's weight of that raw material, the next level below, although a marked decrease, is still a jump more than the remaining levels with 4.525 grams. The concentration of Grand Meadow therefore exists between 30-40 centimeters, five-centimeter above the concentration of Prairie du Chien between the 45-55 centimeters. Grand Meadow by weight makes up only 11.23% of the lithic material recovered throughout the northeast quarter of Feature 1.

Both Cedar Valley and Hixton only represent a small portion of the raw material recovered by weight in the northeast quarter Feature 1. Only .32% of the total 270.8 grams of raw material recovered in

this quarter is Cedar Valley, while only .24% is Hixton. This lack of Cedar Valley and Hixton shows an obvious favoring for Prairie du Chien and Grand Meadow.

Both Prairie du Chien and Grand Meadow have clear concentrations in weight throughout this quarter of Feature 1, but in different parts of the feature profile (Table 7). Prairie du Chien artifacts are concentrated around 45-60 centimeters. Starting at 30-35 centimeters with 3.426 grams, each level continuing down to 50 centimeters has heavier amounts of Prairie du Chien artifacts, climaxing at 86.145 grams. The next two five-centimeter levels below 50 centimeters have high amounts of Prairie du Chien by weight which decline each level. By weight, Prairie du Chien artifacts make up 88.21% of the lithic artifacts recovered in this quarter of Feature 1.

Table 7

Feature 1 NE Lithic Raw Material Presence by Weight (g)				
Level	PDC	Grand Meadow	Cedar Valley	Hixton
25-30	4.523	1.304		
30-35	3.426	11.858	0.761	0.035
35-40	17.988	4.525		
40-45	19.561	1.569	0.009	0.447
45-50	86.145	6.2	0.101	0.092
50-55	64.003	2.985		0.023
55-60	42.441	1.96		
60-65	0.793	0.001		0.05
65-70				
70-75				
75-80				
80-85				
85-90				
90-95				
Total	238.88	30.402	0.871	0.647
Presence	88.21%	11.23%	0.32%	0.24%

Grand Meadow artifacts are concentrated by weight at the top of the feature profile between 30-40 centimeters, as opposed to the concentration of Prairie du Chien artifacts in the middle of the profile. Between 30-35 centimeters of this quarter there is 11.858 grams of Grand Meadow artifacts, while between 35-40 centimeters there is 4.525 grams of Grand Meadow artifacts. The five-centimeter level with the next highest amount of Grand Meadow artifacts by weight is 50-55 centimeters, which is 2.985

grams. Compared to the Prairie du Chien artifacts recovered in this quarter, the Grand Meadow artifacts are less concentrated, and more dispersed throughout the profile. Of all the lithic artifacts recovered in this quarter, Grand Meadow artifacts make up only 11.23% by weight.

Cedar Valley and Hixton are poorly represented within this profile. Neither material has more than .8 grams of artifacts within a 5-centimeter level. Each makes up less than half a percent of the lithics recovered in this quarter by weight.

The artifact count of lithic raw materials in the northeast quarter of Feature 1 shows a clear concentration of Prairie du Chien by count between 50-55 centimeters, with 205 artifacts of Prairie du Chien (Table 8), which supports the idea that the concentration of Prairie du Chien artifacts spans the 10 centimeters between 45-55 centimeters, as by weight the largest concentration is between 45-50 centimeters (Table 7). In total by count, Prairie du Chien makes up only 78.24% of the total lithic artifacts recovered in this quarter of Feature 1, as compared to the 88.21% of the total weight of lithic artifacts. The presence of Grand Meadow by weight and by count also has discrepancies, with 20.15% of the total amount of lithic artifacts being Grand Meadow, while only 11.23% of the lithic artifacts recovered were of Grand Meadow by weight. The discrepancies between the weight and count ratios for Prairie du Chien and Grand Meadow clarify the nature of each within the feature's northeast quarter. The higher percentage of presence by total artifact count for Grand Meadow than for its percentage of presence by weight shows artifacts of Grand Meadow in this quarter were numerous yet small. The opposite can be said for Prairie du Chien artifacts, which have a higher percentage of presence by weight than presence by count, which implies the Prairie du Chien artifacts were heavier and less numerous than the artifact of other raw materials. This is interesting, as the five-centimeter level with the highest weight of Grand Meadow at 30-35 centimeters (11.858 grams) has a comparatively small amount of Grand Meadow artifacts, with only eight. The implication is this level had only a few, but comparatively heavy Grand Meadow artifacts.

Table 8

Feature 1 NE Lithic Raw Material Presence by Count				
Level	PDC	Grand Meadow	Cedar Valley	Hixton
25-30	16	10		
30-35	26	8	1	1
35-40	51	35		
40-45	65	28	1	3
45-50	132	23	2	1
50-55	205	27		1
55-60	30	5		
60-65	7	1		1
65-70				
70-75				
75-80				
80-85				
85-90				
90-95				
Total	532	137	4	7
Presence	78.24%	20.15%	0.59%	1.03%

The high ubiquity of heat-treated Prairie du Chien is clear in Table 9. Prairie du Chien with cortex is also present throughout most of the five-centimeter levels that contained lithic artifacts. While rind is present, it is only found in two of the eight levels that contained lithic material for this quarter. Lithic tools of Prairie du Chien are present within five of the eight levels that contained lithic material, but these levels with Prairie du Chien tools present are concentrated between 30-55 centimeters, with no Prairie du Chien tools existing outside of these levels.

Table 9

Feature 1 NE Prairie du Chien with Heat-treatment, Cortex, and Rind Ubiquity			
Level	HT	Cortex	Rind
25-30	1	1	
30-35	1		
35-40	1	1	
40-45	1	1	
45-50	1	1	1
50-55	1	1	
55-60	1	1	
60-65	1	1	1
65-70			
70-75			
75-80			
80-85			
85-90			
90-95			
Total	8/14	7/14	2/14
Presence	57%	41%	14%

The presence of Prairie du Chien material by weight shows a heavy concentration of heat-treated material between 45-60 centimeters (Table 10). Interestingly, the same can be said for Prairie du Chien material with cortex, which, by weight, is heavily concentrated in the same 15 centimeters. Both Prairie du Chien material with signs of heat-treatment and cortex have sudden declines after 60 centimeters. Between 55-60 centimeters, there is 36.523 grams of heat-treated material, while in the next 5 centimeters level there is only .64g. Between 55-60 centimeters, there is 36.046 grams of Prairie du Chien material with cortex, while in the next 5-centimeter level there is only .0129 grams. Of all the Prairie du Chien material found in this quarter of Feature 1, a majority of the material by weight is heat-treated at 74.25%. By weight, a majority of Prairie du Chien material found in this quarter also had cortex, at 62.58%. Less than 2% had signs of rind.

Table 10

Feature 1 NE Prairie du Chien with Heat-treatment, Cortex, and Rind Presence by Weight (g)				
Level	HT	Cortex	Rind	Total
25-30	4.033	3.477		4.523
30-35	2.963			3.426
35-40	13.24	10.39		17.988
40-45	6.886	7.187		19.561
45-50	73.422	68.477	2.65	86.145
50-55	39.625	23.754		64.003
55-60	36.523	36.046		42.441
60-65	0.64	0.129	0.061	0.739
65-70				
70-75				
75-80				
80-85				
85-90				
90-95				
Total	177.332	149.46	2.711	238.826
Presence	74.25%	62.58	1.14%	

The presence of Prairie du Chien material by count also shows a concentration of heat-treatment between 45-60 centimeters (Table 11), although the concentration of material with cortex, when presented by count instead of weight, is only between 45-55 centimeters (Table 10). By count, only 47.74% of the Prairie du Chien material found in this quarter is heat-treated, as opposed to 74.25% when considered by weight. A similar trend can be seen with the Prairie du Chien material with cortex. By count, only 16.91% of the Prairie du Chien material recovered from this quarter of Feature 1 has cortex, as opposed to 62.58% when considered by weight. These discrepancies imply that Prairie du Chien material with cortex and heat-treatment tend to be larger, heavier artifacts, as opposed to the Prairie du Chien material that shows no sign of cortex or heat-treatment.

Table 11

Feature 1 NE Prairie du Chien with Heat-treatment, Cortex, and Rind Presence by Count				
Level	HT	Cortex	Rind	Total
25-30	11	1		16
30-35	21			26
35-40	22	6		51
40-45	26	9		65
45-50	64	32	1	132
50-55	85	33		205
55-60	20	8		30
60-65	5	1	1	7
65-70				
70-75				
75-80				
80-85				
85-90				
90-95				
Total	254	90	2	532
Presence	47.74%	16.91%	0.38%	

Grand Meadow with cortex and heat-treatment are present within six of the eight levels of this quarter that contained Grand Meadow (Table 12). Only two levels contained Grand Meadow artifacts with rind. Between 40-60 centimeters there are Grand Meadow artifacts that have both cortex and heat-treatment. Heat-treatment and cortex are both also present in the first level between 25-30 centimeters. Table 12 shows that where there are usually heat-treated artifacts of Grand Meadow, there are also Grand Meadow artifacts with cortex.

Table 12

Feature 1 NE Grand Meadow with Heat-treatment, Cortex, and Rind Ubiquity			
Level	HT	Cortex	Rind
25-30	1	1	
30-35		1	
35-40			
40-45	1	1	1
45-50	1	1	
50-55	1	1	1
55-60	1	1	
60-65	1		
65-70			
70-75			
75-80			
80-85			
Total	6/12	6/12	2/12
Presence	50%	50%	17%

The presence of Grand Meadow artifacts by weight shows that of all the Grand Meadow artifacts found in this quarter of Feature 1, 52.09% of their weight is made up of artifacts with cortex (Table 13). Of the 15.835 grams of Grand Meadow artifacts with cortex found in this quarter, 10.496 grams was found at the top of the feature between 30-35 centimeters. Of all the Grand Meadow artifacts in this quarter, only 15.35% of their weight is made of artifacts with heat-treatment. More than half of the total amount of heat-treated Grand Meadow by weight was found in the middle of the feature between 45-50 centimeters. Only 4.08% of the total weight has rind.

Table 13

Feature 1 NE Grand Meadow with Heat-treatment, Cortex, and Rind Presence by Weight (g)				
Level	HT	Cortex	Rind	Total
25-30	0.53	0.025		1.304
30-35		10.496		11.858
35-40				4.525
40-45	0.379	0.388	0.07	1.569
45-50	2.866	1.63		6.2
50-55	0.799	1.582	1.171	2.985
55-60	0.092	1.714		1.96
60-65	0.001			0.001
65-70				
70-75				
75-80				
80-85				
85-90				
90-95				
Total	4.667	15.835	1.241	30.402
Presence	15.35%	52.09%	4.08%	

Observing the presence of Grand Meadow artifacts by count helps to understand the nature of Grand Meadow artifacts throughout this quarter of Feature 1. In total, there are only 137 artifacts of Grand Meadow throughout the quarter (Table 14). The level with the most Grand Meadow artifacts, 35-40 centimeters, has no lithic material with heat-treatment, cortex, or rind. The level that has the most heat-treated artifacts, 50-55 centimeters, also is the same level that has the most artifacts with cortex. Although there are only 26 Grand Meadow artifacts with heat-treatment throughout the entire northeast quarter of Feature 1, there is a concentration between 40-55 centimeters, where there are 23 heat-treated Grand Meadow artifacts in just 15 centimeters. Similarly, of the total 12 Grand Meadow artifacts in this quarter of Feature 1, nine of them were recovered between 40-55 centimeters. The ubiquity of Grand Meadow artifacts by count helps support the idea that the presence of heat-treatment somehow correlates with the presence of cortex.

Table 14

Feature 1 NE Grand Meadow with Heat-treatment, Cortex, and Rind Presence by Count				
Level	HT	Cortex	Rind	Total
25-30	1	1		10
30-35		1		8
35-40				35
40-45	6	3	2	28
45-50	8	2		23
50-55	9	4	1	27
55-60	1	1		5
60-65	1			1
65-70				
70-75				
75-80				
80-85				
85-90				
90-95				
Total	26	12	3	137
Presence	18.98%	8.76%	2.19%	

Of all the Grand Meadow artifacts recovered in this quarter, only 8.76% had cortex. By weight, 52.09% of the Grand Meadow artifacts in this quarter had cortex. This discrepancy implies the artifacts with cortex were larger, heavier artifacts. Less discrepancy exists between the count of heat-treated Grand Meadow artifacts and the total weight of Grand Meadow artifacts throughout the quarter. Of all the Grand Meadow artifacts found in this quarter, only 18.98% had heat-treatment. By weight, 15.35% of the Grand Meadow artifacts in this quarter had heat-treatment. The similarity between these two ratios implies the Grand Meadow artifacts with heat-treatment were of a similar size and weight compared to the other lithic artifacts recovered in this quarter.

Only 2.19% of all the Grand Meadow artifacts in this quarter had rind. Although there were only three artifacts recovered with rind of the total 137 Grand Meadow artifacts in this quarter, by weight they make up 4.08%. The higher presence by weight compared to presence by count implies these three artifacts were larger and heavier than the other lithic material recovered in this quarter.

Feature 1 Northwest Quarter Analysis

Pottery, lithics, and zoological artifacts are all present within each level of this quarter, from 25 centimeters to the bottom of the feature at 95 centimeters (Table 15). This is a drastic difference from the northeast quarter, where artifact presence suddenly disappears after 65 centimeters. Observing the artifact presence of this quarter shows artifacts were more concentrated at lowers depths below 65 centimeters in the northwest quarter than they were in the northeast quarter of the same feature.

Table 15

Feature 1 NW Artifact Ubiquity			
Level	Pottery	Lithic	Zoo
25-30	1	1	1
30-35	1	1	1
35-40	1	1	1
40-45	1	1	1
45-50	1	1	1
50-55	1	1	1
55-60	1	1	1
60-65	1	1	1
65-70	1	1	1
70-75	1	1	1
75-80	1	1	1
80-85	1	1	1
85-90	1	1	1
90-95	1	1	1
Total	14/14	14/14	14/14
Presence	100%	100%	100%

Artifact presence by weight shows heavy concentrations of all three categories of artifacts. By weight, pottery artifacts are highly concentrated between 45-60 centimeters (Table 16). The level with the most pottery, 45-50 centimeters, has 199.131 grams of pottery artifacts. This is more than double the next highest amount of pottery by weight in any level. The next two lower levels, from 50-60 centimeters, have the next two highest amounts of pottery by weight, indicating a concentration of pottery artifacts that spans 15 centimeters between 45-60 centimeters.

Table 16

Feature 1 NW Artifact Presence by Weight (g)			
Level	Pottery	Lithic	Zoo
25-30	5.473	3.863	0.347
30-35	16.375	6.076	1.006
35-40	4.9	11.23	0.543
40-45	15.241	12.06	2.43
45-50	199.131	19.775	1.495
50-55	54.234	29.978	9.876
55-60	90.23	93.596	11.576
60-65	31.426	16.996	2.346
65-70	11.336	1.935	6.111
70-75	2.066	1.488	0.811
75-80	32.518	1.202	3.661
80-85	15.488	2.157	1.051
85-90	1.016	1.629	3.311
90-95	0.094	0.054	0.004
Total	479.528	202.039	44.568
Presence	66.04%	27.82%	6.13%

Lithic artifacts appear to be concentrated, when examined by weight, in similar levels of this quarter. The two levels between 50-60 centimeters have the most lithic artifacts by weight, overlapping with the beforementioned concentration of pottery by weight. The same two levels from 50-60 centimeters also represent the highest concentration of zoological artifacts by weight. All three categories of artifacts are concentrated within these two five-centimeter levels.

An important observation is the sudden decrease of lithic artifacts after the concentration from 50-60 centimeters. After 60 centimeters, no level in this quarter has more than 2.2 grams of lithic material. Although most of the weight made by pottery and zoological artifacts exist in the upper and middle levels of the northwest quarter of Feature 1, they do not markedly decline as rapidly in the feature profile as lithic material does after 60 centimeters.

Of all the artifacts found in this quarter, by weight pottery represents 66% of the material found. Zoological artifacts only represent 6.13% of the material found by weight, while 27.82% was lithic. This is an almost direct contrast to the northeast quarter of this same feature, which has the majority of its weight made of lithic material at 69.65%, with pottery only making up 25.18%. More pottery was

deposited into the northwest quarter of Feature 1, while more lithic material was deposited into the northeast quarter. By weight, an almost equal amount of zoological material was deposited between the two quarters.

Examining the artifact presence by count throughout each level by count helps to support the readings made from Table 16. A heavy concentration of each category of artifact exists between 50-60 centimeters (Table 17). Once again, the pottery concentration would fairly be described as spanning 15 centimeters instead of ten centimeters, from 45-60 centimeters. For lithic and zoological artifacts, their concentration is more limited to the ten centimeters between 50-60 centimeters. This ten-centimeter level represents a clear concentration of artifact deposition within the northwest quarter of Feature 1.

Table 17

Feature 1 NW Artifact Presence by Count			
Level	Pottery	Lithic	Zoo
25-30	14	18	5
30-35	17	39	17
35-40	32	41	17
40-45	56	47	41
45-50	97	44	41
50-55	129	107	195
55-60	101	164	165
60-65	55	57	51
65-70	24	7	20
70-75	14	6	13
75-80	26	10	54
80-85	10	5	17
85-90	8	7	10
90-95	2	1	2
Total	585	553	648
Presence	32.75%	30.96%	36.28%

Although the total weight of pottery recovered in this quarter dwarfs the total weight of lithics found, (Table 16: 479.528 grams of pottery vs 202.039 grams of lithics), by count they are much more equal. In the northwest quarter of this feature, 585 pieces of pottery were recovered, while 553 lithic artifacts were documented. This disparity between the weight vs count ratio implies the pottery artifacts

recovered were heavier than the average lithic artifact documented in this quarter. Although there was a similar number of lithic artifacts found compared to pottery artifacts, the weight of pottery found is more than double the weight of lithics found.

Interestingly, zoological artifacts were most represented by count within this quarter. Throughout the northwest profile of Feature 1, 648 zoological artifacts were recovered, only 63 more artifacts than the pottery recovered. The high number of zoological artifacts recovered compared to the low amount of weight contributed to the total sum of artifacts found directly implies the zoological artifacts were consistently small and light compared to the other pottery and lithic artifacts present within the quarter.

Ubiquity analysis of lithic raw materials of this quarter of Feature 1 shows once again a strong presence of Prairie du Chien and Grand Meadow (Table 18). As seen in Table 15, lithic material was found in all 14 levels of this quarter. Of those 14, Prairie du Chien was found in 13, and Grand Meadow was found in 12. Cedar Valley and Hixton appeared in far fewer levels, with Cedar Valley present in only three of the 14 levels, and Hixton present in only five. It is of interest to note that these two less favored materials do not appear below 70 centimeters. Hixton is found in the first four levels, from 25-45 centimeters, and only again appears between 65-70 centimeters, forming a concentration of Hixton material near the top of the feature. Cedar Valley on the other hand exists only between 45-60 centimeters. It can be argued that both of these less favored materials exist in concentrations near the middle and top of the feature.

Table 18

Feature 1 NW Lithic Raw Material Ubiquity				
Level	PDC	Grand Meadow	Cedar Valley	Hixton
25-30	1	1		1
30-35	1	1		1
35-40	1	1		1
40-45	1	1		1
45-50	1	1	1	
50-55	1	1	1	
55-60	1	1	1	
60-65	1	1		
65-70	1	1		1
70-75	1	1		
75-80	1			
80-85	1			
85-90	1	1		
90-95		1		
Total	13/14	12/14	3/14	6/14
Presence	93%	86%	21%	36%

Lithic raw material presence by weight shows a clear concentration of Prairie du Chien between 50-60 centimeters, with 55-60 centimeters containing 90.437 grams of Prairie du Chien, more than triple the weight of any other five-centimeter level (Table 19). The weight of Prairie du Chien material begins to gradually increase from level to level starting at 30 centimeters with 2.27 grams and ending at 60 centimeters with 90.437 grams. After 60-65 centimeters, which has 7.247 grams of Prairie du Chien, the material is present in much lesser amounts throughout the rest of the profile. By weight, Prairie du Chien makes up 86.57% of the total weight of lithic material found in this quarter of Feature 1.

Table 19

Feature 1 NW Lithic Raw Material Presence by Weight (g)				
Level	PDC	Grand Meadow	Cedar Valley	Hixton
25-30	3.078	0.169		0.616
30-35	2.27	3.701		0.105
35-40	9.699	1.467		0.064
40-45	10.726	1.26		0.074
45-50	17.428	2.328	0.019	
50-55	26.542	3.412	0.024	
55-60	90.437	3.152	0.007	
60-65	7.247	8.073		
65-70	0.997	0.848		0.09
70-75	1.386	0.102		
75-80	1.202			
80-85	2.157			
85-90	0.295	1.334		
90-95		0.054		
Total	173.464	25.9	0.05	0.949
Presence	86.57%	12.93%	0.03%	0.47%

Grand Meadow also is more concentrated near the middle of the profile, with 60-65 centimeters having 8.073 grams of Grand Meadow material, more than double the weight of any other level. Interestingly, after this concentration Grand Meadow presence by weight also declines, with no lower level having more than 1.4 grams. Grand Meadow makes up only 12.93% of the total weight of lithic material found in this quarter. While only in small amounts, Cedar Valley is concentrated between 45-60 centimeters while Hixton is concentrated at the top of the feature between 25-45 centimeters.

Examining the presence of raw material by count helps to better support the concentration of Prairie du Chien and Grand Meadow indicated in Table 19. Prairie du Chien count continuously grows between 35-60 centimeters, starting with 21 artifacts between 35-40 centimeters and ending with 149 artifacts between 55-60 centimeters (Table 20). The next level, between 60-65 centimeters has 47 Prairie du Chien artifacts, then no level below this depth has more than ten Prairie du Chien artifacts. By count, Prairie du Chien makes up 74.64% of the lithic artifacts found in this quarter. Compared to the 86.57% of the total weight, the presence by count percentage implies Prairie du Chien artifacts in this quarter are slightly heavier than the other lithic artifacts recovered.

Table 20

Feature 1 NW Lithic Raw Material Presence by Count				
Level	PDC	Grand Meadow	Cedar Valley	Hixton
25-30	11	4		3
30-35	26	10		3
35-40	21	18		2
40-45	29	16		2
45-50	32	11	1	
50-55	71	35	1	
55-60	149	14	1	
60-65	47	9		
65-70	3	3		1
70-75	3	3		
75-80	10			
80-85	5			
85-90	5	2		
90-95		1		
Total	412	126	3	11
Presence	74.64%	22.83%	0.54%	1.99%

By count, the most Grand Meadow artifacts are between 50-55 centimeters, with 35 Grand Meadow artifacts. The level with the heaviest amount of Grand Meadow artifacts, between 60-65 centimeters, only has nine Grand Meadow artifacts. Below 65 centimeters, no level has more than 3 artifacts of Grand Meadow. By count, Grand Meadow makes up 22.83% of the lithic materials recovered in this quarter. Compared to the 86.57% of the total weight, the presence by count percentage implies Grand Meadow artifacts are slightly lighter in weight than the other lithic artifacts recovered in this quarter.

No level in this quarter of Feature 1 has more than a single Cedar Valley artifact. Of the 11 artifacts of Hixton, ten of them are between 25-40 centimeters. Together, Cedar Valley and Hixton make up less than 3% of the lithic raw materials recovered from this quarter.

Ubiquity analysis of Prairie du Chien artifacts shows a strong presence of heat-treated Prairie du Chien throughout this quarter's profile, with only a few levels having any Prairie du Chien artifacts with rind (Table 21). Of the 12 levels with Prairie du Chien artifacts, all of them have heat-treated Prairie du Chien, with only the last level, 90-95 centimeters, not having any. Cortex is represented within eight of

the 14 levels, with no cortex being found below 80 centimeters. From 35-65 centimeters, cortex is continuously present. Rind is only represented within three of the twelve levels, concentrated between 40-55 centimeters. No artifact of Prairie du Chien with rind is found outside of those 15 centimeters in this quarter.

Table 21

Feature 1 NW Prairie du Chien with Heat-treatment, Cortex, or Rind Ubiquity			
Level	HT	Cortex	Rind
25-30	1	1	
30-35	1		
35-40	1	1	
40-45	1	1	1
45-50	1	1	1
50-55	1	1	1
55-60	1	1	
60-65	1	1	
65-70	1		
70-75	1		
75-80	1	1	
80-85	1		
85-90	1		
90-95			
Total	13/14	8/14	3/14
Presence	93%	57%	21%

A concentration of Prairie du Chien artifacts with both heat-treatment and cortex is represented in Table 22 between 45-60 centimeters. By weight, the level with the most heat-treatment and cortex is 55-60 centimeters. After 55-60 centimeters, which has 67.844 grams of heat-treated Prairie du Chien (more than triple the weight of heat-treated Prairie du Chien in any other level), no lower level has more than five grams of heat-treated Prairie du Chien. A similar boundary is represented in the presence of cortex after 60 centimeters. This quarter had 69.718 grams of Prairie du Chien with cortex between 55-60 centimeters (again, more than triple the amount of cortex by weight than any other level), yet no more than 2.9 g of Prairie du Chien with cortex can be found below this concentration. By weight, comparatively little Prairie du Chien with cortex or heat-treatment can be found in the upper levels of the profile for this quarter. Heat-treated Prairie du Chien and Prairie du Chien with cortex are clearly

concentrated near the middle of the profile. Of all the Prairie du Chien recovered in this quarter, by weight, 74.74% is heat-treatment, while 62.36% has cortex.

Table 22

Feature 1 NW Prairie du Chien with Heat-treatment, Cortex, or Rind Presence by Weight (g)				
Level	HT	Cortex	Rind	Total
25-30	1.348	0.997		3.078
30-35	0.799			2.27
35-40	8.625	6.93		9.699
40-45	9.271	3.733	0.753	10.726
45-50	14.135	5.761	3.145	17.428
50-55	18.844	17.111	0.757	26.542
55-60	67.18	69.718		90.437
60-65	5.075	2.894		7.247
65-70	0.997			0.997
70-75	0.507			1.386
75-80	1.141	1.029		1.202
80-85	1.479			2.157
85-90	0.249			0.295
90-95				
Total	129.65	108.173	4.655	173.464
Presence	74.74%	62.36%	2.68%	

Of the three continuous levels that contain Prairie du Chien with rind, the middle level (45-50 centimeters) has the most by weight with 3.145 grams. It is interesting that the level above (40-45 centimeters) this slight concentration and below (50-55 centimeters) have very similar amounts of rind by weight. 40-45 centimeters has .753 grams, and 50-55 centimeters has .757 grams. These similar readings above and below the larger concentration of rind can help understand the nature of this deposit. Of all the Prairie du Chien found in this quarter, rind only makes up 2.68% by weight.

The artifacts by count represented in Table 23 help to show the true nature of the concentrations represented in Table 22. The level with the most Prairie du Chien artifacts with heat-treatment and cortex, by count is 55-60 centimeters (Table 23). Between 55-60 centimeters of this quarter, 72 artifacts of heat-treated Prairie du Chien were recovered, and 28 artifacts were found with rind in this same level. The sudden decline in heat-treated artifacts is obvious. After the 72 heat-treated Prairie du Chien artifacts found between 55-60 centimeters, 32 were recovered in the next five-centimeter level between 60-

65centimeters, then below this level no 5-centimeter level contains more than 5 Prairie du Chien artifacts with heat-treatment. A similar trend can be seen with cortex. After 55-60 centimeters, with 28 artifacts with rind, only four were found between 60-65 centimeters, and only three between 75-80 centimeters. Prairie du Chien artifacts with heat-treatment or cortex were clearly concentrated in the middle of this quarter's profile.

Table 23

Feature 1 NW Prairie du Chien with Heat-treatment, Cortex, or Rind Presence by Count				
Level	HT	Cortex	Rind	Total
25-30	6	1		11
30-35	12			26
35-40	13	3		21
40-45	18	3	1	29
45-50	20	4	1	32
50-55	29	15	1	71
55-60	72	28		149
60-65	32	4		47
65-70	2			2
70-75	2			3
75-80	5	3		10
80-85	4			5
85-90	4			5
90-95				
Total	219	61	3	411
Presence	53.28%	14.84%	0.73%	

Of all the Prairie du Chien artifacts recovered in this quarter, 53.28% of them had heat-treatment. By weight, 74.74% of the Prairie du Chien in this quarter is heat-treated. This discrepancy implies that Prairie du Chien artifacts with heat-treatment were heavier and possibly larger than the other Prairie du Chien artifacts found in this quarter.

Of all the Prairie du Chien artifacts recovered in this quarter, only 14.845% had cortex. This is in stark contrast to the presence of cortex by weight for this quarter, which was 62.36%. This discrepancy again implies that the Prairie du Chien artifacts with cortex recovered from this quarter were heavier, and possibly larger artifacts than the other Prairie du Chien materials found in this quarter.

Only three Prairie du Chien artifacts were found with rind through this profile, making up only .73% of the total amount of Prairie du Chien recovered. These artifacts were found in three continuous levels.

Of the fourteen levels that contained Grand Meadow artifacts in this quarter of Feature 1, only six have heat-treated Grand Meadow artifacts (Table 24). These artifacts seem to be concentrated toward the top or top middle of the feature profile for this quarter. The same can be said for Grand Meadow artifacts with cortex. Grand Meadow artifacts with cortex are in every level with heat-treated Grand Meadow except for two levels. In other words, levels in this quarter which have heat-treated Grand Meadow are likely paired with the presence of cortex. Grand Meadow artifacts with rind are only found in one level, between 30-35 centimeters.

Table 24

Feature 1 NW Grand Meadow with Heat-treatment, Cortex, or Rind Ubiquity			
Level	HT	Cortex	Rind
25-30			
30-35	1	1	1
35-40	1	1	
40-45			
45-50	1		
50-55	1	1	
55-60	1	1	
60-65		1	
65-70			
70-75	1	1	
75-80			
80-85			
85-90			
90-95			
Total	6/14	6/14	1/14
Presence	43%	43%	7%

Examining the presence of cortex and heat-treatment for Grand Meadow artifacts by weight shows no clear concentration of either (Table 25). No level in this quarter has more than .829 grams of heat-treated Grand Meadow, while only two levels, one near the top of the feature (30-35 centimeters) and one near the middle (50-55 centimeters) have more than two grams of Grand Meadow with cortex.

The nature of these dispersed concentrations is reflected in Table 26, which shows there are simply not many Grand Meadow artifacts with heat-treatment or cortex. Rind is even less represented. Of all the Grand Meadow artifacts found in this quarter, 7.7% of their total weight has heat-treatment. By weight, 21.98% of the Grand Meadow artifacts from this quarter have cortex, and only .49% have rind.

Table 25

Feature 1 NW Grand Meadow with Heat-treatment, Cortex, or Rind Presence by Weight (g)				
Level	HT	Cortex	Rind	Total
25-30				0.169
30-35	0.829	2.125	0.108	3.701
35-40	0.058	0.017		1.467
40-45				1.26
45-50	0.191			2.238
50-55	0.555	2.036		3.412
55-60	0.345	1.382		3.152
60-65		0.042		8.073
65-70				0.848
70-75	0.009	0.07		0.102
75-80				
80-85				
85-90				1.334
90-95				0.054
Total	1.987	5.672	0.108	25.81
Presence	7.70%	21.98%	0.49%	

Analysis of the presence for Grand Meadow artifacts with heat-treatment, cortex, or rind shows of the 126 total Grand Meadow artifacts found in this quarter, very few have any of these features (Table 26). In total, only 14 Grand Meadow artifacts from this quarter had heat-treatment, which is 11.11%. Compared to the 7.7% of the total weight, this discrepancy implies Grand Meadow artifacts with heat-treatment were slightly lighter than the other Grand Meadow artifacts recovered here.

Table 26

Feature 1 NW Grand Meadow Presence with Heat-treatment, Cortex, or Rind by Count				
Level	HT	Cortex	Rind	Total
25-30				4
30-35	2	3	1	10
35-40	1	1		18
40-45				16
45-50	2			11
50-55	4	3		35
55-60	4	2		14
60-65		1		9
65-70				3
70-75	1	1		3
75-80				
80-85				
85-90				2
90-95				1
Total	14	11	1	126
Presence	11.11%	8.73%	0.79%	

Of the 126 Grand Meadow artifacts recovered in this quarter, only 11 had cortex. In total, that is only 8.73% of the Grand Meadow artifacts of the northwest quarter of Feature 1. The discrepancy between Grand Meadow with cortex by count vs by weight implies Grand Meadow artifacts with cortex were heavier, probably larger than the other Grand Meadow artifacts recovered here. Only two Grand Meadow artifacts with rind were recovered in this quarter. This makes up less than 1% of the total amount of Grand Meadow recovered here.

Comparing the Northeast and Northwest Quarters of Feature 1

Feature 1 Northern Half Artifact Ubiquity

Each category of artifact can be found in every level of the northwest quarter of Feature 1. In the northeast quarter, each category of artifact is also represented but only from the top of the feature down to 65 centimeters. Below 65 centimeters in the northeast quarter, only one piece of pottery was recovered at the bottom of the feature, between 80-85 centimeters. Although the feature profile in the northwest quarter has more continuous deposits of artifacts, in total, more cultural material was recovered in the

northwest quarter (Table 5: 1890 different artifacts) compared to the northeast quarter (Table 17: 1786 artifacts).

Feature 1 Northern Half Lithic Raw Material

Comparing raw material presence in the northeast quarter with the northwest quarter shows more continuous presence of Prairie du Chien and Grand Meadow throughout the northwest quarter, although the northeast quarter contains more artifacts of these materials by count and weight. Prairie du Chien and Grand Meadow artifacts are present between 25-65 centimeters in the northeast quarter, which is eight out of the 14 levels excavated in this feature. It is of interest to note that neither of these materials are located within the northeast quarter below 65 centimeters. The northwest quarter has Prairie du Chien in all levels except for the bottom level, between 90-95 centimeters. Grand Meadow is present in all but two levels in the northwest quarter, between 75-85 centimeters. Below 65 centimeters in the northwest quarter, no level has more than 2.5 grams of Prairie du Chien or Grand Meadow. The northeast quarter has 65 more grams of Prairie du Chien (Table 7) spread throughout the feature profile compared to the northwest quarter (Table 19), and 120 more artifacts of this raw material (Tables 8 and 20).

Of the six levels in the northeast quarter that contained Prairie du Chien, the material is heavily concentrated between 45-55 centimeters by count and weight (Tables 7 and 8). Grand Meadow is more concentrated in a larger area in this quarter higher in the profile compared to Prairie du Chien. When comparing the two northern quarters of this feature, the Prairie du Chien concentration in the northwest quarter, which by count and weight spans between 50-60 centimeters (Tables 19 and 20), overlaps more cleanly with the Prairie du Chien concentration in the northeast quarter when compared to Grand Meadow. Grand Meadow artifacts in the northwest quarter are more concentrated near the middle of the profile, between 50-55 centimeters (Tables 19 and 20), compared to the northeast quarter, where the Grand Meadow concentration is more dispersed throughout the upper portion of the feature between 35-55 centimeters (Tables 7 and 8). Between the northeast and northwest quarter, the amounts of Grand Meadow in weight and count within each quarter are comparable, but their location throughout the feature

profile are not. The northeast quarter of this feature has 137 Grand Meadow artifacts (Table 8), while the northwest has 126 (Table 20).

Cedar Valley and Hixton are both present in both northern quarters of this feature. In both quarters, Cedar Valley was found only in the upper half of the northeast quarter (Table 8), while in the northwest quarter it was only recovered near the middle of the profile, between 45-60 centimeters (Table 20). Between the two quarters, only seven Cedar Valley artifacts were recorded. Like with Cedar Valley, Hixton is concentrated in the northwest quarter at the top of the profile, between 25-45 centimeters, and more concentrated in the middle of the profile in the northeast quarter. 18 Hixton artifacts were found in total within the entire northern half of Feature 1 (Tables 8 and 20).

In summary, Prairie du Chien is well represented within both quarters, with Grand Meadow also being well represented but in much lower numbers. Cedar Valley and Hixton were only recorded in scant quantities. No material is well represented below 65 centimeters in either quarter. Prairie du Chien is focused between the two quarters in the middle of the feature profile, while Grand Meadow is more dispersed throughout the middle of the top of the profile.

Feature 1 Northern Half Prairie du Chien

Between both the northeast and northwest quarter of Feature 1, whatever level has Prairie du Chien present also has heat-treated Prairie du Chien (Tables 9 and 21). The same cannot be said for Prairie du Chien with cortex, which is less ubiquitous but also present within the majority of levels that contained Prairie du Chien. Prairie du Chien with rind is poorly represented between both quarters, located only in two levels in the northeast quarter and three levels in the northwest.

In both quarters, heat-treated Prairie du Chien and Prairie du Chien with cortex is concentrated near the middle of the feature (Tables 11 and 23). No Prairie du Chien was discovered below 65 centimeters in the northeast quarter, while Prairie du Chien is not represented in any high quantity in the northwest quarter below 65 centimeters. The concentration of Prairie du Chien with cortex and heat-treatment sits five-centimeter higher in the northeast quarter, where the concentrations span between 45-50 centimeters, as opposed to the northwest quarter, where Prairie du Chien with heat-treated and cortex

is concentrated between 50-60 centimeters. Even though the northwest quarter has more levels with Prairie du Chien present, more Prairie du Chien was recovered by weight and count in the northeast quarter. The northeast quarter has 121 more Prairie du Chien artifacts than the northwest quarter, which amounts to a difference of more than 65 grams of Prairie du Chien material between the two northern quarters.

Feature 1 Northern Half Grand Meadow

Grand Meadow with heat-treatment and cortex are almost equally represented within the profile of both northern quarters of this feature, though in less quantity in the northwest. In both the northeast and northwest quarter, Grand Meadow with heat-treatment and cortex are both found in six of the 14 excavation levels (Tables 12 and 24). In the northeast quarter, there is 4.66 grams of heat-treated Grand Meadow between 26 artifacts (Tables 13 and 14), while in the northwest quarter, there is 1.98 grams of heat-treated Grand Meadow between 14 artifacts (Tables 25 and 26). Heat-treated Grand Meadow is present in the top and middle of each quarter's profile but is concentrated in the middle of the feature.

In the northeast quarter, there are 12 Grand Meadow artifacts with cortex, making up 15.83 grams of material, while the northwest quarter has 11 Grand Meadow artifacts with cortex, making up only 5.67 grams of material. Between both quarters, Grand Meadow with cortex is concentrated in the middle of the profile around 50 centimeters. One Grand Meadow artifact with rind was discovered near the top of the feature in the northwest quarter, while three Grand Meadow artifacts with rind were found in the top of the middle of the feature in the northeast quarter. In summary, Grand Meadow with heat-treatment, cortex, and rind, are better represented in the northeast quarter, but present in the northwest.

Feature 5 Northwest Quarter Analysis

Artifact ubiquity analysis of the northwest corner of Feature 5 shows that artifact presence for pottery, lithics, and zoological material is almost ubiquitous throughout the entire profile (Table 27). Zoological artifacts are found in every level throughout the profile, while pottery is only absent in two

continuous levels, between 135-140 centimeters. The only level that does not have lithic material is the deepest level in profile, between 150-155 centimeters.

Table 27

Feature 5 NW Artifact Ubiquity			
Level	Pottery	Lithic	Zoo
25-30	1	1	1
30-35	1	1	1
35-40	1	1	1
40-45	1	1	1
45-50	1	1	1
50-55	1	1	1
55-60	1	1	1
60-65	1	1	1
65-70	1	1	1
70-75	1	1	1
75-80	1	1	1
80-85	1	1	1
85-90	1	1	1
90-95	1	1	1
95-100	1	1	1
100-105	1	1	1
105-110	1	1	1
110-115	1	1	1
115-120	1	1	1
120-125	1	1	1
125-130	1	1	1
130-135	1	1	1
135-140		1	1
140-145		1	1
145-150	1	1	1
150-155	1		1
Total	24/26	25/26	26/26
Presence	92%	96%	100%

Examining artifact presence by weight identifies two concentrations of pottery throughout this quarter of Feature 5 (Table 28). Between 65-70 centimeters there is 69.172 grams of pottery, the deepest level between 150-155 centimeters has 97.914 grams of pottery. Table 29 shows that the concentration between 150-155 centimeters constitutes only two pieces of pottery. One large piece of pottery (97.812 grams) boosts the weight of the pottery recovered in the last level. Of all the artifacts recovered in this quarter of Feature 5, pottery makes up 32.51% by weight.

Table 28

Feature 5 NW Artifact Presence by Weight (g)			
Level	Pottery	Lithic	Zoo
25-30	4.177	2.499	0.278
30-35	0.549	0.198	1.607
35-40	3.225	9.832	2.63
40-45	0.344	0.696	0.046
45-50	0.248	0.149	0.029
50-55	11.79	3.906	1.325
55-60	6.544	82.758	3.148
60-65	15.249	0.834	2.544
65-70	69.172	427.532	1.635
70-75	10.551	10.279	10.604
75-80	11.011	3.052	7.212
80-85	7.084	10.676	1.933
85-90	14.14	4.248	0.621
90-95	7.128	3.241	3.875
95-100	3.988	26.737	3.396
100-105	7.928	1.485	3.858
105-110	2.691	0.403	3.383
110-115	0.452	0.197	1.627
115-120	4.523	0.319	3.285
120-125	34.985	0.178	3.734
125-130	0.835	0.06	0.858
130-135	1.056	0.131	1.966
135-140		0.156	3.816
140-145		3.087	4.416
145-150	3.993	0.101	2.651
150-155	97.914		0.188
Total	319.577	592.754	70.665
Presence	32.51%	60.30%	7.19%

A concentration of lithic materials can be seen between 65-70 centimeters with 427.532 grams of lithic artifacts, the same five-centimeter level with a concentration of pottery. A concentration of zoological materials is present in the next five-centimeter level, between 70-75 centimeters with 10.604 grams of zoological artifacts. Of all the artifacts recovered in this quarter, lithic materials are 60.3% by weight, while zoological materials are only 7.19%. By weight, it is clear a concentration of all three categories of artifacts exists in the top middle of his quarter's profile, roughly between 65-75 centimeters.

Artifact presence by count also exhibits concentrations of artifacts in the top middle of the feature profile. The level with the most pottery artifacts is 65-70 centimeters with 44 pieces of pottery (Table 29). The level with the next highest frequency is between 60-65 centimeters, and also has the most lithic artifacts with 32. Between 65-70 centimeters, there are 23 lithic artifacts with a total weight of 427.532 g

and is the level with the highest weight for that category of artifact (Table 28). Between 70-75 centimeters, there are 93 zoological artifacts, making up the heaviest level by weight for that category of artifact. Most zoological artifacts in a level were found between 100-105 centimeters, with 119 artifacts, and yet in weight they only amount to 3.858 grams of material. By count, zoological artifacts are much more dispersed than throughout this quarter's profile when compared to pottery and lithic materials which begin to dwindle in number per level near the bottom of the profile.

Table 29

Feature 5 NW Artifact Presence by Count			
Level	Pottery	Lithic	Zoo
25-30	7	10	19
30-35	6	8	42
35-40	11	22	23
40-45	5	4	7
45-50	3	3	6
50-55	15	16	34
55-60	12	16	44
60-65	39	32	58
65-70	44	23	68
70-75	22	27	93
75-80	25	13	35
80-85	38	16	74
85-90	37	17	59
90-95	15	20	62
95-100	15	9	84
100-105	23	15	119
105-110	6	14	55
110-115	8	9	48
115-120	12	10	59
120-125	13	8	59
125-130	5	4	27
130-135	4	10	35
135-140		13	69
140-145		6	54
145-150	2	2	64
150-155	2		8
Total	369	327	1305
Presence	18.44%	16.34%	65.22%

By count, pottery accounts for 18.44% of the artifacts recovered from this quarter. Lithic material accounts for 16.34% of the assemblage. Compared to the artifact by weight percentages (Table 28), with pottery constituting 32.51% and lithics 60.3% of the total weight of artifacts recovered in this level, it is

clear that pottery and lithic artifacts weighed more than the zoological artifacts recovered. Zoological items accounted for 65.22% of the artifacts recovered in this quarter, but only equal 7.19% of the total weight (Table 28). This disparity between presence percentages highlights the on average much lighter weight of zoological materials from this quarter.

Artifact ubiquity of lithic raw materials throughout the feature profile exhibits a strong presence for Prairie du Chien and Grand Meadow (Table 30). Prairie du Chien is present throughout 24 of the 26 levels and Grand Meadow is present within 22 levels. Prairie du Chien is absent between 140-145 centimeters, while Grand Meadow is not present between 90-95 centimeters, and again absent between 140-155 centimeters.

Table 30

Feature 5 NW Lithic Raw Material Ubiquity				
Level	PDC	Grand Meadow	Cedar Valley	Hixton
25-30	1	1		
30-35	1	1		
35-40	1	1		
40-45	1	1		
45-50	1	1		
50-55	1	1	1	
55-60	1	1		
60-65	1	1		
65-70	1	1		
70-75	1	1		
75-80	1	1		
80-85	1	1		1
85-90	1	1		
90-95	1	1		
95-100	1	1	1	
100-105	1	1		1
105-110	1	1	1	
110-115	1	1		1
115-120	1	1		
120-125	1	1		
125-130	1	1		
130-135	1	1		
135-140	1			
140-145		1	1	
145-150	1			
150-155				
Total	24/26	22/24	4/24	3/24
Presence	92.30%	91.60%	16.60%	12.50%

Cedar Valley Chert was only present within four of the 24 levels of this quarter and Hixton is only present within three levels. Cedar Valley is dispersed throughout the feature, while Hixton is more concentrated throughout the bottom of the middle of the feature.

By weight, the most Prairie du Chien was recovered high in the feature profile between 25-40 centimeters which contain 9.637g of Prairie du Chien material (Table 31). The five-centimeter level with the second most amount of Prairie du Chien material by weight is between 70-75 centimeters with 4.846 grams. Between 75-80 centimeters, there is 2.923 grams which makes it the level with the third most amount of Prairie du Chien material by weight. Throughout the rest of the profile, Prairie du Chien material is dispersed. The average level has 0.866 grams of Prairie du Chien material. By weight, Prairie du Chien makes up 49.1% of the lithic material recovered in this quarter.

Table 31

Feature 5 NW Raw Material Presence by Weight (g)				
Level	PDC	Grand Meadow	Cedar Valley	Hixton
25-30	0.811	1.688		
30-35	0.111	0.087		
35-40	9.637	0.195		
40-45	0.03	0.66		
45-50	0.149	0.001		
50-55	0.092	3.808	0.006	
55-60	1.869	0.291		
60-65	0.409	0.425		
65-70	0.29	3.242		
70-75	4.846	1.171		
75-80	2.923	0.129		
80-85	1.042	0.739		8.895
85-90	0.776	3.472		
90-95	2.401	0.084		
95-100	0.441	0.03	0.024	
100-105	1.229	0.256		0.001
105-110	0.31	0.071	0.022	
110-115	0.049	0.118		0.03
115-120	0.051	0.268		
120-125	0.147	0.031		
125-130	0.024	0.036		
130-135	0.084	0.047		
135-140	0.156			
140-145		3.087	0.001	
145-150	0.101			
150-155				
Total	27.978	19.936	0.053	8.926
Presence	49.10%	34.99%	0.09%	15.66%

Grand Meadow is also dispersed throughout the feature profile of this quarter. Of the 22 levels that contained Grand Meadow artifacts, the average level had less than one gram of Grand Meadow. The level with most Grand Meadow by weight is between 50-55 centimeters with 3.808 grams of Grand Meadow. The level with the next highest weight is between 85-90 centimeters with 3.232 grams of Grand Meadow. Most levels in this quarter do not have more than a gram of Grand Meadow. By weight, Grand Meadow makes up 34.99% of the lithic material recovered in this quarter.

Cedar Valley is not well represented within this quarter of Feature 5. Of the four levels with Cedar Valley present, only 0.053 g of Cedar Valley is present within the whole quarter profile. The presence of Hixton by weight is skewed by the presence of one heavy Hixton artifact (Table 32) between 80-85 centimeters, weighing 8.895 grams. The other two levels with Hixton have less than a combined weight of 0.04 grams. By weight, Hixton accounts for 15.6% of the lithics recovered in this quarter, with the majority of this weight associated with the previously mentioned artifact discovered between 80-85 centimeters.

Table 32

Feature 5 NW Lithic Raw Material Presence by Count				
Level	PDC	Grand Meadow	Cedar Valley	Hixton
25-30	5	5		
30-35	4	4		
35-40	13	9		
40-45	3	1		
45-50	1	2		
50-55	3	12	1	
55-60	10	5		
60-65	16	16		
65-70	8	14		
70-75	16	10		
75-80	10	3		
80-85	9	6		1
85-90	10	7		
90-95	11	9		
95-100	2	2	2	
100-105	7	7		1
105-110	6	6	2	
110-115	3	4		2
115-120	3	7		
120-125	5	3		
125-130	1	3		
130-135	6	4		
135-140	13			
140-145		4	2	
145-150	2			
150-155				
Total	167	143	7	4
Presence	52.02%	44.55%	2.19%	1.24%

Table 32 shows a clear concentration of both Prairie du Chien and Grand Meadow artifacts in the middle of the feature profile for this quarter. The most amount of Prairie du Chien artifacts found within a five-centimeter level is 16 artifacts. Two 5 centimeters levels had a total of 16 Prairie du Chien artifacts, one between 60-65 centimeters and one between 70-75 centimeters. Prairie du Chien artifacts are concentrated in the top of the middle of the feature, between 55-80 centimeters. By count, Prairie du Chien makes up 52.02% of the lithics found in this quarter of Feature 5.

An even more pronounced concentration of Grand Meadow is present between 60-75 centimeters. These three continuous five-centimeter levels have the most Grand Meadow artifacts than any other level in this quarter's profile. By count, Grand Meadow makes up 44.55% of the lithics discovered in this quarter. Compared to the presence by weight, with Grand Meadow making up 34.99% of the total weight

of lithics found in this quarter (Table 31), the disparity of presence by weight vs presence by count implies the Grand Meadow artifacts are lighter than the other lithics found in this quarter. Seven Cedar Valley artifacts were found in this quarter equaling 2.19% of the total amount of lithics. Hixton makes up only 1.24% of the lithics found in this quarter with a total of four artifacts.

Table 33 shows a high presence of heat-treated Prairie du Chien throughout the feature's quarter profile. Heat-treated Prairie du Chien is continuously present through the levels between 50-110 centimeters and is present within 16 of the 24 levels throughout this quarter's profile. Prairie du Chien with cortex is only present within seven of the 24 levels, and is not found below 95 centimeters. Prairie du Chien with cortex is concentrated in the middle levels of the feature's profile, but is also present within two of the top three levels. No rind was found on any Prairie du Chien artifacts.

Table 33

Feature 5 NW Prairie du Chien with Heat-treatment and Cortex Ubiquity		
Level	HT	Cortex
25-30		1
30-35		
35-40	1	1
40-45		
45-50		
50-55	1	
55-60	1	1
60-65	1	
65-70	1	
70-75	1	1
75-80	1	1
80-85	1	1
85-90	1	
90-95	1	1
95-100	1	
100-105	1	
105-110	1	
110-115		
115-120		
120-125	1	
125-130		
130-135	1	
135-140	1	
140-145		
145-150		
150-155		
Total	16/24	7/24
Presence	66.70%	29.20%

By weight, the most Prairie du Chien with heat-treatment was found between 35-40 centimeters, with 7.051 grams in these levels (Table 34). This weight is more than double the weight of heat-treated Prairie du Chien found in any other level in this quarter of the feature. By weight, heat-treated Prairie du Chien makes up 62.17% of the Prairie du Chien artifacts found in this quarter.

Table 34

Feature 5 NW Prairie du Chien with Heat-treatment and Cortex Presence by Weight (g)			
Level	HT	Cortex	Total
25-30		0.027	0.811
30-35			0.11
35-40	7.051	7.298	9.637
40-45			0.03
45-50			0.149
50-55	0.015		0.092
55-60	0.01	0.418	1.869
60-65	0.23		0.409
65-70	0.16		0.29
70-75	3.484	2.049	4.846
75-80	2.385	0.743	2.923
80-85	0.873	0.073	1.042
85-90	0.344		0.776
90-95	1.484	1.484	2.401
95-100	0.441		0.441
100-105	0.504		1.229
105-110	0.164		0.31
110-115			0.049
115-120			0.051
120-125	0.101		0.147
125-130			0.024
130-135	0.001		0.084
135-140	0.143		0.156
140-145			
145-150			0.101
150-155			
Total	17.39	12.029	27.977
Presence	62.17%	43.00%	

Between 35-40 centimeters, 7.298 grams of Prairie du Chien with cortex was recovered, and this level contained the most weight of Prairie du Chien in any level in this quarter. By weight, Prairie du Chien with cortex makes up 43% of all the Prairie du Chien recovered.

The five-centimeter level with the most Prairie du Chien artifacts with heat-treatment recovered was between 70-75 centimeters, which contained eight heat-treated Prairie du Chien artifacts (Table 35).

In total 42 heat-treated Prairie du Chien artifacts were recovered from this quarter, making up 25.15% of the total amount of Prairie du Chien. Prairie du Chien with cortex is much less frequent. The level with the most artifacts of Prairie du Chien with cortex for this quarter was between 35-40 centimeters, which had three Prairie du Chien artifacts with cortex. There are two Prairie du Chien artifacts with cortex found between 70-75 centimeters. The other five levels that have Prairie du Chien artifacts with cortex only have one each. As previously noted, Prairie du Chien artifacts with cortex make up 5.99% of the all the Prairie du Chien artifacts found in this quarter. The disparity between presence by weight and the presence by count shows that the Prairie du Chien artifacts with cortex make up in disproportionate amount of weight per artifact when compared to the other Prairie du Chien artifacts without cortex.

Table 35

Feature 5 NW Prairie du Chien Presence by Count			
Level	HT	Cortex	Total
25-30		1	5
30-35			4
35-40	2	3	13
40-45			3
45-50			1
50-55	1		3
55-60	1	1	10
60-65	3		16
65-70	2		8
70-75	8	2	16
75-80	3	1	10
80-85	5	1	9
85-90	5		10
90-95	1	1	11
95-100	1		2
100-105	2		7
105-110	2		6
110-115			3
115-120			3
120-125	2		5
125-130			1
130-135	1		6
135-140	3		13
140-145			
145-150			2
150-155			
Total	42	10	167
Presence	25.15%	5.99%	

Grand Meadow with heat-treatment, cortex, and rind are poorly represented within the profile of this quarter of Feature 5 (Table 36). Heat-treated Grand Meadow is present within only three of the 26 levels in this quarter and cortex is present within six. Grand Meadow artifacts with rind were encountered in only two levels. Grand Meadow artifacts with heat-treatment, cortex, and rind appear to concentrate in the middle of the profile. Grand Meadow with cortex was discovered near the bottom of the profile between 140-145 centimeters, and Grand Meadow with rind was encountered between 40-45 centimeters, but rest of Grand Meadow with heat-treatment, cortex, and rind was encountered between 60-110 centimeters.

Table 36

Feature 5 NW Grand Meadow with Heat-treatment, Cortex, and Rind Ubiquity			
Level	HT	Cortex	Rind
25-30			
30-35			
35-40			
40-45			1
45-50			
50-55			
55-60			
60-65		1	
65-70	1	1	
70-75			
75-80			
80-85		1	
85-90		1	1
90-95	1	1	
95-100			
100-105			
105-110	1		
110-115			
115-120			
120-125			
125-130			
130-135			
135-140			
140-145		1	
145-150			
150-155			
Total	3/26	6/26	2/26
Presence	11.50%	23.10%	7.70%

Of the three levels in this feature's quarter that contained heat-treated Grand Meadow, the level with the greatest weight is 65-70 centimeters where 1.942 grams were recovered (Table 37). Between 90-

95 centimeters there is 0.554 grams of heat-treated material, and between 105-110 centimeters only 0.01 grams was encountered. Of all the Grand Meadow artifacts recovered in this quarter, 2.506 grams were heat-treated, making up 12.1% by weight.

Table 37

Feature 5 NW Grand Meadow with Heat-treatment, Cortex, and Rind Presence by Weight (g)				
Level	HT	Cortex	Rind	Total
25-30				1.688
30-35				0.087
35-40				0.195
40-45			0.666	0.666
45-50				0.001
50-55				3.808
55-60				0.291
60-65		0.198		0.425
65-70	1.942	0.537		3.242
70-75				1.171
75-80				0.129
80-85		0.701		0.739
85-90		3.097	0.024	3.472
90-95	0.554	0.554		0.84
95-100				0.03
100-105				0.256
105-110	0.01			0.071
110-115				0.118
115-120				0.268
120-125				0.031
125-130				0.036
130-135				0.047
135-140				
140-145		2.895		3.087
145-150				
150-155				
Total	2.506	7.982	0.69	20.698
Presence	12.10%	38.60%	3.30%	

The five-centimeter level with the most Grand Meadow artifacts with cortex by weight is between 85-90 centimeters with 3.097 grams. Table 38 shows this level only has one Grand Meadow artifact with cortex. The level with the second most Grand Meadow artifacts with cortex by weight is between 140-145 centimeters with 2.895 grams. Table 38 shows this level also has only one Grand Meadow artifact with cortex. The remaining four levels in this quarter that contained Grand Meadow artifacts with cortex all

have a weight less than one gram. Of all the Grand Meadow artifacts encountered in this profile, 7.982 g had cortex, a total of 38.6% of all Grand Meadow in this quarter by weight.

Only two levels in this quarter contained Grand Meadow artifacts with rind. By weight, Grand Meadow artifacts with rind make up only 3.3% of all the Grand Meadow artifacts found in this quarter, and the total weight is less than 0.7 grams. The level of 40-45 centimeters had the most rind by weight for any level with a total of 0.666 grams.

Two of the three levels in this quarter that contained heat-treated Grand Meadow artifacts had one heat-treated Grand Meadow artifact each and in the level between 65-70 centimeters two were recovered (Table 38). In total, only four Grand Meadow artifacts with heat-treatment were recovered throughout this entire quarter, making up only 2.8% of all the Grand Meadow artifacts found in this quarter. By weight, heat-treated Grand Meadow artifacts make up 12.1% of all the Grand Meadow artifacts recovered in this quarter (Table 37). This disparity between presence by count and presence by weight implies that heat-treated Grand Meadow artifacts are on average heavier than the other Grand Meadow artifacts found without heat-treatment.

Table 38

Feature 5 NW Grand Meadow with Heat-treatment, Cortex, and Rind Presence by Count				
Level	HT	Cortex	Rind	Total
25-30				5
30-35				4
35-40				9
40-45			1	1
45-50				2
50-55				12
55-60				5
60-65		2		16
65-70	2	2		14
70-75				10
75-80				3
80-85		2		6
85-90		1	1	7
90-95	1	1		9
95-100				2
100-105				7
105-110	1			6
110-115				4
115-120				7
120-125				3
125-130				3
130-135				4
135-140				
140-145		1		4
145-150				
150-155				
Total	4	9	2	143
Presence	2.80%	6.30%	1.40%	

Three levels had two Grand Meadow artifacts with cortex throughout this quarter and one Grand Meadow artifact with cortex was found in three other levels. Of the nine Grand Meadow artifacts with cortex encountered in this quarter, six were between 60-85 centimeters. One Grand Meadow artifact with cortex was recovered between 140-145 centimeters. All other Grand Meadow artifacts with cortex are concentrated in the middle of the profile. Sixty-three percent of all the Grand Meadow artifacts found in this quarter had cortex. By weight, Grand Meadow artifacts with cortex make up 38.6% of all Grand Meadow artifacts recovered in this quarter (Table 37). This disparity between presence by count and presence by weight implies that the Grand Meadow artifacts with cortex are on average heavier than the other Grand Meadow artifacts found without cortex.

Only two Grand Meadow artifacts with rind were recovered in this quarter. One was found between 40-45 centimeters, and the other was recovered between 85-90 centimeters. These two artifacts make up only 1.4% of all Grand Meadow artifacts encountered in this quarter.

Feature 5 Northeast Quarter Analysis

Pottery and lithic artifacts were all encountered in each of the six distinct deposits excavated in the northeast quarter of Feature 5 (Table 39). Zoological artifacts were recovered in all deposits with the exception of Deposit 1 at the top of the feature.

Table 39

Feature 5 NE Artifact Ubiquity			
Deposit	Pottery	Lithic	Zoo
1	1	1	
2	1	1	1
3	1	1	1
4	1	1	1
5	1	1	1
6	1	1	1
Total	6/6	6/6	6/6
Presence	100%	100%	100%

It is clear in Table 40 that pottery and lithic artifacts are both concentrated by weight within the upper three deposits. Pottery is truly concentrated within the third deposit, which has 326.465 grams of pottery. The deposit with the next heaviest amount of pottery is Deposit 2 with only 23.822 grams. In other words, Deposit 3 has notably more pottery by weight than any other deposit. By weight, pottery makes up only 22.4% of all the artifacts recovered in this quarter.

Table 40

Feature 5 NE Artifact Presence by Weight (g)			
Deposit	Pottery	Lithic	Zoo
1	7.531	109.328	
2	23.822	178.43	128.351
3	326.465	779.807	78.125
4	13.353	1.019	42.562
5	7.257	2.672	2.946
6	0.285	0.471	2.432
Total	382.735	1071.727	254.491
Presence	22.40%	62.70%	14.90%

Deposit 3 has 779.807 grams of lithic material, more than four times the amount by weight of lithics in any other deposit, Deposits 1 and 2 still have more than 100g of lithics each. Below Deposit 3 in Deposits 4, 5, and 6, none of the three deposits have more than three grams of lithics. Of all the artifacts found in this quarter, by weight lithics make up the majority with 62.7%. Although Deposits 1 and 2 have more than a few grams of lithic material, it is clear that both pottery and lithic artifacts are concentrated within Deposit 3.

Table 40 shows no zoological materials were recovered in Deposit 1. Deposit 2 has the most zoological material by weight with a total of 128.351 grams, Deposit 3 has the second most by weight with 78.125 grams, and Deposit 4 the third most by weight with 42.562 grams. Between Deposits 2, 3, and 4, it is clear zoological material slowly tapers with depth.

By weight, pottery and lithics are concentrated within the same deposit, Deposit 3 (Table 40). By artifact count, Deposit 3 has by far the most pottery, lithics, and zoological artifacts than any other deposit (Table 41). In total, 1100 zoological artifacts were recovered in Deposit 3. Deposit 2, the deposit with the next highest number of zoological artifacts, only has 172 specimens. Deposit 3 has 288 lithic artifacts and 352 pieces of pottery. These artifact counts are significantly higher than the other five deposits encountered in this quarter.

In total 398 pieces of pottery were recovered throughout this feature's quarter, making up 18.2% of the artifacts recovered (Table 41). By count, lithics made up 16.3% of the artifacts found in this quarter with a total of 358 artifacts. Comparatively, by weight, lithics make up 62.7% of all the artifacts in this quarter (Table 40). This discrepancy between presence by weight and presence by count implies that lithic artifacts were on average heavier than the other artifacts recovered. The opposite is true for zoological artifacts. In total, zoological artifacts made up 65.5% of the artifacts recovered in this quarter, with a total of 1435 artifacts. It is clear that on average, zoological artifacts—while abundant—are on average lighter in weight than the other artifact types recovered.

Table 41

Feature 5 NE Artifact Presence by Count			
Deposit	Pottery	Lithic	Zoo
1	6	16	
2	5	12	22
3	352	288	1100
4	16	17	172
5	16	12	84
6	2	13	56
Total	398	358	1435
Presence	18.20%	16.30%	65.50%

Ubiquity analysis of lithic raw materials throughout this quarter shows a continuing presence for Prairie du Chien and Grand Meadow materials throughout the feature's profile (Table 42). Hixton is not present within this quarter, while Cedar Valley is found in only one deposit (Deposit 3). Artifacts of Quartzite were also recovered but only in two deposits (Deposits 1 and 3). Both Prairie du Chien and Grand Meadow were found in all six deposits. A single flake of Burlington was recovered in Deposit 6.

Table 42

Feature 5 NE Lithic Raw Material Ubiquity					
Deposit	PDC	Grand Meadow	Cedar Valley	Quartzite	Burlington
1	1	1		1	
2	1	1			
3	1	1	1	1	
4	1	1			
5	1	1			
6	1	1			1
Total	6/6	6/6	1/6	2/6	1/6
Presence	100%	100%	16.70%	33.30%	16.7%%

Examining the presence by weight for different raw materials shows a strong concentration of both Prairie du Chien and Grand Meadow in Deposit 3 (Table 43). Deposit 3 is also the only deposit that contains all four different raw materials found in this quarter of the feature. A total of 394.113 grams of Prairie du Chien was recovered in Deposit 3, while four of the remaining deposits had less than one gram of Prairie du Chien each, and Deposit 1 only had 1.132 grams. By weight, Prairie du Chien makes up 78.12% of all the lithic material found in this quarter. Of all the Prairie du Chien found in this quarter, 99% was recovered in Deposit 3.

Table 43

Feature 5 NE Lithic Raw Material Presence by Weight (g)					
Deposit	PDC	Grand Meadow	Cedar Valley	Quartzite	Burlington
1	1.132	1.566		79.482	
2	0.157	1.273			
3	394.113	21.759	0.044	4.636	
4	0.76	0.259			
5	0.728	1.944			
6	0.215	0.232			0.024
Total	397.105	27.033	.044	84.118	0.024
Presence	78.12%	5.31%	.008%	16.55%	0.005%

While not as severe as Prairie du Chien, Deposit 3 also contained more Grand Meadow by weight than any other deposit in this quarter. A total of 21.759 grams of Grand Meadow was found in Deposit 3, while no other deposit contains more than two grams of Grand Meadow. Of all the lithic raw material found in this quarter, Grand Meadow makes up only 5.31%.

Less than 0.05 grams of Cedar Valley was found in Deposit 3, the only representation for this raw material throughout the entire quarter. A total of 4.636 grams of quartzite were found in Deposit 3, while 79.482 grams were recovered in Deposit 1. Table 44 shows this all from one artifact. Both Cedar Valley and Quartzite are represented within the middle deposit of the profile. Neither material is represented in the lower deposits of this quarter. The flake of Burlington Chert found in Deposit 6 weighs less than 0.05 grams.

Table 44

Feature 5 NE Lithic Raw Material Presence by Count					
Deposit	PDC	Grand Meadow	Cedar Valley	Quartzite	Burlington
1	6	1		1	
2	4	7			
3	75	125	1	5	
4	13	4			
5	7	5			
6	3	9			1
Total	108	151	1	6	1
Presence	40.40%	56.60%	0.38%	2.2%%	0.38%

The concentrations of raw material by count for Prairie du Chien and Grand Meadow in Deposit 3 are represented in Table 44. Deposit 3 has 75 Prairie du Chien artifacts, while the deposit with the next highest amount is Deposit 4 with 13 specimens. By count, Prairie du Chien artifacts make up 40.4% of all

the lithic materials found in this quarter. Compared to presence by weight for Prairie du Chien, which is 78.12% in this quarter, it is clear that Prairie du Chien artifacts are on average heavier than the other lithic materials recovered in this quarter.

By weight, Deposit 3 represents a notable increase in Prairie du Chien presence compared to the rest of the profile (Table 43). By count, Grand Meadow artifacts actually have the larger jump in numbers between deposits. Deposit 3 has 125 Grand Meadow artifacts, while the deposit with the next highest amount is Deposit 6 with 9. By count, Grand Meadow artifacts make up 56.6% of all lithic materials recovered in this quarter. Compared to presence by weight for Grand Meadow, which is only 5.31%, the high presence by count percentage shows Grand Meadow artifacts are on average lighter than the other lithic materials recovered in this quarter. Only one artifact of Cedar Valley was recovered in this quarter and was found in Deposit 1, and only one artifact of Burlington is represented, which was recovered in Deposit 6.

Ubiquity analysis for Prairie du Chien with heat-treatment, cortex, and rind shows that no Prairie du Chien in this quarter was found with rind (Table 45). Five of the six deposits in this quarter contained Prairie du Chien with heat-treatment. Only Deposit 3 contained Prairie du Chien with cortex.

Table 45

Feature 5 NE Prairie du Chien with Heat-treatment and Cortex Ubiquity		
Deposit	HT	Cortex
1		
2	1	
3	1	1
4	1	
5	1	
6	1	
Total	5/6	1/6
Presence	83%	16.70%

Examining Prairie du Chien with heat-treatment presence by weight shows the vast majority of Prairie du Chien with heat-treatment is in Deposit 3, which has a total of 361.107 grams of heat-treated Prairie du Chien (Table 46). The other five deposits with heat-treated Prairie du Chien have no more than one gram each. Of all the Prairie du Chien recovered in this quarter, 90.9% by weight is made of the heat-

treated artifacts recovered in Deposit 3. Combined with the other deposits, when considered by weight, 91.3% of all the Prairie du Chien recovered in this quarter is heat-treated.

Table 46

Feature 5 NE Prairie du Chien with Heat-treatment and Cortex Presence by Weight (g)			
Deposit	HT	Cortex	Total
1			1.132
2	0.087		0.157
3	361.107	291.682	394.113
4	0.693		0.76
5	0.611		0.728
6	0.043		0.215
Total	362.541	291.682	397.105
Presence	91.30%	74%	

A total of 291.682 grams of Prairie du Chien with cortex was recovered in Deposit 3. This weight is in general a heavy amount of Prairie du Chien, but especially considering no other of the five deposits have any Prairie du Chien with cortex at all. By weight, 74% of all the Prairie du Chien recovered in this quarter have cortex.

Examining Prairie du Chien with heat-treatment presence by count also confirms this artifact type is concentrated in Deposit 3 (Table 47). Within Deposit 3, 68 Prairie du Chien artifacts with heat-treatment were recovered. The deposit with the next highest amount of heat-treated Prairie du Chien artifacts is the next lowest deposit, Deposit 4, with eight heat-treated Prairie du Chien artifacts. The remaining deposits with heat-treated Prairie du Chien, Deposit 2, 5, and 6, have a combined total of six heat-treated Prairie du Chien artifacts. By count, heat-treated Prairie du Chien, with 82 artifacts in total, makes up 43.62% of all the Prairie du Chien found in this quarter. Compared to heat-treatment's presence by weight, which is 91.3%, it is clear Prairie du Chien artifacts with heat-treatment are on average heavier than the other Prairie du Chien artifacts found without heat-treatment in this quarter.

Table 47

Feature 5 NE Prairie du Chien with Heat-treatment and Cortex Presence by Count			
Deposit	HT	Cortex	Total
1			6
2	2		4
3	68	20	155
4	8		13
5	3		7
6	1		3
Total	82	20	188
Presence	43.62%	10.64%	

Only 20 Prairie du Chien artifacts with cortex were found throughout this quarter's entire profile, all of them in Deposit 3 (Table 47). These 20 artifacts make up only 10.64% of all the Prairie du Chien artifacts recovered in this quarter. Compared to the presence by weight percentage for Prairie du Chien artifacts with cortex (Table 46), just like heat-treated Prairie du Chien material, it is clear Prairie du Chien artifacts in this quarter with cortex are on average heavier than the other Prairie du Chien artifacts without cortex found in this quarter.

Grand Meadow artifacts with heat-treatment, cortex, or rind are all represented in this quarter's profile (Table 48). While all of these artifact types are represented, heat-treated Grand Meadow was only recovered in three of the six deposits, Grand Meadow with rind in two, and cortex in one deposit. Heat-treated Grand Meadow, Grand Meadow with cortex, and Grand Meadow with rind are all found in Deposit 3.

Table 48

Feature 5 NE Grand Meadow with Heat-treatment, Cortex, and Rind Ubiquity			
Deposit	HT	Cortex	Rind
1			
2	1		
3	1	1	1
4			1
5			
6	1		1
Total	3/6	1/6	2/6
Presence	50%	16.67%	33.33%

Deposit 3 represents concentrations for Grand Meadow with heat-treatment and rind (Table 49). Deposit 3 is the only deposit that contained Grand Meadow with cortex. A total of 1.748 grams of heat-treated Grand Meadow was recovered in Deposit 3, while less than 0.05 g was found in Deposits 2 and 6. By weight, heat-treated Grand Meadow makes up only 6.61% of all the Grand Meadow found in this quarter. Only 3.58 grams of Grand Meadow with cortex was found, all in Deposit 3, accounting for 13.24% of the total amount of Grand Meadow recovered in this quarter.

Table 49

Feature 5 NE Grand Meadow with Heat-treatment, Cortex, and Rind Presence by Weight (g)				
Deposit	HT	Cortex	Rind	Total
1				1.566
2	0.016			1.273
3	1.748	3.58	8.609	21.759
4			0.174	0.259
5				1.944
6	0.022		0.158	0.232
Total	1.786	3.58	8.941	27.033
Presence	6.61%	13.24%	33.07%	

Deposits 4 and 6 have no more than 0.2 grams each of Grand Meadow with rind, while Deposit 3 again has the most with 8.609 grams. By weight, Grand Meadow with rind makes up 33.07% of all the Grand Meadow found in this quarter.

A total of 15 Grand Meadow artifacts with heat-treatment were found in Deposit 3 and in total 19 such artifacts were found throughout this quarter's profile (Table 50). These 19 artifacts make up 12.58% of the total 151 Grand Meadow artifacts found in this feature's quarter. Compared to the presence by weight percentage for heat-treated Grand Meadow, which is 6.61%, it is clear heat-treated Grand Meadow artifacts are on average lighter in weight compared to other Grand Meadow artifacts in this quarter without heat-treatment. With only 11 Grand Meadow artifacts recovered in this quarter with cortex, all in Deposit 3, only 7.28% of all Grand Meadow artifacts had cortex. Grand Meadow artifacts with cortex must be on average heavier than other Grand Meadow artifacts in this quarter without cortex, as their presence by count (7.28%) is slightly less than their presence by weight, which is 13.24% (Table 49). Only four Grand Meadow artifacts with rind were found in this quarter, two of them in Deposit 3. The

majority of the weight of Grand Meadow artifacts with rind comes from these two artifacts which total 8.609g in Deposit 3 (Table 49).

Table 50

Feature 5 NE Grand Meadow with Heat-treatment, Cortex, and Rind Presence by Count				
Deposit	HT	Cortex	Rind	Total
1				1
2	1			7
3	15	11	2	125
4			1	4
5				5
6	3		1	9
Total	19	11	4	151
Presence	12.58%	7.28%	2.65%	

Comparing the Northwest and Northeast Quarters of Feature 5

Feature 5 Northern Half Artifact Ubiquity

Comparing the northeast quarter to the northwest quarter of Feature 5 confirms a concentration for all category of artifacts in the middle of the feature's profile. Based on frequency, pottery, lithic, and zoological artifacts are all concentrated within Deposit 3 within the northeast quarter (Table 41). In the northwest quarter, a clear concentration of pottery and lithic artifacts exists between 65-75 centimeters (Table 29), which is roughly in the middle of Deposit 3. Zoological artifacts are more dispersed but are still concentrated in the middle of the profile, between 65-100 centimeters, which still is encompassed by Deposit 3.

Lithic and pottery artifacts are not well represented in the lower portion or upper portion of the northern half's profile. Zoological artifacts are better represented in the upper portion of this feature's northern half. Forty-two zoological artifacts were recovered between 30-35 centimeters in the northwest quarter (Table 29), while Deposit 2 had the most zoological material by weight with a total of 128.351 grams (Table 40), even though it only had 22 zoological artifacts (Table 41).

Only two pieces of pottery were recovered in Deposit 6 in the northeast quarter (Table 41) and 4 pieces of pottery were found in the last ten centimeters of the northwest quarter (Table 29). While there are only 2 pieces of pottery between 150-155 centimeters, the last level of the northwest quarter, their

weight is notable and amounts to 97.914 grams. Only eight lithic artifacts were found in the last 15 centimeters of the northwest quarter, while Deposits 5 and 6 both only had 12 and 13 lithic artifacts, respectively. In both quarters, the weight of lithics is not comparable. The northeast quarter almost has double the weight of lithics as the northwest quarter (Tables 28 and 40).

Feature 5 Northern Half Lithic Raw Material

Prairie du Chien and Grand Meadow are well represented throughout the northern profile of Feature 5, with an exception within the bottom 20 centimeters (Tables 32 and 44: 135-155 centimeters). Cedar Valley, Hixton, and Quartzite are more restricted throughout the profile. Cedar Valley, with the exception of two artifacts found between 140-145 centimeters, is concentrated throughout the middle of the profile, though in low numbers. Hixton, only found in the northwest quarter, is also concentrated in the middle of the profile, but only found in three levels. Quartzite was only recovered in the northeast half, found in Deposits 1 and 3. One flake of Burlington was also only found in the northeast half at the bottom of the feature. In total, throughout the entire northern half of Feature 5, only six Quartzite artifacts were found, eight Cedar Valley artifacts, and seven Hixton artifacts. While present within the feature, these three raw materials were obviously not deposited in high quantities.

By count and by weight, Prairie du Chien and Grand Meadow are both concentrated within the middle of the feature. Within the northwest quarter, Prairie du Chien and Grand Meadow are both well concentrated by count between 60-75 centimeters (Table 32). In the northeast quarter, these two raw materials are both heavily concentrated in Deposit 3 (Table 44), which correlates with the concentration in the northwest quarter. Both Prairie du Chien and Grand Meadow are poorly represented outside Deposit 3 in the northeast quarter.

Feature 5 Northern Half Prairie du Chien

Heat-treated Prairie du Chien is well represented throughout the northern profile. Heat-treated Prairie du Chien was recovered in all deposits in the northeast quarter except Deposit 1 (Table 45) and was found in 16 of the 24 levels in the northwest quarter (Table 33). Only one level (35-40 centimeters) at the top of the feature between the depths of 25-50 centimeters in the northwest quarter had heat-treated

Prairie du Chien, and it was only found within three of the bottom nine levels, showing its clear concentration in the center of the feature for this quarter. While Prairie du Chien is present in the bottom three deposits of the northeast quarter, it is only represented by limited quantities, with neither Deposit 4, 5, or 6 having more than 0.7 grams of heat-treated Prairie du Chien (Table 34). In other words, while well represented throughout the profile of the northern half of Feature 5, heat-treated Prairie du Chien by weight and count is clearly concentrated in the middle of the feature's profile.

Prairie du Chien with cortex is also concentrated in the middle portion of the profile, but in a less dense nature (Tables 35 and 47). Deposit 3 is the only deposit in the northeast quarter to have Prairie du Chien with cortex, though the 20 Prairie du Chien artifacts with cortex in that deposit amount to a significant weight with 291.682 grams (Tables 46 and 47). Prairie du Chien with cortex is present throughout the middle of the profile in the northwest quarter (Table 33), throughout depths which correlate with Deposit 3 in the northeast quarter, which is the only deposit with Prairie du Chien with cortex. Higher up in the profile, Prairie du Chien with cortex is present in two of the first three levels in the northwest quarter. The level between 35-40 centimeters has the most Prairie du Chien with cortex by weight and by count (Tables 34 and 35). No Prairie du Chien with rind was found in either quarter.

Feature 5 Northern Half Grand Meadow

Grand Meadow with heat-treatment and cortex (Tables 38 and 47) is not as present throughout the feature profile as Prairie du Chien with heat-treatment. Grand Meadow with heat-treatment is loosely concentrated in the middle of the profile between both quarters. In the northwest quarter of this feature there are no continuous levels that contain Grand Meadow with heat-treatment. Deposit 6 at the bottom of the feature also has heat-treated Grand Meadow, but not in any significant number or weight.

Grand Meadow with cortex is present in six of the 26 levels in the northwest quarter with five of these six levels occurring in the middle of the feature's profile between 60-95 centimeters (Table 36). One Grand Meadow artifact with cortex was also encountered between 140-145 centimeters. In the northeast quarter, Grand Meadow with cortex is present only in Deposit 3 (Table 48), which correlates to the five levels in the northwest quarter containing Grand Meadow with cortex. While Grand Meadow with cortex

appears to be present throughout a larger area of the feature's profile in the northwest quarter, there were only nine Grand Meadow artifacts with cortex in this quarter, with the northeast quarter containing 11, and as mentioned, all 11 coming from Deposit 3.

In total, only five Grand Meadow artifacts with rind were recovered throughout the entire northern half of Feature 5. Two different levels in the northwest quarter, between 40-45 centimeters and between 85-90 centimeters, contained one Grand Meadow artifact with rind each (Table 38). Rind is found on Grand Meadow in three different deposits in the northeast quarter, for a total of only three artifacts (Table 50). Deposits 3, 4, and 6 have Grand Meadow with rind, though the single artifacts in Deposits 4 and 6 total less than 0.5 grams combined (Table 49). The two Grand Meadow artifacts with rind found in Deposit 3 amounted to much more weight, with 8.609 grams.

Chapter 6: Discussion

Comparing Feature 1 and Feature 5

Storage and trash pit features are an often-cited feature that many researchers have used to help define Oneota village sites (Dobbs 1984, Schirmer 2002). Both Features 1 and 5 can be identified as refuse pits due to the abundance of broken pottery, crushed bone, and waste debitage. The archeological material that is deposited in these pits, though deposited as refuse, offers important opportunities to understand the lifeways practiced within any prehistoric village. Although only the northern halves of Features 1 and 5 were used for this research's analysis, the size of the two features and the contents within still allow for a good sample size to understand the depositional nature of the material culture used by people inhabiting the Vosburg site. Analyzing refuse features by excavation level allows for specific aspects of prehistoric life to be reconstructed: how were these pit features filled with refuse? Were they filled all at once, with their contents either representing a single waste-creating behavior or a single episode of site management? Or were they filled over time, representing many different waste-creating behaviors? The nature of how these pits were filled can help archeologists understand one more facet of prehistoric life. If features dated from different times indicate different depositional natures, then these features might represent different survival strategies or different cultural behaviors.

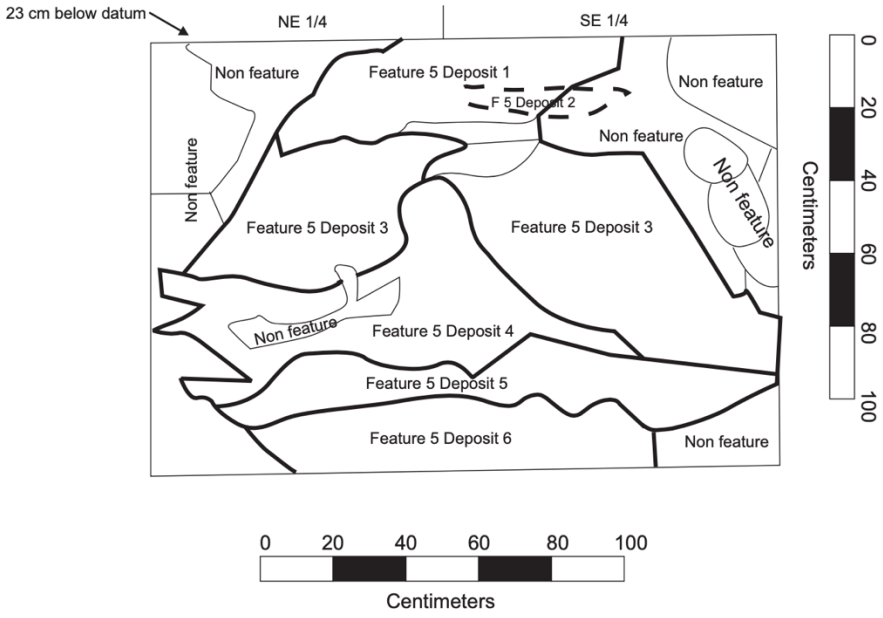
Both Features 1 and 5 are considered to be refuse features; while at some point before being filled with refuse, these features might have been used as storage features and filled with valuable items such as maize, they were eventually filled with refuse. The artifacts recovered within these two features show significant wear, or are even simply completely broken, like the hundreds of pottery sherds recovered. An abundance of crushed and broken animal bone also helps to identify these two features as refuse features.

Feature 1 was discovered as an ovular, dark stain of "greasy" silty loam around 150 centimeters at its widest. The dark soil was described as a silty loam, and upon excavation it was revealed to extend 95 centimeters below surface (no comprehensive feature profile is available). As a plowed site, it is impossible to say with certainty where the top of such features at Vosburg truly begin, so no true total depth for these two features is available, but their extent below the surface gives at least some measure of

their size. With one half of its contents excavated, it was revealed that Feature 1 had a bell-shaped profile, with its bottom undercutting the upper half of the feature.

Feature 5 was also discovered as an ovular, dark stain containing "greasy" silty loam. The dark soil making up the feature was described as a silty loam, and at its widest the stain was measured to be 160 centimeters. Upon excavation the feature was revealed to extend 155 centimeters below surface, more than 60% deeper than Feature 1. Feature 5 also proved to have a bell-shaped profile (Figure 11), even though its undercutting appears to be more pronounced. With one half of its contents removed by arbitrary levels, distinct deposits were identified within its profile, as opposed to Feature 1's profile which did not reveal distinct depositional boundaries.

Figure 11: Eastern Profile of Feature 5 from the 2012 Vosburg Excavation



Due to its significantly larger size, it was to be expected that Feature 5 would contain more artifacts of each category than Feature 1 (this is assuming these features were used and refilled with identical cultural processes). Yet this expectation holds true only with zoological artifacts. Feature 5 contained more lithic material by weight and nearly as much pottery material by weight (Table 51) yet Feature 1 contained more lithic and pottery artifacts by significant amounts (Table 52). The zoological

material recovered in Feature 5 was more than 3 times in weight than what was found in Feature 1, and more than double by artifact count. It is interesting to note that Feature 1 had a very similar amount of pottery, zoological, and lithic artifacts (1,222 pottery, 1,234 lithics, and 1,222 zoological) (Table 52) but in Feature 5 only pottery and lithic materials had similar counts (725 pottery and 767 lithic) (Table 51).

Table 51

Artifact Presence by Weight (g) for Northern Halves of Feature 1 and 5		
Northern Half of Feature 1		
Pottery	Lithic	Zoological
761.473	1,253.27	102.42
Northern Half of Feature 5		
Pottery	Lithic	Zoological
702.312	1,664.48	325.156

Table 52

Artifact Presence by Count for Northern Halves of Feature 1 and 5		
Northern Half of Feature 1		
Pottery	Lithic	Zoological
1,222	1,234	1,222
Northern Half of Feature 5		
Pottery	Lithic	Zoological
725	767	2,740

Although it is heavily outweighed by the 275 PDC artifacts found in Feature 5 (Table 53), more GM artifacts were recovered in Feature 5 than any other material, although only by a small amount; there are only 19 more GM artifacts than PDC artifacts in Feature 5 (Table 54). The total weight of PDC artifacts recovered in this feature is 425 g compared to the 46 g of GM. On average, the PDC artifacts found in Feature 5 weigh 1.54 g, while GM artifacts weigh on average 0.159 g. The amount of PDC in Feature 1 is much greater compared to the other lithic raw materials, and unlike in Feature 5, this is also represented in the total weight of each raw material.

Table 53

Raw Material Presence by Weight (g) for Northern Halves of Feature 1 and 5					
Northern Half of Feature 1					
PDC	GM	Hixton	Cedar Valley	Quartzite	Burlington
412.344	56.302	1.596	0.921	0	0
Northern Half of Feature 5					
PDC	GM	Hixton	Cedar Valley	Quartzite	Burlington
425.083	46.969	0	0.097	84.118	0.024

Table 54

Raw Material Presence by Count for Northern Halves of Feature 1 and 5					
Northern Half of Feature 1					
PDC	GM	Hixton	Cedar Valley	Quartzite	Burlington
944	263	18	7	0	0
Northern Half of Feature 5					
PDC	GM	Hixton	Cedar Valley	Quartzite	Burlington
275	294	0	8	6	1

Feature 1 contains a clear preference for PDC artifacts, indicated by both artifact count and weight. In total, PDC artifacts in Feature 1 make up more than 3 times the GM artifacts. On average, the PDC artifacts in Feature 1 are significantly lighter in weight than those found in Feature 5, with average PDC artifact in Feature 1 weighing 0.437g compared to the average weight of 1.54g from Feature 5. Inversely, the GM artifacts in Feature 1 are heavier in weight than those recovered in Feature 5, with the average GM artifact weighing 0.214g compared to 0.159g from Feature 5. It is clear when comparing PDC to GM weight and count from these two features that PDC was preferred within both features. The high amount of GM artifacts in Feature 1 and 5, when considering their low total weight, likely represents a later stage of chipped-stone tool reduction. Similarly, the PDC artifacts in Feature 1 likely represent a later stage of chipped-stone tool reduction compared to the PDC artifacts in Feature 5.

Hixton Orthoquartzite was only recovered in Feature 1, while Cedar Valley was recovered in almost equally small numbers between the two features. Even though in low numbers, the Cedar Valley artifacts in Feature 1 are significantly heavier than those recovered in Feature 5. Again, this difference in size, although not well confirmed by a large sample size, most likely indicates different stages of stone tool reduction. Both Quartzite and Burlington Chert were only found in Feature 5 which contained only 6 pieces of Quartzite and only one piece of Burlington.

As previously mentioned, PDC artifacts found in Feature 5 are on average heavier than those in Feature 1. This trend is true for PDC artifacts with heat-treatment and especially with cortex. The PDC artifacts with heat-treatment and cortex in Feature 5 make up more weight than those in Feature 1 (Table 55), even though Feature 1 has more than triple the PDC artifacts with these features than Feature 5 (Table 56). The average PDC artifact with heat-treatment in Feature 5 weighs 3.06 g, and in Feature 1 the average heat-treated PDC artifact is only 0.649 g. In total, more than half the PDC artifacts in Feature 1 were heat-treated, while just less than half were heat-treated in Feature 5. Rind was found on PDC artifacts in Feature 1, though only in small numbers.

Table 55

Presence of PDC with Heat-treatment, Cortex, and Rind by Weight (g) for Northern Halves of Features 1 and 5		
Feature 1		
HT	**Cortex**	**Rind**
306.982	257.633	7.366
Feature 5		
HT	**Cortex**	**Rind**
379.931	303.711	0

Table 56

Presence of PDC with Heat-treatment, Cortex, and Rind by Count for Northern Halves Features 1 and 5		
Feature 1		
HT	**Cortex**	**Rind**
473	151	5
Feature 5		
HT	**Cortex**	**Rind**
124	30	0

PDC artifacts with heat-treatment and cortex from Feature 5 are on average heavier than those from Feature 1, and the same is true when considering GM artifacts, though not nearly in such a significant way. The average GM artifact with heat-treatment in Feature 5 weighs 0.222g, while in Feature 1 the average heat-treated GM artifact weighs 0.186 g. (Tables 57 and 58). The average GM artifact with cortex from Feature 5 weighs 0.652 g, while in Feature 1 the average weight is 0.578 g. Six GM artifacts with rind with a total weight of 9.631 g were found in Feature 5, on average much heavier than those from Feature 1 which contained 4 GM with a total weight of 1.349 g.

Table 57

Presence of GM with Heat-treatment, Cortex, and Rind by Weight (g) for Northern Halves of Features 1 and 5		
Feature 1		
HT	**Cortex**	**Rind**
6.654	21.507	1.349
Feature 5		
HT	**Cortex**	**Rind**
4.292	11.562	9.631

Table 58

Presence of GM with Heat-treatment, Cortex, and Rind by Count for Northern Halves of Features 1 and 5		
Feature 1		
HT	**Cortex**	**Rind**
30	33	4
Feature 5		
HT	**Cortex**	**Rind**
23	20	6

Refuse Feature Discussion

When discussing the contents of Feature 1 and 5 and their greater implications, it is vital to keep their radiocarbon date assays in mind. Feature 1 was given a radiocarbon age of 600 ± 30 (Table 2), with a 1σ range of AD1307-1399. Feature 5 was given a radiocarbon age of 610 ± 30, with a 1σ range of AD 1302-1396. It is important to note the similarity between the two radiocarbon dates.

In both features, Prairie du Chien Chert is the prominent lithic raw material. While the amount of Grand Meadow Chert artifacts is slightly more than the PDC artifacts in Feature 5, the 275 PDC artifacts recovered in that feature amount to a weight (425.083g) that dwarfs the 294 GM artifacts (46.969g) (Tables 55 and 56). The average weight for GM artifacts is lower than the average weight of PDC artifacts in both features. This pattern has implications for lithic procurement. The larger pieces of PDC debitage might represent a more readily available source of that material to peoples living along the Blue Earth River, while the smaller GM artifacts might represent a more focused effort of material conservation (Patterson 2007, Anderson 2018)

In total, of all the GM artifacts recovered from both Feature 1 and 5, only 9.52% of the artifacts had cortex. Almost none of the artifacts had rind (1.8%). In contrast, 14.85% of PDC artifacts had cortex, which as already mentioned, were on average heavier than the GM artifacts. The larger amount of GM with cortex from these features compared to the lower frequency of artifacts with rind implies that wherever these materials were being sourced, it is more likely to be an outcrop of Grand Meadow Chert than glacial till (Dobbs 1984). Anderson (2018) and Dobbs (1984) both believed prehistoric peoples at the Vosburg site were making direct trips to the Grand Meadow quarry (21MW8) site in southeast Minnesota.

The lithics recovered in both features also portray an important process of lithic tool making. In the northern half of Feature 1, just more than half (50.1%) of the Prairie du Chien artifacts recovered are heat-treated (Tables 20.2 and 21.2). In the northern half of Feature 5, just less than half (45.1%) of the PDC artifacts are heat-treated. In comparison, only 11.4% of the GM artifacts recovered in Feature 1 showed sign of heat-treatment, while in the northern half of Feature 5 only 7.8% of GM artifacts were heat-treated (Tables 20.2 and 22.2). These numbers show a clear behavior of tool making at the Vosburg site. Tools made from PDC often underwent a heat-treating process, a process rarely applied to other materials such as GM. This specific behavior can be due to a variety of reasons. The PDC artifacts recovered at the Vosburg site are on average larger than those made of GM. This fact implies that PDC artifacts at Vosburg underwent each stage of lithic production. It is likely large nodules of PDC were

knapped at the site, involving steps of lithic reduction that might not have been necessary with smaller nodules of GM. It is possible the craftspeople at Vosburg preferred to introduce materials to heat-treatment at these earlier stages of lithic reduction.

Another possibility for why more PDC is heat-treated than GM is due to the coarse nature of the material. GM tends to be a glassy, fine-grained materials, and easily shaped by knapping. On the other hand, PDC in southern Minnesota tends to be rough, coarser grained, and as a result, harder to knap. The main reason to introduce materials to heat-treatment is to achieve a more "malleable," easier to knap stone. Without heat-treatment, most GM material is already a nice material. The same cannot be said for PDC, which might explain its high tendency to be heat-treated at Vosburg. Some reports (Hood and McCollough 1976 as seen in Ahler 1983) also state that fine-grained material can often have little improvement after heat-treatment, and the process can even be "generally destructive" to the material.

The nature of the deposits within the two features also allows insight to prehistoric domestic life at the Vosburg site. The northeast quarter of Feature 5 was the only quarter analyzed for this project that was actually excavated by deposit, giving valuable insight into the nature of the filling of the feature, but the method of 5 centimeters-level excavation of the other quarters also can allow for some idea of how different deposits were added to each feature. The vast majority of artifacts recovered in the northeast quarter of Feature 5 were found in the middle deposit, Deposit 3 (Table 15.3). The majority of artifacts found in this deposit and all other deposits in this quarter were zoological. Excluding zoological artifacts, four of the six deposits had more lithic artifacts by count than pottery. Of these four deposits with more lithic artifacts than pottery, one deposit (Deposit 4), has vastly more pottery by weight (13.353g) than lithics by weight (1.019g) (Tables 15.2 and 15.3). The changing ratio of artifact categories between each deposit, specifically the altering abundance of pottery and lithics, demonstrates the different nature of each deposit. The bottom deposits of Feature 5 (Deposits 4 - 6) and the upper deposits (Deposits 1 and 2) might represent everyday activities. Deposit 3 might represent a larger cleaning event, in which multiple areas of debris within a house or village are relocated into the feature.

Just like Feature 5, there is no 5 centimeters level in either quarter of Feature 1 wherein all three classes of materials have a high concentration (Tables 3.3 and 7.3). There is however a high concentration of all artifacts spread throughout multiple levels which are located within the middle of the feature profile. This concentration of artifacts in Feature 1 might represent something like Deposit 3 in Feature 5. Again, the bottom and top of the feature appear to represent artifacts from everyday activities, as the different material classes entered the waste stream at fairly independent rates; the frequent differences in the rates of deposition for pottery, lithics, and zoological materials suggest that while people were generally disposing of waste containing all materials at most times, there are observable times when one or another waste material is the most dominate. The abundance of one material over another implies a specific behavior performed (e.g. tool making, food preparation, etc.). A stark abundance of all three artifacts within one area in the feature, possibly representing a defined deposit, even if not confined to one 5 centimeters level, suggests a larger area of a house or village was cleaned and the refuse relocated into the feature, an area large enough to include the artifacts from multiple behaviors.

One large difference between Feature 1 and 5 is the zoological artifacts, which by number are more abundant than any other artifact category within Feature 5. There are almost 2,000 more zoological artifacts in Feature 5 than lithic or pottery artifacts (Table 52), even though the total weight for lithic and pottery artifacts within Feature 5 is much higher than the total weight of zoological remains (Table 51). This consistent abundance of animal bone throughout the feature could imply that this pit was used by one or multiple houses at the Vosburg site for domestic cleaning over a period of time, as game is usually processed and consumed within a domestic setting, compared to tool or pottery making which can be done around the village in specific areas not related to specific household locations. The continued vertical presence of zoological remains throughout the feature profile could imply the feature was open and used for a prolonged period.

The zoological analysis of Features 1 and 5 offers more insight into the nature of their deposits. Rutter (2023) concluded Feature 1 likely contained archeological material produced during a feasting

event. Of all the animal remains examined in Feature 1, 64.5% showed sign of burning, as compared to only 20.72% in Feature 5. Feature 1 also showed a "higher density of water-based resources (i.e., fish and mussel shells) while Feature 5 seems to be a more general refuse pit with a higher density of mammal remains" (Rutter 2023:76). While Feature 5 has no clear depositional events of zoological material, Rutter (2023) identified deposits in Feature 1 at 40-55 centimeters in the northeast quarter and 50-60 centimeters in the northwest quarter. Applying these findings, Rutter concluded "Feature 1 may be linked to a large eating event, possibly a feasting event, where fish and bivalves were harvested in large quantities…this helps explain the high rates of burnt material and distinct deposition" (2023:76). A similar feature was reported by Dobbs (1984), who described a refuse feature with several species of bottom feeding fish, leading Dobbs to link the feature to a large eating event.

While Rutter (2023:77) agrees with the findings of this research and states Feature 5 "is more likely to be a long-term refuse pit that was consistently used to deposit zoological materials," Stebbins (2023) suggests that Feature 5 might be more complex. Stebbins (2023) identified a distinct deposit of botanical material in the northwest quarter of Feature 5 at 50-65 centimeters, another distinct deposit between 75-80 centimeters, and a third between 85-100 centimeters. A diverse abundance of botanicals from the deposit between 50-65 centimeters lead Stebbins (2023:65) to state "this deposit is likely due to a feasting episode." Among the botanicals identified in this deposit, Stebbins noted the presence of *Zea mays*, *Chenopodium*, *Cucurbita pepo* (Squash), *Helianhus annus* (Sunflower), and *Prunus virginiana* (Bitter-berry) (see Stebbins 2023 for full description of identified botanicals). Concerning the distinct depositional layer of botanicals between 75-80 centimeters, Stebbins (2023:65) states this level "yielded numerous wood and non-wood specimens that were not present or had a limited presence elsewhere in the feature." Among the identified wood specimens is an abundance of *Cornus* sp. wood (Dogwood), which Stebbins (2023) states is a culturally important wood, the bark of which is often used for smoking.

The last distinct deposit of botanicals identified by Stebbins (2023:66) between 85-100 centimeters is described again as having "numerous wood and non-wood specimens that were not present or had a limited presence elsewhere in the feature." Along with *Cornus* sp. wood, *Nicotiana* sp.

(Tobacco), was also identified, another culturally significant plant associated with smoking. Rutter (2023) also identified zoological remains within this deposit (between 105-110 centimeters) which were identified as bald eagle phalanx. Rutter (2023:69) explained the phalanx was likely part of an eagle wing fan, as "polishing of the bone surface is evident on the proximal and distal ends, likely caused by hafting the bone to create the fan." A ceremonial pottery vessel was also identified within this deposit (100-133 centimeters). Neumann (2017:126) described this vessel segment as having "Oneota-like decorative themes of the Upperworld Thunderbird or Thunderer [with] morphology more similar to Link type vessels than Oneota." This vessel segment is the only pottery artifact recovered from Vosburg that has been identified as matching Link type pottery style. Stebbins (2023) concludes that the presence of the eagle wing fan, the Link type pottery vessel, and the presence of *Cornus* sp. and *Nicotiana* sp., indicates Feature 5 contained at least one deposit with artifacts related to a ritual/ceremonial activity.

Blue Earth Oneota as Seen Today

Pit feature analysis can help determine the survival strategies employed by the prehistoric peoples living at the Vosburg site. How a group is able to interact with the landscape in a way that allows for the ongoing acquisition of food, water, and shelter inevitably creates unique survival strategies that can be interpreted by archeologists as unique cultures. Specific forms of analysis, such as botanical and zoological analysis, allows archeologists to understand what parts of the landscape are actually being acquired and processed, and in what ways they are being used. Other forms of artifact analysis allow for different insights into prehistoric lifeways. Lithic analysis allows archeologists to understand the dimensions of prehistoric life involved with lithic tool production. This behavior includes raw material acquisition, which possibly involves trade with other groups or the deliberate movement across the landscape. Lithic analysis of the artifacts found at the Vosburg site in 2012 shows an abundance of Prairie du Chien material, with Grand Meadow Chert also present in numbers that imply an ongoing tradition of raw material acquisition.

Lithic analysis of the artifacts recovered from Features 1 and 5 show two trends concerning Prairie du Chien chert. Only 5 PDC artifacts had observable rind, compared to the 181 which had cortex, making up 14.9% of the total PDC artifacts found in these two features. Dobbs (1984:86) asserted that the peoples living at Vosburg likely obtained PDC material from secondary gravel deposits deposited during the Cretaceous. While this is still possible, the higher amount of PDC with cortex than with rind possibly implies Blue Earth peoples were acquiring nodules of PDC from outcrops (Anderson 2018). The same can be said for Grand Meadow Chert, with cortex present on 9.5% of artifacts.

The second behavior that is clear from the analysis of lithics from Feature 1 and 5 is the tendency for heat-treating PDC material without the inclusion of other materials such as GM. The high amount of PDC with signs of heat-treatment shows a strong familiarity with the material, implying the craftspeople at Vosburg understood when the material could be worked raw or when it was necessary to heat-treat. The lack of heat-treatment on other materials including on GM implies heat-treating was done only when necessary, and not as a reflexive process.

The lithic analysis of the 2012 excavation also showed a clear preference for certain materials for certain tools. Of the 18 end scrapers recovered from the 2012 excavation (in and out of features), 16 were of GM and 2 were of an indeterminate material. No scrapers were identified as PDC. This high preference for GM in the making of end scrapers matches the 90% correlation Dobbs found between end scrapers and what he called "Rapid Chert" (Dobbs 1984:87). The consistent use of such a high-quality material for end scrapers also emphasizes the importance of end scrapers and in turn the importance of hide processing to the prehistoric peoples at Vosburg.

Of the 23 projectile points found, only five were GM, while one was of an indeterminate material, with the remaining 17 being of PDC. Of these 17 PDC projectile points, five were heat-treated. PDC was obviously the preferred material for the projectile points recovered by the 2012 excavation. Such a strong correlation between projectile points and PDC was also found by Dobbs (1984).

Dobbs' excavations at Vosburg in 1979 were in a way hamstrung by the abundance of archeology there, specifically the pit features. The 1979 excavation was quickly overrun by pit feature excavation,

which demanded the time and manpower for much of the project. So, while much of our understanding of Blue Earth Oneota comes from the artifacts and data recovered the Vosburg site, much of our understanding of the Vosburg site comes from the artifacts and data recovered from pit features. Additionally, the majority of the data used in Dobbs' settlement pattern analysis from sites outside of Vosburg is derived from surface collections. This research applied pit feature analysis with complementary analysis of pit-derived data from previous research (Anderson 2018; Neumann 2017; Rutter 2023; Stebbins 2023) in the hopes of creating a data base that can be appropriately contrasted with Dobbs (1984).

The research performed by Neumann and Anderson has helped to contextualize the data and reporting from Dobbs. While Dobbs was able to establish the common motifs and pottery morphologies for Blue Earth, and relate them in some degree to other Oneota manifestations, Neumann's work established the unique nature of Blue Earth pottery. Anderson's work resulted in a similar understanding of the end scrapers used by both groups. Specific pottery motifs and morphologies appear to relate Blue Earth to the Oneota groups living in Red Wing only in a way that most Oneota complexes are related, but the 14C data from both areas suggests a possible temporal relation. The likely habitation of Vosburg around the turn of the 14th century coincides with the abandonment of major villages along the Mississippi in Red Wing, signaling the termination of the Bartron phase as Oneota groups transitioned to villages along nearby tributaries (Henning and Schirmer 2020). This shift in Red Wing, known as the initiation of the Spring Creek phase, might have also been related to the Oneota settlement along the Blue Earth River to the west. Henning (2007) suggests the first wave of the westward Oneota "bison pull" around this time during the turn of the 14th century. Radiocarbon dates from more Blue Earth sites outside of Vosburg along with further research focused on pottery analysis similar to that performed by Neumann (2017) can help establish the validity of this theory.

Just like in Wisconsin and Iowa, Oneota localities or regions appear in Minnesota in areas with distinct geographical boundaries, with what appears as "no man's land" between them (Schneider 2015). The nature of these separate but alike Oneota manifestations begs certain questions, with strong themes of

identity and human migration. The work performed by Dobbs only began to set the stage for these questions. Much about how the prehistoric peoples who inhabited Blue Earth sites lived their lives is much still unknown. The work performed on Blue Earth Oneota by Dobbs was a serious achievement for our understanding of not just Blue Earth Oneota but also Oneota as an archeological taxon in general. Yet today the 1984 dissertation no longer represents the archeological reality concerning Blue Earth Oneota. New research has expanded our understanding on Blue Earth, while still leaving much to be learned. We currently do not have sufficient data to picture the houses Blue Earth peoples built for living, or the landforms they altered for agriculture. Archeologists can only look to other Oneota manifestations and imagine that such things were similar enough for comparison. Archeological analysis that can help confirm or deny these alleged relations between Oneota complexes will help build a more vivid picture of the prehistoric peoples living at Vosburg and along the Blue Earth River. To test these theories of Oneota relations, archeologists studying Blue Earth Oneota are left with the basic questions for any researcher examining past societies: how did these people eat? What did these people eat? How did they build shelter? And how did these necessary tasks of survival build conceptions of social unity?

Chapter 7: Conclusions and Future Research

Dobbs' 1984 treatment of Blue Earth Oneota set the stage for our understanding of this unique late-prehistoric taxon. Dobbs' project was ambitious and wide in scope; he not only established six settlement types for Oneota sites within the Center Creek locality, he also created the composite type Blue Earth Trailed along with nine sub-varieties within this pottery type. Yet Dobbs was limited to the knowledge and technology of his time. The archeological community's understanding of Oneota has grown in the last 39 years since the 1984 dissertation, and new approaches to archeological research have been utilized to better understand the prehistoric past of the Upper Midwest.

Like with much of Oneota research, a theme of Dobbs' work with Blue Earth concerns the relation between this Oneota complex and the others scattered throughout the nearby states. Based on similarities in pottery style, Dobbs asserted that Blue Earth Oneota had possible relations to other Oneota complexes such as those in northwest and northeast Iowa, and also Red Wing, Minnesota. Future research can further test the relation between Blue Earth and the Oneota regions in Iowa, but Neuman asserted the relation between Blue Earth and Red Wing Oneota is built on the similarities that tie any Oneota complex to another, as statistical analysis showed their pottery to be "similar in the broad pottery attributes that identify a site as having a component representative of the Oneota tradition, [as] each location [Blue Earth and Red Wing] is a product of local processes concerning the norms and traditions of how exactly to form and decorate each vessel" (Neuman 2017:254). It is interesting to note that Red Wing Oneota pottery displays internal variation of pottery decoration that is not found in Blue Earth sites. Neuman (2017) states that Center Creek pottery displays 11% of purposeful variation, while Red Wing pottery displayed 20% variation. The more consistent style of pottery manufacturing in Center Creek implies a strong amount of interaction and perceived social unity between the peoples living at Center Creek.

Using artifact analysis of end scrapers, Anderson (2018) also demonstrated differences between Red Wing and Center Creek. Anderson's statistical analysis discovered that end scrapers found in both locations are statistically similar except for one factor: weight. On average Grand Meadow end scrapers from Center Creek are heavier and have less cortex than those found in Red Wing. This trend could imply

unique procurement systems employed at Center Creek, or it might imply different lithic reduction methods used, according to Anderson (2018). It is also possible that the larger Grand Meadow end scrapers represent increased pressures or incentives related to hide-production at Center Creek. Another possibility, not exclusive from the last, is larger Grand Meadow end scrapers were used at Center Creek for larger hides. Hide-workers at Center Creek might have worked more consistently on bison hides compared to Red Wing, where deer hides might have been more readily available adjacent to the Mississippi channel (Dobbs 1984). Regardless, Anderson asserted that the high presence of Grand Meadow Chert end scrapers, projectiles, and debitage at Blue Earth sites, and the large size of the tools and debitage of this material recovered from these sites implies more Grand Meadow Chert was being "quarried, transported, and used by residents of Blue Earth phase sites" (Anderson 2017:165).

Lithic analysis of the artifacts recovered in 2012 shows other patterns of lithic tool production. Almost half (49%) of all the Prairie du Chien artifacts recovered in the northern halves of Features 1 and 5 were heat-treated (Table 21.2), while only 10% of Grand Meadow showed signs of heat-treatment (Table 22.2). While Grand Meadow was consistently quarried and transported to Blue Earth sites, it was not subject to the same processes of lithic tool manufacturing as Prairie du Chien.

Examining artifact material presence by level in both weight and count also helps understand the nature of the pit features which so crowd the archeology uncovered at Blue Earth's type-site, Vosburg. Feature analysis showed that pottery, lithic, and zoological material was often being deposited within refuse pits independently. All three categories of artifacts are consistently present within each segment of both feature profiles, yet the prominent artifact type often shifts from level to level. The changing nature of the feature deposits could imply that the artifacts within the feature represent refuse from everyday behaviors, entering the waste stream independently of one another. The large concentration of artifacts found near the center of both features could also imply larger cleaning episodes, possibly after communal events. Rutter (2023) and Stebbins (2023) found evidence that both features could be related to feasting, with concentrations of fish bone found in Feature 1 and a diverse concentration of carbonized botanicals identified in Feature 5. Rutter and Stebbins were also able to build further understanding of Blue Earth

Oneota subsistence and site environment that Dobbs was not able to create. While Stebbins (2023) suggests that Big Woods vegetation was likely well-developed in the surrounding area of the Blue Earth River valley, Rutter (2023) states that bison hunting and butchering was performed off-site by Blue Earth hunters, with smaller sites related to these specific behaviors likely spread throughout strategic locations.

In short, Dobbs' dissertation no longer stands as an accurate representation of Blue Earth Oneota in reference to the actual data available today. Blue Earth Oneota should be seen as a local cultural phenomenon that existed within a specific span of time. The temptation to examine Blue Earth within the larger scope of the Oneota taxon is ever-present, but Oneota archeology has become a *massive* topic, making any comparative work between the different complexes a serious endeavor. Understanding Blue Earth within the context of the larger Oneota tradition is crucial, but such research can only be done in a productive manner after Blue Earth Oneota is examined as its own unique, localized culture.

Future Work

There is no shortage of Blue Earth Oneota archeology. Both Willow and Center Creek have more than 50 documented Oneota sites (Henning 2023), yet our understanding of Blue Earth is dominated by the archeology performed at the Vosburg site. As already mentioned in the discussion section of this chapter, the archeology undertaken at Vosburg during both the 1979 and 2012 excavation were dominated by the presence of overlapping pit features. These features obscure the presence of any activity areas that might be discerned from open floor excavations. The archeological understanding of the Vosburg site would benefit from future excavations that purposefully avoid pit features excavation in the pursuit of less obscured areas. It is likely that houses at the Vosburg site were not constructed atop refuse features, and it is also likely that Vosburg is not a prehistoric site entirely dotted with pit features. Other activity areas must exist, but their discovery will not be possible if the discovery of overlapping pit features is immediately given the limited resources of any future excavation. The temptation to dig any discovered pit is natural for a field archeologist, but the Vosburg site has more to offer.

The archeological understanding of Blue Earth Oneota would greatly benefit from the excavation of other Center Creek sites outside of Vosburg. The excavation of other villages or habitation sites would greatly help to put Vosburg in a more productive context. Radiocarbon dates from any other site would also help strengthen the current timeline allowed by current C14 dates. With this said, the excavation of any Willow Creek site would do great things for our perception of Blue Earth Oneota as well. Blue Earth archeology has suffered due to excavations that were not well documented or even written up at all. Future excavations in the area should have documentation and thorough reporting as a top priority.

Oneota has long been called a "pottery culture" throughout the past for good reason. Pottery is a unique form of artifactual material due to the plastic nature of its construction, allowing for great amounts of style to be embedded by the craftsperson. Neumann's 2017 research represents a promising future of analysis. The future excavation of Blue Earth sites, hopefully with careful documentation of pottery provenience and possible association with 14C dates, can allow for similar studies to be performed, possibly leading to an even more in depth understanding of Blue Earth pottery and identity. Pottery analysis is used in Oneota research to help bring to life the actual lifeways of past peoples. Discussions of human migration and religious beliefs, important anthropological topics in archeology, can all be facilitated through research of pottery style.

Future research could also elaborate on the work performed for this project. While this research analyzed artifacts found in feature deposits by excavation level, future work could focus more energy on what types of pottery were found between levels; if different pottery styles exist within one feature and if there is vertical stratigraphy between them. Future research could also focus closer on the volume of refuse features compared to the artifactual material within. While this project did document the size of the float samples recovered and processed, time and resources did not allow for calculations of artifact density per liter of feature soil. Understanding the artifactual density within a pit feature, especially when combined with a thorough catalog of these artifacts, would result in a better comprehension of the nature of these features. There is no shortage of work to be done when it comes to furthering our knowledge of the Blue Earth Oneota taxon.

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Appendix: Artifact Catalog of Northern Halves of Feature 1 and 5 from the 2012 Vosburg (21FA02) Excavation

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.99	NE	1		55-60	Pottery	Sherd	Rim, Shoulder, Handle	1	43.876	Pottery				G1
2012.3.102	NW	1		55-60	Pottery	Sherd	Rim	1	9.791	Pottery				G1
2012.3.103	NE	1		55-60	Pottery	Sherd	Rim	1	9.942	Pottery				G1
2012.3.104	NE	1		35-40	Pottery	Sherd	Rim	1	15.611	Pottery				G1
2012.3.105	NW	1		45-50	Pottery	Segment	Rim, Shoulder, Handle	1	174.000	Pottery				G1
2012.3.106	NW	1		60-65	Pottery	Sherd	Rim	1	5.793	Pottery				G1
2012.3.107	NW	1		55-60	Pottery	Sherd	Rim	1	9.111	Pottery				G1
2012.3.395	NW	1		60-65	Pottery	Sherd	Shoulder	1	7.447	Pottery				G1
2012.3.396	NW	1		55-60	Pottery	Sherd	Shoulder	1	4.923	Pottery				G2
2012.3.397	NE	1		30-35	Pottery	Sherd	Rim	1	5.351	Pottery				G1
2012.3.398	NW	1		80-85	Pottery	Sherd	Body	1	7.912	Pottery				G1
2012.3.399	NW	1		60-65	Pottery	Sherd	Shoulder	1	6.754	Pottery				G2
2012.3.400	NW	1		30-35	Pottery	Sherd	Lip	1	1.951	Pottery				G2
2012.3.401	NW	1		75-80	Pottery	Sherd	Shoulder	1	2.380	Pottery				G2
2012.3.457	NE	1	Rodent	35-40	Pottery	Sherd	Shoulder	1	13.250	Pottery				G1
2012.3.458	NE	1		45-50	Lithic	Tool	Multitool	1	41.966	PDC		1	1	G1
2012.3.459	NW	1		55-60	Pottery	Sherd	Shoulder	1	10.382	Pottery				G1
2012.3.460	NW	1		80-85	Pottery	Sherd	Shoulder	1	5.632	Pottery				G2
2012.3.461	NW	1		55-60	Pottery	Sherd	Shoulder	1	5.488	Pottery				G2
2012.3.462	NW	1		45-50	Pottery	Sherd	Shoulder	1	8.844	Pottery				G1
2012.3.463	NE	1		40-45	Pottery	Sherd	Shoulder	1	10.046	Pottery				G1
2012.3.464	NW	1		55-60	Pottery	Sherd	Shoulder	1	18.732	Pottery				G1
2012.3.465	NE	1	Rodent	35-40	Pottery	Sherd	Shoulder	1	1.258	Pottery				G2
2012.3.466	NE	1		45-50	Pottery	Sherd	Shoulder	1	7.681	Pottery				G2
2012.3.467	NE	1		80-85	Pottery	Sherd	Shoulder	1	2.153	Pottery				G2
2012.3.1154	NE	1		35-40	Lithic	Tool	Mano	1	509.000	Indeterminate				G1
2012.3.98	NE	5	3	115-120	Pottery	Vessel	Rim, Shoulder	1	153.000	Pottery				G1
2012.3.100	NW	5		120-125	Pottery	Sherd	Rim, Shoulder, Handle	1	33.032	Pottery				G1
2012.3.108	NW	5		65-70	Pottery	Sherd	Rim, Shoulder	1	56.730	Pottery				G1
2012.3.109	NW	5		65-70	Pottery	Sherd	Lip	1	3.405	Pottery				G1
2012.3.110	NE	5	3	70-75	Pottery	Sherd	Shoulder	1	5.366	Pottery				G1
2012.3.298	NE	5	D4	125-130	Pottery	Sherd	Body	2	6.911	Pottery				G1
2012.3.299	NE	5	1	53-58	Lithic			8	27.148					
2012.3.300	NE	5	1	30-47	Pottery	Sherd		5	4.512	Pottery				
2012.3.301	NE	5	1	30-47	Lithic	Tool		1	79.482	Quartzite				G1
2012.3.302	NE	5	1	30-47	Lithic	Debitage		1	1.566	GM				G3
2012.3.303	NE	5	1	30-47	Lithic	Debitage		2	0.982	PDC				G3
2012.3.304	NE	5	1	30-47	Lithic	Debitage		4	0.150	PDC				G5
2012.3.305	NE	5	1	58-63	Pottery	Sherd	Body	1	3.019	Pottery				G2
2012.3.306	NE	5	6	125-130	Pottery	Sherd	Body	2	7.716	Pottery				
2012.3.309	NE	5	6	140-152	Pottery	Sherd	Body	1	4.928	Pottery				G2
2012.3.310	NE	5	6	140-152	Pottery	Sherd	Shoulder	1	9.117	Pottery				G1
2012.3.312	NE	5	D3	100-105	Pottery	Sherd	Shoulder	1	8.518	Pottery				G1
2012.3.313	NE	5	4	80-85	Pottery	Sherd	Body	1	2.106	Pottery				G1
2012.3.314	NW	5		85-90	Pottery	Sherd	Body	3	5.211	Pottery				G2
2012.3.315	NW	5		75-80	Pottery	Sherd	Shoulder	1	5.616	Pottery				G2
2012.3.316	NE	5	3	75-80	Pottery	Sherd	Shoulder	1	3.604	Pottery				G2
2012.3.317	NE	5	D3	110-115	Pottery	Sherd	Shoulder	1	6.422	Pottery				G1
2012.3.318	NE	5	D2	40-45	Pottery	Sherd	Shoulder	1	7.562	Pottery				G1
2012.3.319	NE	5	3	75-80	Pottery	Sherd	Shoulder	1	13.910	Pottery				G1

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.320	NE	5	D2	47-53	Pottery	Sherd	Body	1	11.307	Pottery				G1
2012.3.321	NW	5		55-60	Pottery	Sherd	Shoulder	1	1.672	Pottery				G2
2012.3.329	NE	5	3	68-75	Pottery	Sherd	Body	3	0.937	Pottery				
2012.3.330	NE	5	3	68-75	Pottery	Sherd	Shoulder	1	0.691	Pottery				G3
2012.3.331	NE	5	3	68-75	Pottery	Sherd	Shoulder	1	0.583	Pottery				G3
2012.3.332	NE	5	3	68-75	Pottery	Sherd	Body	2	14.213	Pottery				G1
2012.3.333	NE	5	3	68-75	Pottery	Sherd	Rim	1	8.927	Pottery				G1
2012.3.334	NE	5	3	68-75	Pottery	Sherd	Shoulder	1	4.862	Pottery				G2
2012.3.335	NE	5	3	68-75	Pottery	Sherd	Body	1	5.424	Pottery				G2
2012.3.336	NE	5	3	68-75	Lithic	Debitage		1	5.784	PDC		1	1	G2
2012.3.355	NE	5	D1	30-35	Pottery	Sherd	Shoulder	1	4.022	Pottery				G2
2012.3.472	NE	5	Deposit 3S	75-80	Lithic	Tool	Hammerstone	1	256.000	Indeterminate				G1
2012.3.1152	NE	5		125-130	Lithic	Tool	Fire-cracked Anvil	1	2729.000	Indeterminate				G1
2012.3.1161	NW	5		150-155	Pottery	Segment	Shoulder,Rim	1	97.812	Pottery				G1
2012.3.2734	NE	5	D3	85-90	Lithic	Debitage		1	0.039	GM		1	1	G4
2012.3.2735	NE	5	D3	85-90	Lithic	Debitage		3	0.335	PDC				G4
2012.3.2736	NE	5	D3	85-90	Pottery	Sherd	Body	2	2.575	Pottery				G3
2012.3.2737	NE	5	D3	85-90	Pottery	Sherd	Body	10	0.335	Pottery				G4
2012.3.2738	NE	5	D3	85-90	Lithic	Debitage		6	0.133	PDC				G4
2012.3.2739	NE	5	D3	85-90	Lithic	Debitage		2	0.018	PDC			1	G4
2012.3.2740	NE	5	D3	85-90	Lithic	Debitage		2	0.041	GM		1		G4
2012.3.2741	NE	5	D3	85-90	Lithic	Debitage		5	0.087	GM				G4
2012.3.2742	NE	5	D3	85-90	Lithic	Debitage		2	0.030	Quartz				G4
2012.3.2743	NE	5	D4	105-110	Lithic	Debitage		1	0.004	PDC			1	G4
2012.3.2744	NE	5	D4	105-110	Pottery	Sherd	Body	2	0.054	Pottery				G4
2012.3.2745	NE	5	D3	90-95	Pottery	Sherd	Body	1	0.069	Pottery				G4
2012.3.2746	NE	5	D3	90-95	Pottery	Sherd	Body	1	0.854	Pottery				G3
2012.3.2747	NE	5	D4	130-135	Pottery	Sherd	Body	2	2.283	Pottery				G3
2012.3.2748	NE	5	D4	130-135	Pottery	Sherd	Body	2	0.213	Pottery				G4
2012.3.2749	NE	5	D4	130-135	Lithic	Debitage		1	0.466	PDC			1	G3
2012.3.2750	NE	5	D4	130-135	Lithic	Debitage		1	0.144	PDC			1	G4
2012.3.2751	NE	5	D4	135-140	Lithic	Debitage		1	0.034	PDC				G4
2012.3.2752	NE	5	D4	120-125	Pottery	Sherd	Body	1	1.242	Pottery				G3
2012.3.2753	NE	5	D4	110-115	Pottery	Sherd	Body	3	0.389	Pottery				G4
2012.3.2754	NE	5	D4	110-115	Lithic	Debitage		2	0.029	PDC				G4
2012.3.2755	NE	5	D4	110-115	Lithic	Debitage		1	0.174	GM	1			G3
2012.3.2756	NE	5		20-25	Pottery	Sherd	Body	2	2.379	Pottery				G3
2012.3.2757	NE	5		20-25	Lithic	Debitage		3	0.562	PDC				G3
2012.3.2758	NE	5	D4	135-140	Pottery	Sherd	Body	1	1.154	Pottery				G3
2012.3.2759	NE	5	D4	135-140	Pottery	Sherd	Body	1	0.046	Pottery				G4
2012.3.2760	NE	5	D4	135-140	Lithic	Debitage		1	0.000	GM				G4
2012.3.2761	NE	5	D3	80-85	Pottery	Sherd	Body	1	0.143	Pottery				G4
2012.3.2762	NE	5	D4	125-130	Pottery	Sherd	Body	3	1.195	Pottery				G4
2012.3.2763	NE	5	D6	140-152	Pottery	Sherd	Body	1	0.263	Pottery				G3
2012.3.2764	NE	5	D6	140-152	Lithic	Debitage		1	0.158	GM	1			G3
2012.3.2765	NE	5	D6	140-152	Lithic	Debitage		2	0.172	PDC				G3
2012.3.2766	NE	5	D6	140-152	Lithic	Debitage		1	0.024	Burlington Chert				G4
2012.3.2767	NE	5	D6	140-152	Lithic	Debitage		2	0.004	GM				G4
2012.3.2768	NE	5	D3	120-125	Pottery	Sherd	Body	4	4.362	Pottery				G3
2012.3.2769	NE	5	D3	120-125	Pottery	Sherd	Body	6	0.475	Pottery				G4
2012.3.2770	NE	5	D3	120-125	Lithic	Debitage		2	0.009	PDC				G4
2012.3.2771	NE	5	D3	120-125	Lithic	Debitage		1	0.008	GM				G4

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.2772	NE	5	D3	120-125	Lithic	Debitage		1	0.841	PDC		1		G3
2012.3.2773	NE	5	D3	120-125	Lithic	Debitage		1	0.105	PDC			1	G4
2012.3.2774	NE	5	D3	120-125	Lithic	Debitage		1	0.026	GM				G4
2012.3.2775	NE	5	D3	95-100	Pottery	Sherd	Body	3	1.431	Pottery				G3
2012.3.2776	NE	5	D3	95-100	Pottery	Sherd	Body	2	0.902	Pottery				G3
2012.3.2777	NE	5	D3	95-100	Pottery	Sherd	Body	5	0.634	Pottery				G4
2012.3.2778	NE	5	D3	110-115	Lithic	Debitage		1	3.092	PDC			1	G2
2012.3.2779	NE	5	D3	110-115	Lithic	Tool	Biface	1	3.119	PDC			1	G2
2012.3.2780	NE	5	D3	110-115	Pottery	Sherd	Body	1	0.823	Pottery				G3
2012.3.2781	NE	5	D3	110-115	Pottery	Sherd	Body	15	0.679	Pottery				G4
2012.3.2782	NE	5	D3	110-115	Lithic	Tool	Utilized Flake	1	0.815	PDC			1	G3
2012.3.2783	NE	5	D3	110-115	Lithic	Debitage		3	0.985	PDC			1	G3
2012.3.2784	NE	5	D3	110-115	Lithic	Debitage		1	0.290	PDC		1		G3
2012.3.2785	NE	5	D3	110-115	Lithic	Debitage		4	0.412	PDC			1	G4
2012.3.2786	NE	5	D3	110-115	Lithic	Debitage		5	0.327	PDC				G4
2012.3.2787	NE	5	D3	110-115	Lithic	Debitage		4	0.123	GM				G4
2012.3.2788	NE	5	D3	110-115	Lithic	Debitage		2	0.021	PDC				G5
2012.3.2789	NE	5	D3	110-115	Lithic	Debitage		3	0.029	GM				G5
2012.3.2790	NE	5	D4	130-135	Lithic	Debitage		1	0.001	PDC			1	G5
2012.3.2791	NE	5	D4	130-135	Pottery	Sherd	Body	3	0.223	Pottery				G4
2012.3.2792	NE	5	D3	115-120	Lithic	Debitage		1	0.027	PDC				G3
2012.3.2793	NE	5	D4	125-130	Pottery	Sherd	Body	3	1.438	Pottery				G3
2012.3.2794	NE	5	D4	125-130	Pottery	Sherd	Body	1	0.018	Pottery				G4
2012.3.2795	NE	5	D4	130-135	Lithic	Tool	Utilized Flake	1	1.890	GM				G2
2012.3.2796	NE	5	D4	130-135	Lithic	Debitage		1	0.019	GM				G4
2012.3.2797	NE	5	D4	130-135	Lithic	Debitage		2	0.048	PDC				G5
2012.3.2798	NE	5	D4	130-135	Lithic	Debitage		2	0.035	GM				G5
2012.3.2800	NW	5		45-50	Lithic	Debitage		1	0.149	PDC				G4
2012.3.2801	NW	5		45-50	Lithic	Debitage		1	0.000	GM				G5
2012.3.2802	NW	5		25-30	Pottery	Sherd	Body	2	3.752	Pottery				G2
2012.3.2803	NW	5		25-30	Lithic	Tool	Expediant Scrapper	1	1.322	GM				G2
2012.3.2804	NW	5		25-30	Lithic	Debitage		2	0.721	PDC				G3
2012.3.2805	NW	5		25-30	Lithic	Debitage		1	0.142	GM				G4
2012.3.2806	NW	5		25-30	Pottery	Sherd	Body	5	0.425	Pottery				G4
2012.3.2807	NW	5		25-30	Lithic	Debitage		1	0.016	GM				G4
2012.3.2808	NW	5		25-30	Lithic	Debitage		1	0.027	PDC		1		G4
2012.3.2809	NW	5		25-30	Lithic	Debitage		1	0.040	PDC				G4
2012.3.2810	NW	5		25-30	Lithic	Debitage		1	0.000	GM				G5
2012.3.2811	NW	5		25-30	Lithic	Debitage		1	0.023	PDC				G5
2012.3.2812	NW	5		55-60	Pottery	Sherd	Body	1	0.076	Pottery				G4
2012.3.2813	NW	5		55-60	Lithic	Debitage		2	0.020	GM				G5
2012.3.2814	NW	5		40-45	Lithic	Debitage		1	0.666	GM	1			G3
2012.3.2815	NW	5		40-45	Pottery	Sherd	Body	2	0.090	Pottery				G4
2012.3.2816	NW	5		40-45	Lithic	Debitage		3	0.030	PDC				G5
2012.3.2817	NW	5		30-35	Lithic	Debitage		1	0.000	PDC				G5
2012.3.2818	NW	5		140-145	Lithic	Debitage		1	2.895	GM		1		G2
2012.3.2819	NW	5		140-145	Lithic	Debitage		2	0.178	GM				G3
2012.3.2820	NW	5		65-70	Pottery	Sherd	Body	1	0.336	Pottery				G3
2012.3.2821	NW	5		65-70	Pottery	Sherd	Body	6	0.368	Pottery				G4
2012.3.2822	NW	5		65-70	Lithic	Debitage		1	0.000	PDC				G5
2012.3.2823	NW	5		65-70	Lithic	Debitage		2	0.023	GM				G5
2012.3.2824	NW	5		80-85	Pottery	Sherd	Body	1	0.049	Pottery				G4

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.2825	NW	5		80-85	Lithic	Debitage		1	0.149	GM		1		G4
2012.3.2826	NW	5		80-85	Lithic	Debitage		1	0.073	PDC		1	1	G5
2012.3.2827	NW	5		50-55	Pottery	Sherd	Body	2	0.043	Pottery				G5
2012.3.2828	NW	5		50-55	Lithic	Debitage		1	0.065	PDC				G4
2012.3.2829	NW	5		50-55	Lithic	Debitage		1	0.018	GM				G4
2012.3.2830	NW	5		50-55	Lithic	Debitage		1	0.012	PDC				G5
2012.3.2831	NW	5		50-55	Lithic	Debitage		1	0.001	GM				G5
2012.3.2832	NW	5		60-65	Pottery	Sherd	Body	1	3.057	Pottery				G1
2012.3.2833	NW	5		60-65	Pottery	Sherd	Body	2	4.234	Pottery				G2
2012.3.2834	NW	5		60-65	Pottery	Sherd	Body	9	2.816	Pottery				G3
2012.3.2835	NW	5		60-65	Pottery	Sherd	Body	18	1.589	Pottery				G4
2012.3.2836	NW	5		60-65	Lithic	Debitage		3	0.100	PDC				G4
2012.3.2837	NW	5		60-65	Lithic	Debitage		1	0.155	PDC			1	G4
2012.3.2839	NW	5		60-65	Lithic	Debitage		1	0.107	GM		1		G4
2012.3.2839	NW	5		60-65	Lithic	Debitage		4	0.142	GM				G4
2012.3.2840	NW	5		60-65	Lithic	Debitage		6	0.054	PDC				G5
2012.3.2841	NW	5		60-65	Lithic	Debitage		3	0.026	PDC			1	G5
2012.3.2842	NW	5		60-65	Lithic	Debitage		8	0.060	GM				G5
2012.3.2843	NW	5		100-105	Pottery	Sherd	Body	1	0.877	Pottery				G2
2012.3.2844	NW	5		100-105	Pottery	Sherd	Body	2	0.397	Pottery				G3
2012.3.2845	NW	5		100-105	Pottery	Sherd	Body	9	0.606	Pottery				G4
2012.3.2846	NW	5		100-105	Lithic	Debitage		1	0.469	PDC			1	G3
2012.3.2847	NW	5		100-105	Lithic	Debitage		1	0.709	PDC				G3
2012.3.2848	NW	5		100-105	Lithic	Debitage		3	0.016	PDC				G5
2012.3.2849	NW	5		100-105	Lithic	Debitage		1	0.082	GM				G4
2012.3.2850	NW	5		45-50	Lithic	Debitage		1	0.000	GM				G5
2012.3.2851	NW	5		65-70	Pottery	Sherd	Body	5	3.393	Pottery				G3
2012.3.2852	NW	5		65-70	Pottery	Sherd	Body	6	0.151	Pottery				G4
2012.3.2853	NW	5		35-40	Pottery	Sherd	Shoulder	1	1.090	Pottery				G2
2012.3.2854	NW	5		135-140	Lithic	Debitage		1	0.000	PDC			1	G5
2012.3.2855	NW	5		135-140	Lithic	Debitage		10	0.013	PDC				G5
2012.3.2856	NW	5		35-40	Pottery	Sherd	Body	2	1.382	Pottery				G3
2012.3.2857	NW	5		35-40	Pottery	Sherd	Body	4	0.192	Pottery				G4
2012.3.2858	NW	5		35-40	Lithic	Debitage		1	0.050	GM				G4
2012.3.2859	NW	5		35-40	Lithic	Debitage		1	0.019	PDC				G4
2012.3.2860	NW	5		35-40	Lithic	Debitage		6	0.126	GM				G4
2012.3.2861	NW	5		35-40	Lithic	Debitage		4	0.032	PDC				G5
2012.3.2862	NW	5		35-40	Lithic	Debitage		1	0.014	PDC			1	G5
2012.3.2863	NW	5		135-140	Lithic	Debitage		2	0.143	PDC			1	G4
2012.3.2864	NW	5		85-90	Pottery	Sherd	Body	2	0.595	Pottery				G3
2012.3.2865	NW	5		85-90	Lithic	Debitage		1	0.299	PDC			1	G3
2012.3.2866	NW	5		85-90	Pottery	Sherd	Body	3	0.255	Pottery				G4
2012.3.2867	NW	5		85-90	Lithic	Debitage		1	0.008	GM				G5
2012.3.2868	NW	5		145-150	Pottery	Sherd	Rim	1	2.837	Pottery				G2
2012.3.2869	NW	5		145-150	Lithic	Debitage		1	0.092	PDC				G4
2012.3.2870	NW	5		145-150	Lithic	Debitage		1	0.009	PDC				G5
2012.3.2871	NW	5		145-150	Pottery	Sherd	Body	1	1.156	Pottery				G3
2012.3.2872	NW	5		70-75	Pottery	Sherd	Body	1	2.626	Pottery				G1
2012.3.2873	NW	5		70-75	Pottery	Sherd	Body	4	3.078	Pottery				G2
2012.3.2874	NW	5		70-75	Pottery	Sherd	Body	3	0.122	Pottery				G4
2012.3.2875	NW	5		70-75	Lithic	Debitage		1	0.223	PDC				G3
2012.3.2876	NW	5		70-75	Lithic	Debitage		1	0.169	PDC			1	G4

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.2877	NW	5		70-75	Lithic	Debitage		2	0.108	PDC				G4
2012.3.2878	NW	5		70-75	Lithic	Debitage		1	0.050	GM				G4
2012.3.2879	NW	5		70-75	Lithic	Debitage		1	0.007	PDC				G5
2012.3.2880	NW	5		70-75	Lithic	Debitage		1	0.001	GM				G5
2012.3.2881	NW	5		85-90	Pottery	Sherd	Body	1	0.440	Pottery				G3
2012.3.2882	NW	5		85-90	Pottery	Sherd	Body	1	0.050	Pottery				G4
2012.3.2883	NW	5		85-90	Lithic			2	0.080	GM				G4
2012.3.2884	NW	5		85-90	Lithic			1	0.007	PDC				G5
2012.3.2885	NW	5		100-105	Pottery	Sherd	Body	1	0.574	Pottery				G3
2012.3.2886	NW	5		100-105	Lithic	Debitage		1	0.093	GM				G4
2012.3.2887	NW	5		100-105	Pottery	Sherd	Body	1	1.528	Pottery				G2
2012.3.2888	NW	5		100-105	Pottery	Sherd	Body	3	0.318	Pottery				G4
2012.3.2889	NW	5		90-95	Pottery	Sherd	Body	1	0.753	Pottery				G3
2012.3.2890	NW	5		90-95	Pottery	Sherd	Body	4	0.221	Pottery				G4
2012.3.2891	NW	5		90-95	Lithic	Debitage		1	0.554	GM		1	1	G3
2012.3.2892	NW	5		90-95	Lithic	Debitage		1	1.484	PDC		1	1	G3
2012.3.2893	NW	5		90-95	Lithic	Debitage		2	0.740	PDC				G4
2012.3.2894	NW	5		90-95	Lithic	Debitage		3	0.184	GM				G4
2012.3.2895	NW	5		90-95	Lithic	Debitage		3	0.043	GM				G5
2012.3.2896	NW	5		90-95	Lithic	Debitage		2	0.018	PDC				G5
2012.3.2897	NW	5		40-45	Pottery	Sherd	Body	3	0.254	Pottery				G4
2012.3.2898	NW	5		25-30	Lithic	Debitage		1	0.208	GM				G4
2012.3.2899	NW	5		70-75	Pottery	Sherd	Body	1	1.238	Pottery				G2
2012.3.2900	NW	5		70-75	Pottery	Sherd	Body	4	0.259	Pottery				G4
2012.3.2901	NW	5		70-75	Lithic	Debitage		1	1.025	PDC		1	1	G3
2012.3.2902	NW	5		70-75	Lithic	Debitage		1	0.032	PDC			1	G4
2012.3.2903	NW	5		70-75	Lithic	Debitage		1	0.011	PDC			1	G5
2012.3.2904	NW	5		70-75	Lithic	Debitage		1	0.000	PDC				G5
2012.3.2905	NW	5		80-85	Pottery	Sherd	Body	1	0.242	Pottery				G3
2012.3.2906	NW	5		80-85	Lithic	Debitage		1	0.124	PDC				G4
2012.3.2907	NW	5		80-85	Lithic	Debitage		1	0.008	GM				G5
2012.3.2908	NW	5		80-85	Lithic	Debitage		1	0.015	PDC				G5
2012.3.2909	NW	5		30-35	Pottery	Sherd	Body	5	0.326	Pottery				G4
2012.3.2911	NW	5		30-35	Lithic	Debitage		2	0.071	GM				G4
2012.3.2912	NW	5		30-35	Lithic	Debitage		3	0.111	PDC				G4
2012.3.2913	NW	5		30-35	Lithic	Debitage		2	0.016	GM				G5
2012.3.2914	NW	5		30-35	Pottery	Sherd	Body	1	0.223	Pottery				G3
2012.3.2915	NW	5		80-85	Pottery	Sherd	Body	1	0.714	Pottery				G3
2012.3.2916	NW	5		80-85	Pottery	Sherd	Body	4	0.265	Pottery				G4
2012.3.2917	NW	5		80-85	Lithic	Debitage		2	0.030	PDC				G4
2012.3.2918	NW	5		80-85	Lithic	Debitage		1	0.010	GM				G4
2012.3.2919	NW	5		60-65	Pottery	Sherd	Body	2	2.807	Pottery				G2
2012.3.2920	NW	5		60-65	Pottery	Sherd	Body	1	0.266	Pottery				G3
2012.3.2921	NW	5		60-65	Pottery	Sherd	Body	2	0.065	Pottery				G4
2012.3.2922	NW	5		60-65	Lithic	Debitage		1	0.049	PDC			1	G4
2012.3.2923	NW	5		60-65	Lithic	Debitage		1	0.091	GM		1		G4
2012.3.2924	NW	5		60-65	Lithic	Debitage		1	0.001	GM				G5
2012.3.2925	NW	5		60-65	Lithic	Debitage		1	0.000	PDC				G5
2012.3.2926	NW	5		125-130	Pottery	Sherd	Body	1	0.474	Pottery				G2
2012.3.2927	NW	5		125-130	Pottery	Sherd	Body	2	0.098	Pottery				G4
2012.3.2928	NW	5		125-130	Lithic	Debitage		2	0.036	GM				G5
2012.3.2929	NW	5		125-130	Lithic	Debitage		1	0.024	PDC				G5

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2012.3.2930	NW	5		90-95	Pottery	Sherd	Body	1	0.081	Pottery				G4
2012.3.2931	NW	5		90-95	Lithic	Debitage		4	0.058	PDC				G5
2012.3.2932	NW	5		90-95	Lithic	Debitage		1	0.022	GM				G5
2012.3.2933	NW	5		120-125	Pottery	Sherd	Body	2	0.098	Pottery				G4
2012.3.2934	NW	5		120-125	Lithic	Debitage		1	0.084	PDC			1	G4
2012.3.2935	NW	5		120-125	Lithic	Debitage		1	0.017	PDC			1	G5
2012.3.2936	NW	5		120-125	Lithic	Debitage		1	0.012	GM				G5
2012.3.2937	NW	5		85-90	Pottery	Sherd	Body	2	3.442	Pottery				G2
2012.3.2938	NW	5		85-90	Pottery	Sherd	Body	3	0.996	Pottery				G3
2012.3.2939	NW	5		85-90	Pottery	Sherd	Body	12	0.742	Pottery				G4
2012.3.2940	NW	5		85-90	Lithic	Debitage		1	0.400	PDC				G3
2012.3.2941	NW	5		85-90	Lithic	Debitage		1	0.263	GM				G4
2012.3.2942	NW	5		85-90	Lithic	Debitage		1	3.097	GM		1		G2
2012.3.2943	NW	5		85-90	Pottery	Sherd	Body	3	1.856	Pottery				G3
2012.3.2944	NW	5		85-90	Pottery	Sherd	Body	2	0.078	Pottery				G4
2012.3.2945	NW	5		85-90	Lithic	Debitage		1	0.024	GM	1			G5
2012.3.2946	NW	5		85-90	Lithic	Debitage		1	0.000	GM				G5
2012.3.2947	NW	5		55-60	Lithic	Tool	Adze	1	80.598	Indeterminate				G1
2012.3.2948	NW	5		55-60	Lithic	Tool	Projectile Point Frag	1	0.297	PDC				G3
2012.3.2949	NW	5		55-60	Pottery	Sherd	Shoulder	1	1.085	Pottery				G2
2012.3.2950	NW	5		55-60	Pottery	Sherd	Body	2	2.087	Pottery				G2
2012.3.2951	NW	5		55-60	Pottery	Sherd	Body	2	0.970	Pottery				G3
2012.3.2952	NW	5		55-60	Pottery	Sherd	Body	1	0.142	Pottery				G4
2012.3.2953	NW	5		55-60	Lithic	Debitage		1	0.991	PDC				G2
2012.3.2954	NW	5		55-60	Lithic	Debitage		1	0.209	GM				G3
2012.3.2955	NW	5		55-60	Lithic	Debitage		1	0.418	PDC		1		G3
2012.3.2956	NW	5		55-60	Lithic	Debitage		2	0.091	PDC				G4
2012.3.2957	NW	5		55-60	Lithic	Debitage		1	0.055	GM				G4
2012.3.2958	NW	5		55-60	Lithic	Debitage		3	0.020	PDC				G5
2012.3.2959	NW	5		55-60	Lithic	Debitage		1	0.010	PDC			1	G5
2012.3.2960	NW	5		55-60	Lithic	Debitage		1	0.007	GM				G5
2012.3.2961	NW	5		65-70	Lithic	Debitage		1	1.588	GM			1	G2
2012.3.2962	NW	5		65-70	Pottery	Sherd	Body	8	0.349	Pottery				G4
2012.3.2963	NW	5		65-70	Lithic	Debitage		1	0.047	PDC				G4
2012.3.2964	NW	5		65-70	Lithic	Debitage		1	0.013	GM				G5
2012.3.2965	NW	5		65-70	Lithic	Debitage		1	0.000	PDC				G5
2012.3.2966	NW	5		65-70	Pottery	Sherd	Body	4	3.504	Pottery				G2
2012.3.2967	NW	5		65-70	Pottery	Sherd	Body	2	0.405	Pottery				G3
2012.3.2968	NW	5		65-70	Pottery	Sherd	Body	10	0.531	Pottery				G4
2012.3.2969	NW	5		65-70	Lithic	Tool	Projectile Point Frag	1	0.354	GM			1	G3
2012.3.2970	NW	5		65-70	Lithic	Debitage		1	0.523	GM				G3
2012.3.2971	NW	5		65-70	Lithic	Debitage		1	0.508	GM		1		G3
2012.3.2973	NW	5		65-70	Lithic	Debitage		1	0.062	PDC				G4
2012.3.2974	NW	5		65-70	Lithic	Debitage		1	0.139	PDC			1	G4
2012.3.2975	NW	5		65-70	Lithic	Debitage		3	0.174	GM				G4
2012.3.2976	NW	5		65-70	Lithic	Debitage		1	0.029	GM		1		G4
2012.3.2977	NW	5		65-70	Lithic	Debitage		2	0.021	PDC				G5
2012.3.2978	NW	5		65-70	Lithic	Debitage		1	0.021	PDC			1	G5
2012.3.2979	NW	5		65-70	Lithic	Debitage		3	0.030	GM				G5
2012.3.2980	NW	5		65-70	Lithic	Non-Tool	FCR	1	424.000	Granite				G1
2012.3.2981	NW	5		115-120	Lithic	Debitage		1	0.011	GM				G5
2012.3.2982	NW	5		115-120	Pottery	Sherd	Body	4	0.344	Pottery				G4

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2012.3.2983	NW	5		115-120	Pottery	Sherd	Shoulder	1	1.402	Pottery				G3
2012.3.2984	NW	5		120-125	Pottery	Sherd	Shoulder	1	0.035	Pottery				G4
2012.3.2985	NW	5		80-85	Pottery	Sherd	Body	5	1.438	Pottery				G3
2012.3.2986	NW	5		80-85	Pottery	Sherd	Body	4	0.115	Pottery				G4
2012.3.2987	NW	5		80-85	Lithic	Debitage		1	0.552	GM		1		G3
2012.3.2988	NW	5		80-85	Lithic	Debitage		1	0.236	PDC			1	G3
2012.3.2989	NW	5		80-85	Lithic	Debitage		1	0.031	PDC			1	G4
2012.3.2990	NW	5		80-85	Lithic	Debitage		1	0.020	GM				G4
2012.3.2991	NW	5		35-40	Pottery	Sherd	Shoulder	1	0.105	Pottery				G4
2012.3.2992	NW	5		35-40	Lithic	Debitage		1	0.019	PDC				G4
2012.3.2993	NW	5		35-40	Lithic	Debitage		1	0.013	GM				G5
2012.3.2994	NW	5		35-40	Lithic	Debitage		2	0.012	PDC				G5
2012.3.2995	NW	5		125-130	Pottery	Sherd	Body	1	0.225	Pottery				G3
2012.3.2996	NW	5		125-130	Pottery	Sherd	Body	1	0.038	Pottery				G5
2012.3.2997	NW	5		125-130	Lithic	Debitage		1	0.000	GM				G5
2012.3.2998	NW	5		90-95	Lithic	Debitage		1	0.037	GM				G4
2012.3.2999	NW	5		90-95	Lithic	Debitage		1	0.007	PDC				G5
2012.3.3000	NW	5		55-60	Pottery	Sherd	Body	1	0.325	Pottery				G3
2012.3.3001	NW	5		55-60	Pottery	Sherd	Body	3	0.187	Pottery				G4
2012.3.3002	NW	5		55-60	Lithic	Debitage		1	0.042	PDC				G4
2012.3.3003	NW	5		100-105	Lithic	Debitage		1	0.015	GM				G4
2012.3.3004	NW	5		100-105	Pottery	Sherd	Body	1	3.105	Pottery				G1
2012.3.3005	NW	5		100-105	Pottery	Sherd	Body	3	0.137	Pottery				G3
2012.3.3006	NE	5	D4	100-105	Lithic	Debitage		1	0.062	GM				G4
2012.3.3007	NW	5		90-95	Pottery	Sherd	Body	2	3.396	Pottery				G2
2012.3.3008	NW	5		90-95	Pottery	Sherd	Body	1	0.157	Pottery				G3
2012.3.3009	NW	5		90-95	Pottery	Sherd	Body	4	0.200	Pottery				G4
2012.3.3010	NW	5		90-95	Lithic	Debitage		1	0.094	PDC				G3
2012.3.3011	NE	5	D2	53-58	Lithic	Debitage		1	1.157	GM				G3
2012.3.3012	NE	5	D2	53-58	Lithic	Debitage		1	0.043	PDC			1	G4
2012.3.3013	NE	5	D2	53-58	Lithic	Debitage		3	0.029	GM				G4
2012.3.3014	NE	5	D2	53-58	Lithic	Non-Tool	FCR	1	177.000	Granite				G1
2012.3.3015	NE	5	D3	105-110	Pottery	Sherd		4	1.266	Pottery				G3
2012.3.3016	NE	5	D3	105-110	Pottery	Sherd		13	0.971	Pottery				G4
2012.3.3017	NE	5	D3	105-110	Lithic	Debitage		1	4.561	Quartz				G2
2012.3.3018	NE	5	D3	105-110	Lithic	Debitage		3	0.126	GM				G4
2012.3.3019	NE	5	D3	105-110	Lithic	Debitage		1	0.123	PDC			1	G4
2012.3.3020	NE	5	D3	105-110	Lithic	Debitage		2	0.013	PDC				G5
2012.3.3021	NE	5	D3	63-68	Lithic	Non-Tool	Core	1	215.000	PDC		1	1	G1
2012.3.3022	NE	5	D3	63-68	Lithic	Debitage		5	0.052	GM				G5
2012.3.3023	NE	5	D3	63-68	Lithic	Debitage		4	0.042	PDC				G5
2012.3.3024	NE	5	D3	63-68	Lithic	Debitage		3	0.052	PDC			1	G5
2012.3.3025	NE	5	D3	63-68	Lithic	Debitage		1	1.051	GM		1		G3
2012.3.3026	NE	5	D3	63-68	Lithic	Debitage		1	0.282	PDC			1	G3
2012.3.3027	NE	5	D3	63-68	Lithic	Debitage		1	0.475	PDC				G3
2012.3.3028	NE	5	D3	63-68	Lithic	Debitage		3	0.158	PDC			1	G4
2012.3.3029	NE	5	D3	63-68	Lithic	Debitage		4	0.173	GM				G4
2012.3.3030	NE	5	D3	63-68	Lithic	Debitage		5	0.174	PDC				G4
2012.3.3031	NE	5	D3	63-68	Pottery	Sherd	Body	13	5.248	Pottery				G3
2012.3.3032	NE	5	D3	63-68	Pottery	Sherd	Body	9	0.615	Pottery				G4
2012.3.3033	NE	5	D3	63-68	Pottery	Sherd	Body	4	0.052	Pottery				G5
2012.3.3034	NE	5	D3	110-115	Pottery	Sherd	Body	2	0.093	Pottery				G4

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.3035	NE	5	D3	110-115	Lithic	Debitage		1	0.036	GM			1	G4
2012.3.3036	NE	5	D3	110-115	Lithic	Debitage		3	0.158	GM				G4
2012.3.3037	NE	5	D3	110-115	Lithic	Debitage		2	0.058	PDC			1	G4
2012.3.3038	NE	5	D3	110-115	Lithic	Debitage		1	0.045	Quartz				G4
2012.3.3039	NE	5	D3	110-115	Lithic	Debitage		5	0.122	GM				G5
2012.3.3040	NE	5	D3	110-115	Lithic	Debitage		2	0.027	PDC				G5
2012.3.3041	NE	5	D3	110-115	Lithic	Debitage		1	0.006	PDC			1	G5
2012.3.3042	NE	5	D3	95-100	Lithic	Tool	Channel Abrader	1	103.254	Indeterminate				G1
2012.3.3043	NE	5	D3	95-100	Pottery	Sherd	Body	1	4.278	Pottery				G1
2012.3.3044	NE	5	D3	95-100	Pottery	Sherd	Body	6	0.431	Pottery				G4
2012.3.3045	NE	5	D3	95-100	Lithic	Debitage		1	0.094	GM				G4
2012.3.3046	NE	5	D3	95-100	Lithic	Debitage		1	0.094	PDC				G4
2012.3.3047	NE	5	D3	95-100	Lithic	Debitage		1	0.000	Quartz				G5
2012.3.3048	NE	5	D3	105-110	Pottery	Sherd	Body	2	1.111	Pottery				G3
2012.3.3049	NE	5	D3	105-110	Pottery	Sherd	Body	14	0.712	Pottery				G4
2012.3.3050	NE	5	D3	105-110	Lithic	Debitage		1	0.309	PDC				G4
2012.3.3051	NE	5	D3	105-110	Lithic	Debitage		1	0.187	GM			1	G4
2012.3.3052	NE	5	D3	105-110	Lithic	Debitage		1	0.056	GM				G4
2012.3.3053	NE	5	D3	105-110	Lithic	Debitage		3	0.034	PDC				G5
2012.3.3054	NE	5	D3	105-110	Lithic	Debitage		1	0.029	PDC			1	G5
2012.3.3055	NE	5	D3	105-110	Lithic	Debitage		5	0.050	GM				G5
2012.3.3056	NE	5	D3	68-75	Pottery	Sherd	Body	8	20.770	Pottery				G2
2012.3.3057	NE	5	D3	68-75	Pottery	Sherd	Shoulder	1	5.122	Pottery				G2
2012.3.3058	NE	5	D3	68-75	Pottery	Sherd	Body	13	3.457	Pottery				G3
2012.3.3059	NE	5	D3	68-75	Pottery	Sherd	Body	30	2.100	Pottery				G4
2012.3.3060	NE	5	D3	68-75	Lithic	Debitage		2	7.298	PDC		1	1	G2
2012.3.3061	NE	5	D3	68-75	Lithic	Debitage		2	0.490	GM			1	G2
2012.3.3062	NE	5	D3	68-75	Lithic	Debitage		1	0.133	PDC				G3
2012.3.3063	NE	5	D3	68-75	Lithic	Debitage		1	0.252	PDC			1	G3
2012.3.3064	NE	5	D3	68-75	Lithic	Debitage		2	1.668	PDC		1	1	G3
2012.3.3065	NE	5	D3	68-75	Lithic	Debitage		1	1.542	PDC		1		G3
2012.3.3066	NE	5	D3	68-75	Lithic	Debitage		1	0.045	PDC		1		G4
2012.3.3067	NE	5	D3	68-75	Lithic	Debitage		2	0.506	PDC				G4
2012.3.3068	NE	5	D3	68-75	Lithic	Debitage		11	0.546	GM				G4
2012.3.3069	NE	5	D3	68-75	Lithic	Debitage		8	0.648	PDC			1	G4
2012.3.3070	NE	5	D3	68-75	Lithic	Debitage		1	0.040	PDC				G4
2012.3.3071	NE	5	D3	68-75	Lithic	Debitage		2	0.009	PDC			1	G5
2012.3.3072	NE	5	D3	68-75	Lithic	Debitage		1	0.000	PDC		1		G5
2012.3.3073	NE	5	D3	68-75	Lithic	Debitage		3	0.022	GM			1	G5
2012.3.3074	NE	5	D3	68-75	Lithic	Debitage		12	0.104	PDC				G5
2012.3.3075	NE	5	D3	68-75	Lithic	Debitage		13	0.149	GM				G5
2012.3.3076	NW	5		35-40	Lithic	Debitage		1	7.037	PDC		1	1	G2
2012.3.3077	NW	5		35-40	Lithic	Debitage		1	1.613	PDC				G2
2012.3.3078	NW	5		35-40	Lithic	Debitage		1	0.891	PDC		1		G3
2012.3.3079	NW	5		35-40	Pottery	Sherd	Body	2	0.418	Pottery				G3
2012.3.3080	NW	5		35-40	Pottery	Sherd	Body	1	0.038	Pottery				G4
2012.3.3081	NW	5		35-40	Lithic	Debitage		1	0.000	PDC		1		G5
2012.3.3082	NW	5		35-40	Lithic	Debitage		1	0.006	GM				G5
2012.3.3083	NW	5		130-135	Pottery	Sherd	Body	1	0.870	Pottery				G2
2012.3.3084	NW	5		130-135	Pottery	Sherd	Body	3	0.186	Pottery				G3
2012.3.3085	NW	5		130-135	Lithic	Debitage		1	0.020	GM				G5
2012.3.3086	NW	5		130-135	Lithic	Debitage		1	0.001	PDC			1	G5

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.3087	NW	5		130-135	Lithic	Debitage		1	0.057	PDC				G4
2012.3.3088	NW	5		130-135	Lithic	Debitage		3	0.027	GM				G5
2012.3.3089	NW	5		130-135	Lithic	Debitage		4	0.026	PDC				G5
2012.3.3090	NW	5		115-120	Pottery	Sherd	Body	3	0.852	Pottery				G3
2012.3.3091	NW	5		115-120	Pottery	Sherd	Body	1	0.078	Pottery				G4
2012.3.3092	NW	5		115-120	Lithic	Debitage		1	0.084	GM				G4
2012.3.3093	NW	5		115-120	Lithic	Debitage		1	0.029	PDC				G4
2012.3.3094	NW	5		150-155	Pottery	Sherd	Body	1	0.102	Pottery				G4
2012.3.3095	NW	5		50-55	Pottery	Sherd	Body	1	9.035	Pottery				G1
2012.3.3096	NW	5		50-55	Pottery	Sherd	Body	3	1.532	Pottery				G3
2012.3.3097	NW	5		50-55	Pottery	Sherd	Body	2	0.168	Pottery				G4
2012.3.3098	NW	5		50-55	Lithic	Debitage		1	0.026	GM				G4
2012.3.3099	NW	5		50-55	Lithic	Debitage		3	0.033	GM				G5
2012.3.3100	NE	5	D3	80-85	Pottery	Sherd	Body	2	5.615	Pottery				G2
2012.3.3101	NE	5	D3	80-85	Pottery	Sherd	Body	2	1.759	Pottery				G3
2012.3.3102	NE	5	D3	80-85	Pottery	Sherd	Body	5	0.618	Pottery				G4
2012.3.3103	NE	5	D3	80-85	Lithic	Debitage		1	0.340	PDC				G3
2012.3.3104	NE	5	D3	80-85	Lithic	Debitage		2	0.289	PDC		1		G4
2012.3.3105	NE	5	D3	80-85	Lithic	Debitage		1	0.048	GM		1		G4
2012.3.3106	NE	5	D3	80-85	Lithic	Debitage		2	0.063	PDC			1	G4
2012.3.3107	NE	5	D3	80-85	Lithic	Debitage		3	0.017	GM				G4
2012.3.3108	NE	5	D3	80-85	Lithic	Debitage		1	0.000	PDC		1		G5
2012.3.3109	NE	5	D3	58-63	Lithic	Non-Tool	Core	1	83.046	PDC			1	G1
2012.3.3110	NE	5	D3	58-63	Lithic	Debitge		1	3.655	GM				G2
2012.3.3111	NE	5	D3	58-63	Lithic	Debitage		1	1.468	GM		1		G2
2012.3.3112	NE	5	D3	58-63	Lithic	Debitage		1	0.610	PDC		1	1	G3
2012.3.3113	NE	5	D3	58-63	Lithic	Debitage		1	0.508	PDC		1		G3
2012.3.3114	NE	5	D3	58-63	Pottery	Sherd	Body	12	0.537	Pottery				G4
2012.3.3115	NE	5	D3	58-63	Lithic	Debitage		3	0.113	PDC			1	G4
2012.3.3116	NE	5	D3	58-63	Lithic	Debitage		1	0.009	GM				G4
2012.3.3117	NE	5	D3	58-63	Lithic	Debitage		2	0.293	PDC				G4
2012.3.3118	NE	5	D3	58-63	Lithic	Debitage		2	0.014	PDC			1	G5
2012.3.3119	NE	5	D3	58-63	Lithic	Debitage		3	0.026	GM				G5
2012.3.3120	NE	5	D3	58-63	Lithic	Debitage		4	0.046	PDC				G5
2012.3.3121	NE	5	D2	47-53	Pottery	Sherd		1	2.759	Pottery				G1
2012.3.3122	NE	5	D2	47-53	Pottery	Sherd		2	2.194	Pottery				G3
2012.3.3123	NE	5	D2	47-53	Lithic	Debitage		1	0.044	PDC			1	G4
2012.3.3124	NE	5	D2	47-53	Lithic	Debitage		2	0.070	PDC				G4
2012.3.3125	NE	5	D2	47-53	Lithic	Debitage		1	0.071	GM				G4
2012.3.3126	NE	5	D2	47-53	Lithic	Debitage		1	0.016	GM			1	G4
2012.3.3127	NE	5	D2	47-53	Lithic	Debitage		1	0.000	GM				G5
2012.3.3128	NE	5	D3	95-100	Pottery	Sherd	Body	8	1.349	Pottery				G3
2012.3.3129	NE	5	D3	95-100	Pottery	Sherd	Body	22	0.500	Pottery				G4
2012.3.3130	NE	5	D3	95-100	Lithic	Debitage		1	1.135	GM	1			G3
2012.3.3131	NE	5	D3	95-100	Lithic	Debitage		1	0.019	GM		1		G4
2012.3.3132	NE	5	D3	95-100	Lithic	Debitage		1	0.031	GM				G5
2012.3.3133	NE	5	D3	95-100	Lithic	Debitage		2	0.030	PDC			1	G5
2012.3.3134	NE	5	D3	95-100	Lithic	Debitage		2	0.025	PDC				G5
2012.3.3135	NE	5	D3	75-80	Lithic	Tool	Perforator	1	23.890	PDC		1		G1
2012.3.3136	NE	5	D3	75-80	Pottery	Sherd		5	2.356	Pottery				G3
2012.3.3137	NE	5	D3	75-80	Pottery	Sherd		6	0.783	Pottery				G4
2012.3.3138	NE	5	D3	75-80	Lithic	Debitage		2	0.212	PDC			1	G4

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.3139	NE	5	D3	75-80	Lithic	Debitage		1	0.040	GM				G4
2012.3.3140	NE	5	D3	75-80	Lithic	Debitage		4	0.067	GM				G5
2012.3.3141	NE	5	D3	75-80	Lithic	Debitage		3	0.024	PDC				G5
2012.3.3142	NE	5	D3	75-80	Lithic	Debitage		1	0.000	PDC			1	G5
2012.3.3143	NE	5	D3	75-80	Lithic	Debitage		1	31.475	PDC		1	1	G1
2012.3.3144	NE	5	D3	75-80	Lithic	Tool	Spokeshave	1	1.847	PDC		1		G2
2012.3.3145	NE	5	D3	75-80	Lithic	Debitage		1	0.595	PDC		1	1	G2
2012.3.3146	NE	5	D3	75-80	Lithic	Debitage		1	0.634	PDC			1	G2
2012.3.3147	NE	5	D3	75-80	Lithic	Debitage	Utilized Flake	1	2.311	GM				G2
2012.3.3148	NE	5	D3	75-80	Lithic	Debitage	Utilized Flake	1	7.474	GM	1			G2
2012.3.3149	NE	5	D3	75-80	Lithic	Debitage		2	0.098	PDC			1	G4
2012.3.3150	NE	5	D3	75-80	Lithic	Debitage		2	0.042	GM				G4
2012.3.3151	NE	5	D3	75-80	Lithic	Debitage		1	0.051	GM			1	G4
2012.3.3152	NE	5	D3	75-80	Lithic	Debitage		2	0.029	GM			1	G5
2012.3.3153	NE	5	D3	75-80	Lithic	Debitage		4	0.026	GM				G5
2012.3.3154	NE	5	D3	75-80	Lithic	Debitage		5	0.122	PDC			1	G5
2012.3.3155	NE	5	D3	75-80	Lithic	Debitage		4	0.031	PDC				G5
2012.3.3156	NE	5	D3	75-80	Pottery	Sherd	Body	3	6.153	Pottery				G2
2012.3.3157	NE	5	D3	75-80	Pottery	Sherd	Body	8	3.139	Pottery				G3
2012.3.3158	NE	5	D3	75-80	Pottery	Sherd	Body	13	0.670	Pottery				G4
2012.3.3159	NE	5	D4	140-152	Pottery	Sherd	Body	1	0.189	Pottery				G3
2012.3.3161	NE	5	D4	140-152	Lithic	Debitage		1	0.035	PDC				G4
2012.3.3162	NE	5		20-25	Pottery	Sherd	Body	2	2.985	Pottery				G1
2012.3.3163	NE	5		20-25	Pottery	Sherd	Body	2	0.871	Pottery				G2
2012.3.3164	NE	5		20-25	Pottery	Sherd	Body	4	0.238	Pottery				G3
2012.3.3165	NE	5		20-25	Pottery	Sherd	Body	2	0.031	Pottery				G4
2012.3.3166	NE	5		20-25	Lithic	Debitage		2	0.697	PDC			1	G3
2012.3.3167	NE	5		20-25	Lithic	Debitage		1	0.012	GM				G5
2012.3.3168	NE	5		20-25	Lithic	Debitage		2	0.013	PDC			1	G5
2012.3.3169	NE	5		20-25	Lithic	Debitage		1	0.048	PDC				G3
2012.3.3170	NE	5	D3	115-120	Pottery	Sherd	Body	3	3.171	Pottery				G1
2012.3.3171	NE	5	D3	115-120	Pottery	Sherd	Body	3	0.275	Pottery				G3
2012.3.3172	NE	5	D3	115-120	Pottery	Sherd	Body	9	0.527	Pottery				G4
2012.3.3173	NE	5	D3	115-120	Lithic	Debitage		2	0.500	GM				G4
2012.3.3174	NE	5	D3	115-120	Lithic	Debitage		1	0.006	GM			1	G5
2012.3.3175	NE	5	D3	115-120	Lithic	Debitgea		1	0.000	GM				G5
2012.3.3176	NE	5	D3	115-120	Lithic	Debitage		1	0.009	PDC				G5
2012.3.3177	NE	5	D3	100-105	Lithic	Tool	Projectile Point	1	0.918	PDC			1	G3
2012.3.3178	NE	5	D3	100-105	Pottery	Sherd	Body	4	1.755	Pottery				G3
2012.3.3179	NE	5	D3	100-105	Pottery	Sherd	Body	13	0.935	Pottery				G4
2012.3.3180	NE	5	D3	100-105	Lithic	Debitage		1	0.361	GM		1	1	G3
2012.3.3181	NE	5	D3	100-105	Lithic	Debitage		2	0.110	PDC				G4
2012.3.3182	NE	5	D3	100-105	Lithic	Debitage		1	0.026	GM		1		G4
2012.3.3183	NE	5	D3	100-105	Lithic	Debitage		2	0.038	GM				G4
2012.3.3184	NE	5	D3	100-105	Lithic	Debitage		1	0.067	PDC				G4
2012.3.3185	NE	5	D3	100-105	Lithic	Debitage		1	0.006	PDC				G5
2012.3.3186	NE	5	D6	140-152	Pottery	Sherd	Body	1	0.022	Pottery				G4
2012.3.3187	NE	5	D6	140-152	Lithic	Debitage		1	0.043	PDC			1	G4
2012.3.3188	NE	5	D6	140-152	Lithic	Debitage		1	0.028	GM				G5
2012.3.3189	NE	5	D6	140-152	Lithic	Debitage		2	0.022	GM			1	G5
2012.3.3190	NE	5	D4	130-135	Pottery	Sherd	Body	1	1.657	Pottery				G2
2012.3.3191	NE	5	D4	130-135	Pottery	Sherd	Body	4	1.314	Pottery				G3

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.3192	NE	5	D4	130-135	Pottery	Sherd	Body	1	0.178	Pottery				G4
2012.3.3193	NE	5	D4	130-135	Lithic	Debitage		2	0.587	PDC			1	G3
2012.3.3194	NE	5	D4	130-135	Lithic	Debitage		1	0.051	PDC			1	G4
2012.3.3195	NE	5	D4	130-135	Lithic	Debitage		4	0.051	PDC			1	G5
2012.3.3196	NE	5	D4	130-135	Lithic	Debitage		3	0.038	PDC				G5
2012.3.3197	NE	5	D4	130-135	Lithic	Debitage		2	0.023	GM				G5
2012.3.3198	NE	5	D6	135-140	Lithic	Debitage		1	0.009	GM				G5
2012.3.3199	NE	5	D3	85-90	Pottery	Sherd	Body	1	0.809	Pottery				G2
2012.3.3200	NE	5	D3	85-90	Pottery	Sherd	Body	2	1.039	Pottery				G3
2012.3.3201	NE	5	D3	85-90	Pottery	Sherd	Body	6	0.544	Pottery				G4
2012.3.3202	NE	5	D3	85-90	Pottery	Sherd	Body	4	0.038	Pottery				G5
2012.3.3203	NE	5	D3	85-90	Lithic	Tool	Perforator	1	3.264	PDC			1	G2
2012.3.3204	NE	5	D3	85-90	Lithic	Debitage		1	0.000	PDC				G5
2012.3.3205	NE	5	D3	85-90	Lithic	Debitage		2	0.025	GM				G5
2012.3.3206	NE	5	D3	85-90	Lithic	Debitage		1	0.044	Cedar Valley				G3
2012.3.3207	NE	5		20-25	Lithic	Debitage		1	0.021	GM				G4
2012.3.3208	NE	5		20-25	Pottery	Sherd	Body	4	0.204	Pottery				G4
2012.3.3209	NE	5	D6	140-152	Lithic	Debitage		1	0.000	GM			1	G5
2012.3.3210	NE	5	D6	140-152	Lithic	Debitage		1	0.011	GM				G5
2012.3.3211	NE	5	D3	100-105	Pottery	Sherd	Body	1	0.730	Pottery				G2
2012.3.3212	NE	5	D3	100-105	Pottery	Sherd	Body	3	0.928	Pottery				G3
2012.3.3213	NE	5	D3	100-105	Pottery	Sherd	Body	9	0.689	Pottery				G4
2012.3.3214	NE	5	D3	100-105	Pottery	Sherd	Body	5	0.065	Pottery				G5
2012.3.3215	NE	5	D3	100-105	Lithic	Debitage		2	0.527	GM		1	1	G3
2012.3.3216	NE	5	D3	100-105	Lithic	Debitage		2	0.086	GM				G4
2012.3.3217	NE	5	D3	100-105	Lithic	Debitage		4	0.055	GM				G5
2012.3.3218	NE	5	D3	90-95	Pottery	Sherd	Body	2	4.204	Pottery				G1
2012.3.3219	NE	5	D3	90-95	Pottery	Sherd	Body	2	0.669	Pottery				G3
2012.3.3220	NE	5	D3	90-95	Pottery	Sherd	Body	12	0.643	Pottery				G4
2012.3.3221	NE	5	D3	90-95	Lithic	Debitage		1	0.010	GM				G4
2012.3.3222	NE	5	D3	90-95	Lithic	Debitage		1	0.012	GM				G5
2012.3.3223	NW	5		60-65	Pottery	Sherd	Body	1	0.194	Pottery				G3
2012.3.3224	NW	5		60-65	Pottery	Sherd	Body	3	0.221	Pottery				G4
2012.3.3225	NW	5		60-65	Lithic	Debitage		1	0.025	PDC				G4
2012.3.3226	NW	5		60-65	Lithic	Debitage		1	0.024	GM				G4
2012.3.3227	NW	5		85-90	Pottery	Sherd		5	0.475	Pottery				G4
2012.3.3229	NW	5		85-90	Lithic	Debitage		4	0.045	PDC			1	G5
2012.3.3230	NW	5		85-90	Lithic	Debitage		2	0.014	PDC				G5
2012.3.3231	NW	5		85-90	Lithic	Debitage		1	0.011	PDC				G4
2012.3.3232	NW	5		75-80	Pottery	Sherd	Body	2	0.168	Pottery				G4
2012.3.3233	NW	5		75-80	Lithic	Debitage	Utilized Flake	1	1.538	PDC			1	G2
2012.3.3234	NW	5		75-80	Lithic	Debitage		1	0.743	PDC		1	1	G3
2012.3.3235	NW	5		75-80	Lithic	Debitage		1	0.104	PDC			1	G4
2012.3.3236	NW	5		75-80	Lithic	Debitage		1	0.080	GM				G4
2012.3.3237	NW	5		75-80	Lithic	Debitage		1	0.000	PDC				G5
2012.3.3238	NW	5		70-75	Pottery	Sherd	Body	2	1.623	Pottery				G2
2012.3.3239	NW	5		70-75	Pottery	Sherd	Body	3	0.171	Pottery				G4
2012.3.3240	NW	5		70-75	Lithic	Debitage		1	0.967	PDC			1	G3
2012.3.3241	NW	5		70-75	Lithic	Debitage		1	0.027	GM				G4
2012.3.3242	NW	5		70-75	Lithic	Debitage		1	0.000	PDC				G5
2012.3.3243	NW	5		115-120	Pottery	Sherd	Body	1	0.074	Pottery				G3
2012.3.3244	NW	5		115-120	Pottery	Sherd	Body	1	0.084	Pottery				G4

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.3245	NW	5		115-120	Lithic	Debitage		1	0.121	GM				G4
2012.3.3246	NW	5		115-120	Lithic	Debitage		1	0.000	PDC				G5
2012.3.3247	NW	5		70-75	Pottery	Sherd	Body	1	1.254	Pottery				G3
2012.3.3248	NW	5		70-75	Pottery	Sherd	Body	3	0.180	Pottery				G4
2012.3.3249	NW	5		70-75	Lithic	Tool	Projectile Point Frag	1	4.262	Indeterminate				G1
2012.3.3250	NW	5		70-75	Lithic	Debitage		1	0.421	GM				G3
2012.3.3251	NW	5		70-75	Lithic	Debitage		1	0.571	GM				G3
2012.3.3252	NW	5		70-75	Lithic	Debitage		2	1.269	PDC			1	G3
2012.3.3253	NW	5		70-75	Lithic	Debitage		1	1.024	PDC		1		G3
2012.3.3254	NW	5		70-75	Lithic	Debitage		3	0.082	GM				G4
2012.3.3255	NW	5		70-75	Lithic	Debitage		2	0.019	GM				G5
2012.3.3256	NW	5		70-75	Lithic	Debitage		1	0.011	PDC			1	G5
2012.3.3257	NW	5		70-75	Lithic	Debitage		1	0.000	PDC				G5
2012.3.3258	NW	5		140-145	Lithic	Debitage		2	0.000	Cedar Valley				G5
2012.3.3259	NW	5		140-145	Lithic	Debitage		1	0.014	GM				G4
2012.3.3261	NW	5		80-85	Lithic	Tool	Knife	1	8.895	Hixton Orthoquartzite				G1
2012.3.3262	NW	5		80-85	Pottery	Sherd	Body	1	3.132	Pottery				G1
2012.3.3263	NW	5		80-85	Pottery	Sherd	Body	2	0.591	Pottery				G3
2012.3.3264	NW	5		80-85	Pottery	Sherd	Body	8	0.417	Pottery				G4
2012.3.3265	NW	5		80-85	Pottery	Sherd	Body	11	0.121	Pottery				G5
2012.3.3266	NW	5		80-85	Lithic	Debitage		1	0.442	PDC			1	G3
2012.3.3267	NW	5		80-85	Lithic	Debitage		1	0.091	PDC			1	G4
2012.3.3268	NW	5		80-85	Lithic	Debitage		1	0.000	GM				G5
2012.3.3269	NW	5		75-80	Pottery	Sherd	Body	1	2.270	Pottery				G2
2012.3.3270	NW	5		75-80	Pottery	Sherd	Body	4	0.086	Pottery				G4
2012.3.3271	NW	5		75-80	Lithic	Debitage		1	0.065	PDC				G4
2012.3.3272	NW	5		75-80	Lithic	Debitage		1	0.015	PDC				G5
2012.3.3273	NW	5		45-50	Pottery	Sherd	Body	3	0.248	Pottery				G4
2012.3.3274	NW	5		75-80	Pottery	Sherd		3	1.892	Pottery				G3
2012.3.3275	NW	5		75-80	Pottery	Sherd		5	0.362	Pottery				G4
2012.3.3276	NW	5		75-80	Lithic	Debitage		1	0.259	PDC				G3
2012.3.3277	NW	5		75-80	Lithic	Debitage		1	0.031	GM				G5
2012.3.3278	NW	5		95-100	Pottery	Sherd	Body	1	0.059	Pottery				G4
2012.3.3279	NW	5		95-100	Lithic	Debitage		2	0.024	Cedar Valley				G4
2012.3.3280	NW	5		115-120	Lithic	Debitage		1	0.022	GM				G4
2012.3.3281	NW	5		115-120	Lithic	Debitage		1	0.001	GM				G5
2012.3.3282	NW	5		110-115	Pottery	Sherd	Body	1	0.058	Pottery				G4
2012.3.3283	NW	5		110-115	Lithic	Debitage		1	0.023	Hixton Orthoquartzite				G4
2012.3.3284	NW	5		110-115	Lithic	Debitage		2	0.103	GM				G4
2012.3.3285	NW	5		90-95	Pottery	Sherd	Body	2	2.320	Pottery				G3
2012.3.3286	NW	5		75-80	Pottery	Sherd	Body	9	0.617	Pottery				G4
2012.3.3287	NW	5		75-80	Lithic	Debitage		2	0.187	PDC				G3
2012.3.3288	NW	5		75-80	Lithic	Debitage		1	0.012	PDC				G4
2012.3.3289	NW	5		75-80	Lithic	Debitage		1	0.018	GM				G4
2012.3.3290	NW	5		115-120	Pottery	Sherd	Body	1	1.689	Pottery				G3
2012.3.3291	NW	5		115-120	Lithic	Debitage		1	0.022	PDC			1	G4
2012.3.3292	NW	5		115-120	Lithic	Debitage		2	0.029	GM				G4
2012.3.3293	NW	5		105-110	Pottery	Sherd	Body	1	0.660	Pottery				G3
2012.3.3294	NW	5		105-110	Pottery	Sherd	Body	2	0.205	Pottery				G4
2012.3.3295	NW	5		105-110	Lithic	Debitage		1	0.009	PDC				G4
2012.3.3296	NW	5		105-110	Lithic	Debitage		1	0.012	PDC				G5
2012.3.3297	NW	5		105-110	Lithic	Debitage		1	0.000	GM				G5

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.3298	NW	5		105-110	Lithic	Debitage		1	0.000	Cedar Valley				G5
2012.3.3299	NW	5		95-100	Lithic	Tool	Ground Stone Tool Frag.	1	26.144	Indeterminate				G1
2012.3.3300	NW	5		95-100	Pottery	Sherd	Body	1	1.320	Pottery				G2
2012.3.3301	NW	5		95-100	Pottery	Sherd	Body	5	0.272	Pottery				G4
2012.3.3302	NW	5		95-100	Lithic	Debitage		1	0.441	PDC			1	G3
2012.3.3303	NW	5		95-100	Lithic	Debitage		1	0.055	Hixton Orthoquartzite				G4
2012.3.3304	NW	5		95-100	Lithic	Debitage		1	0.008	GM				G5
2012.3.3306	NW	5		120-125	Pottery	Sherd	Body	1	0.169	Pottery				G3
2012.3.3307	NW	5		120-125	Pottery	Sherd	Body	5	0.393	Pottery				G4
2012.3.3308	NW	5		120-125	Lithic	Debitage		1	0.017	PDC				G5
2012.3.3309	NW	5		50-55	Pottery	Sherd	Body	1	0.613	Pottery				G3
2012.3.3310	NW	5		50-55	Pottery	Sherd	Body	6	0.399	Pottery				G4
2012.3.3311	NW	5		50-55	Lithic	Tool	Biface Frag.	1	3.675	GM				G2
2012.3.3312	NW	5		50-55	Lithic	Debitage		1	0.015	PDC			1	G5
2012.3.3313	NW	5		50-55	Lithic	Debitage		1	0.006	Cedar Valley				G5
2012.3.3314	NW	5		50-55	Lithic	Debitage		5	0.055	GM				G5
2012.3.3315	NW	5		95-100	Pottery	Sherd	Body	2	1.861	Pottery				G3
2012.3.3316	NW	5		95-100	Lithic	Debitage		1	0.043	Hixton Orthoquartzite				G5
2012.3.3317	NW	5		110-115	Pottery	Sherd	Body	7	0.394	Pottery				G4
2012.3.3318	NW	5		110-115	Lithic	Debitage		3	0.049	PDC				G5
2012.3.3319	NW	5		105-110	Pottery	Sherd	Body	2	0.229	Pottery				G4
2012.3.3320	NW	5		105-110	Lithic	Debitage		1	0.057	PDC				G4
2012.3.3321	NW	5		105-110	Lithic	Debitage		1	0.000	GM				G5
2012.3.3322	NW	5		105-110	Lithic	Debitage		1	0.010	GM			1	G5
2012.3.3323	NW	5		120-125	Pottery	Sherd	Body	2	1.226	Pottery				G3
2012.3.3324	NW	5		120-125	Pottery	Sherd	Body	1	0.032	Pottery				G4
2012.3.3325	NW	5		120-125	Lithic	Debitage		2	0.019	GM				G5
2012.3.3326	NW	5		120-125	Lithic	Debitage		2	0.029	PDC				G5
2012.3.3327	NW	5		110-115	Lithic	Debitage		1	0.007	Hixton Orthoquartzite				G5
2012.3.3328	NW	5		110-115	Lithic	Debitage		2	0.015	GM				G5
2012.3.3329	NW	5		100-105	Pottery	Sherd	Body	2	0.386	Pottery				G4
2012.3.3330	NW	5		100-105	Lithic	Debitage		1	0.035	PDC			1	G4
2012.3.3331	NW	5		100-105	Lithic	Debitage		1	0.000	PDC				G5
2012.3.3332	NW	5		100-105	Lithic	Debitage		4	0.066	GM				G5
2012.3.3333	NW	5		100-105	Lithic	Debitage		1	0.000	Hixton Orthoquartzite				G5
2012.3.3334	NW	5		95-100	Pottery	Sherd	Body	2	0.335	Pottery				G3
2012.3.3335	NW	5		95-100	Pottery	Sherd	Body	4	0.141	Pottery				G4
2012.3.3336	NW	5		95-100	Lithic	Debitage		1	0.022	GM				G4
2012.3.3337	NW	5		95-100	Lithic	Debitage		1	0.000	PDC				G5
2012.3.3338	NW	5		105-110	Pottery	Sherd	Body	1	0.819	Pottery				G2
2012.3.3339	NW	5		105-110	Pottery	Sherd	Body	2	0.660	Pottery				G3
2012.3.3340	NW	5		105-110	Lithic	Debitage		1	0.068	PDC				G4
2012.3.3341	NW	5		105-110	Lithic	Debitage		1	0.029	PDC			1	G4
2012.3.3342	NW	5		105-110	Lithic	Debitage		1	0.059	GM				G4
2012.3.3343	NW	5		105-110	Lithic	Debitage		1	0.135	PDC			1	G4
2012.3.3344	NW	5		105-110	Lithic	Debitage		1	0.001	GM				G5
2012.3.3345	NW	5		105-110	Pottery	Sherd	Body	3	0.118	Pottery				G4
2012.1.3346	NW	5		105-110	Lithic	Debitage		1	0.022	Cedar Valley				G4
2012.1.3347	NW	5		105-110	Lithic	Debitage		1	0.001	GM				G5
2012.3.3348	NE	1		40-45	Pottery	Sherd	Body	2	4.072	Pottery				G2
2012.3.3349	NE	1		40-45	Pottery	Sherd	Body	10	3.944	Pottery				G3
2012.3.3350	NE	1		40-45	Pottery	Sherd	Body	47	3.459	Pottery				G4

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2012.3.3351	NE	1		40-45	Lithic	Tool	Biface Frag	1	1.244	PDC			1	G2
2012.3.3352	NE	1		40-45	Lithic	Debitage		1	0.080	GM		1		G3
2012.3.3353	NE	1		40-45	Lithic	Debitage		1	0.621	PDC		1	1	G3
2012.3.3354	NE	1		40-45	Lithic	Debitage		1	0.355	PDC			1	G3
2012.3.3355	NE	1		40-45	Lithic	Debitage		1	0.142	PDC				G3
2012.3.3356	NE	1		40-45	Lithic	Debitage		1	0.335	GM				G3
2012.3.3357	NE	1		40-45	Lithic	Debitage		6	0.341	PDC				G4
2012.3.3358	NE	1		40-45	Lithic	Debitage		2	0.254	PDC		1	1	G4
2012.3.3359	NE	1		40-45	Lithic	Debitage		5	0.129	GM				G4
2012.3.3360	NE	1		40-45	Lithic	Debitage		2	0.146	GM			1	G4
2012.3.3361	NE	1		40-45	Lithic	Debitage		2	0.054	PDC			1	G4
2012.3.3362	NE	1		40-45	Lithic	Debitage		1	0.033	GM	1			G4
2012.3.3363	NE	1		35-40	Pottery	Sherd	Body	1	2.461	Pottery				G1
2012.3.3364	NE	1		35-40	Pottery	Sherd	Body	2	1.052	Pottery				G3
2012.3.3365	NE	1		35-40	Pottery	Sherd	Body	9	0.578	Pottery				G4
2012.3.3366	NE	1		35-40	Lithic	Debitage		1	0.390	GM				G3
2012.3.3367	NE	1		35-40	Lithic	Debitage		1	0.301	PDC		1		G4
2012.3.3368	NE	1		35-40	Lithic	Debitage		8	0.668	GM				G4
2012.3.3369	NE	1		35-40	Lithic	Debitage		2	0.198	PDC			1	G4
2012.3.3370	NE	1		40-45	Pottery	Sherd	Body	1	1.594	Pottery				G2
2012.3.3371	NE	1		40-45	Pottery	Sherd	Body	10	3.938	Pottery				G3
2012.3.3372	NE	1		40-45	Pottery	Sherd	Body	20	1.527	Pottery				G4
2012.3.3373	NE	1		40-45	Lithic	Debitage		1	5.239	PDC		1		G2
2012.3.3374	NE	1		40-45	Lithic	Debitage		1	1.140	PDC			1	G2
2012.3.3375	NE	1		40-45	Lithic	Debitage		4	0.833	PDC				G3
2012.3.3376	NE	1		40-45	Lithic	Debitage		2	0.401	PDC			1	G3
2012.3.3377	NE	1		40-45	Lithic	Debitage		8	1.153	PDC			1	G4
2021.3.3378	NE	1		40-45	Lithic	Debitage		6	0.137	GM				G4
2012.3.3379	NE	1		40-45	Lithic	Debitage		7	0.273	PDC				G4
2012.3.3380	NE	1		40-45	Lithic	Debitage		1	0.037	GM	1		1	G4
2012.3.3381	NE	1		40-45	Lithic	Debitage		1	0.007	Hixton Orthoquartzite			1	G4
2012.3.3382	NE	1		40-45	Lithic	Debitage		1	0.014	GM			1	G4
2012.3.3383	NE	1	Rodent	35-40	Pottery	Sherd	Body	10	3.253	Pottery				G3
2012.3.3384	NE	1	Rodent	35-40	Pottery	Sherd	Body	18	0.888	Pottery				G4
2012.3.3385	NE	1	Rodent	35-40	Lithic	Debitage	Utilized Flake	1	1.423	GM				G2
2012.3.3386	NE	1	Rodent	35-40	Lithic	Debitage		1	1.531	PDC		1	1	G2
2012.3.3387	NE	1	Rodent	35-40	Lithic	Debitage		2	0.900	PDC			1	G3
2012.3.3388	NE	1	Rodent	35-40	Lithic	Debitage		1	0.158	GM				G3
2012.3.3389	NE	1	Rodent	35-40	Lithic	Debitage		2	0.328	PDC				G3
2012.3.3390	NE	1	Rodent	35-40	Lithic	Debitage		7	0.370	GM				G4
2012.3.3391	NE	1	Rodent	35-40	Lithic	Debitage		6	0.411	PDC			1	G4
2012.3.3392	NE	1	Rodent	35-40	Lithic	Debitage		3	0.121	PDC				G4
2012.3.3393	NE	1		35-40	Pottery	Sherd	Body	1	0.991	Pottery				G2
2012.3.3394	NE	1		35-40	Pottery	Sherd	Body	4	1.766	Pottery				G3
2012.3.3395	NE	1		35-40	Pottery	Sherd	Body	12	0.821	Pottery				G4
2012.3.3396	NE	1		35-40	Lithic	Debitage		2	0.405	GM				G2
2012.3.3397	NE	1		35-40	Lithic	Debitage		1	0.364	PDC		1		G2
2012.3.3398	NE	1		35-40	Lithic	Debitage		4	0.324	GM				G4
2012.3.3399	NE	1		35-40	Lithic	Debitage		5	0.142	PDC				G4
2012.3.3400	NE	1		35-40	Lithic	Debitage		2	0.209	PDC			1	G4
2012.3.3401	NE	1		35-40	Lithic	Debitage		1	0.194	PDC		1	1	G4
2012.3.3402	NE	1		35-40	Pottery	Sherd	Body	6	3.998	Pottery				G2

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.3403	NE	1		35-40	Pottery	Sherd	Body	13	0.826	Pottery				G4
2012.3.3404	NE	1		35-40	Lithic	Debitage		1	7.415	PDC		1	1	G2
2012.3.3405	NE	1		35-40	Lithic	Tool	Projectile Point Frag	1	0.524	PDC				G3
2012.3.3406	NE	1		35-40	Lithic	Debitage		1	0.585	PDC		1	1	G3
2012.3.3407	NE	1		35-40	Lithic	Debitage		1	0.363	GM				G3
2012.3.3408	NE	1		35-40	Lithic	Debitage		2	1.434	PDC			1	G3
2012.3.3409	NE	1		35-40	Lithic	Debitage		1	0.798	PDC				G3
2012.3.3410	NE	1		35-40	Lithic	Debitage		7	0.349	GM				G4
2012.3.3411	NE	1		35-40	Lithic	Debitage		1	0.016	PDC			1	G4
2012.3.3412	NE	1		35-40	Lithic	Debitage		7	0.277	PDC				G4
2012.3.3414	NE	1		30-35	Pottery	Sherd	Body	6	0.327	Pottery				G4
2012.3.3415	NE	1		30-35	Pottery	Sherd	Body	9	4.299	Pottery				G3
2012.3.3416	NE	1		30-35	Pottery	Sherd	Body	9	0.636	Pottery				G4
2012.3.3417	NE	1		30-35	Lithic	Debitage		1	0.495	GM				G3
2012.3.3418	NE	1		30-35	Lithic	Debitage		3	0.057	GM				G4
2021.3.3419	NE	1		30-35	Lithic	Debitage		5	0.252	PDC			1	G4
2012.3.3420	NE	1		35-40	Pottery	Sherd	Shoulder	1	2.807	Pottery				G2
2012.3.3421	NE	1		35-40	Pottery	Sherd	Body	2	0.297	Pottery				G3
2012.3.3422	NE	1		35-40	Pottery	Sherd	Body	9	0.624	Pottery				G4
2012.3.3423	NE	1		35-40	Lithic	Debitage		5	1.758	PDC				G3
2012.3.3424	NE	1		35-40	Lithic	Debitage		3	0.075	GM				G4
2012.3.3425	NE	1		35-40	Lithic	Debitage		3	0.135	PDC				G4
2012.3.3426	NE	1		35-40	Lithic	Debitage		3	0.347	PDC			1	G4
2012.3.3427	NE	1		30-35	Pottery	Sherd	Body	1	2.548	Pottery				G2
2012.3.3428	NE	1		30-35	Pottery	Sherd	Body	1	1.043	Pottery				G3
2012.3.3429	NE	1		30-35	Pottery	Sherd	Body	11	0.450	Pottery				G4
2012.3.3430	NE	1		30-35	Lithic	Debitage		1	0.215	PDC				G3
2012.3.3431	NE	1		30-35	Lithic	Debitage		2	1.549	PDC			1	G3
2012.3.3432	NE	1		30-35	Lithic	Debitage		1	0.761	Cedar Valley			1	G3
2012.3.3433	NE	1		30-35	Lithic	Debitage		2	0.093	PDC				G4
2012.3.3434	NE	1		30-35	Lithic	Debitage		4	0.190	PDC			1	G4
2012.3.3435	NE	1		30-35	Lithic	Debitage		1	0.027	GM				G4
2012.3.3436	NE	1		30-35	Lithic	Tool	Projectile Point Frag	1	0.194	PDC			1	G4
2012.3.3437	NE	1		30-35	Pottery	Sherd	Body	1	3.645	Pottery				G2
2012.3.3438	NE	1		30-35	Pottery	Sherd	Body	6	2.107	Pottery				G3
2012.3.3439	NE	1		30-35	Pottery	Sherd	Body	9	1.023	Pottery				G4
2012.3.3440	NE	1		30-35	Lithic	Debitage		1	0.084	PDC			1	G4
2012.3.3441	NE	1		30-35	Lithic	Debitage		2	0.155	PDC				G4
2012.3.3442	NE	1		30-35	Lithic	Debitage		1	0.066	GM				G4
2012.3.3443	NE	1		25-30	Pottery	Sherd	Body	3	1.080	Pottery				G3
2012.3.3444	NE	1		25-30	Pottery	Sherd	Body	4	0.188	Pottery				G4
2012.3.3445	NE	1		25-30	Lithic	Debitage		1	3.477	PDC		1	1	G2
2012.3.3446	NE	1		25-30	Lithic	Debitage		3	0.070	PDC			1	G4
2012.3.3447	NE	1		25-30	Lithic	Debitage		1	0.131	PDC			1	G3
2012.3.3448	NE	1		25-30	Pottery	Sherd		3	1.791	Pottery				G3
2012.3.3449	NE	1		25-30	Pottery	Sherd		11	0.948	Pottery				G4
2012.3.3450	NE	1		25-30	Lithic	Tool	Projectile Point Frag	1	0.393	GM				G3
2012.3.3451	NE	1		25-30	Lithic	Debitage		1	0.196	GM				G3
2012.3.3452	NE	1		25-30	Lithic	Debitage		1	0.025	GM		1		G4
2012.3.3453	NE	1		25-30	Lithic	Debitage		1	0.104	PDC				G4
2012.3.3454	NE	1	Eastern Edge	25-30	Pottery	Sherd	Body	2	0.499	Pottery				G3
2012.3.3455	NE	1	Eastern Edge	25-30	Pottery	Sherd	Body	6	0.414	Pottery				G4

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.3456	NE	1	Eastern Edge	25-30	Lithic	Debitage		1	0.530	GM			1	G3
2012.3.3457	NE	1	Eastern Edge	25-30	Lithic	Debitage		3	0.095	GM				G4
2012.3.3458	NE	1	Eastern Edge	25-30	Lithic	Debitage		1	0.149	PDC				G4
2012.3.3459	NE	1	Eastern Edge	25-30	Lithic	Debitage		1	0.016	PDC			1	G4
2012.3.3460	NE	1		30-35	Pottery	Sherd	Body	1	0.739	Pottery				G3
2012.3.3461	NE	1		30-35	Pottery	Sherd	Body	7	0.525	Pottery				G4
2012.3.3462	NE	1		30-35	Lithic	Debitage		1	10.496	GM		1		G2
2012.3.3463	NE	1		30-35	Lithic	Debitage		1	0.717	GM				G3
2012.3.3464	NE	1		30-35	Lithic	Debitage		1	0.417	PDC			1	G3
2012.3.3465	NE	1		30-35	Lithic	Debitage		1	0.035	Hixton Orthoquartzite		1	1	G4
2012.3.3466	NE	1		30-35	Lithic	Debitage		7	0.277	PDC			1	G4
2012.3.3467	NW	1		90-95	Pottery	Sherd	Body	2	0.094	Pottery				G4
2012.3.3468	NW	1		90-95	Lithic	Debitage		1	0.054	GM				G4
2012.3.3469	NW	1		85-90	Lithic	Debitage		1	1.284	GM				G2
2012.3.3470	NW	1		85-90	Pottery	Sherd	Body	2	0.055	Pottery				G4
2012.3.3471	NW	1		85-90	Lithic	Debitage		1	0.046	PDC				G4
2012.3.3472	NW	1		85-90	Lithic	Debitage		1	0.050	GM				G4
2012.3.3473	NE	1		25-30	Pottery	Sherd	Body	1	0.075	Pottery				G2
2012.3.3474	NE	1		25-30	Pottery	Sherd	Body	4	0.778	Pottery				G3
2012.3.3475	NE	1		25-30	Pottery	Sherd	Body	5	0.332	Pottery				G4
2012.3.3476	NE	1		25-30	Lithic	Debitage		5	0.339	PDC			1	G4
2012.3.3477	NE	1		25-30	Lithic	Debitage		3	0.237	PDC				G4
2012.3.3478	NE	1		25-30	Lithic	Debitage		3	0.065	GM				G4
2012.3.3479	NW	1		85-90	Pottery	Sherd	Body	4	0.506	Pottery				G3
2012.3.3480	NW	1		85-90	Pottery	Sherd	Body	2	0.455	Pottery				G4
2012.3.3482	NW	1		85-90	Lithic	Debitage		4	0.249	PDC			1	G4
2012.3.3483	NW	1		80-85	Pottery	Sherd	Body	1	0.599	Pottery				G3
2012.3.3484	NW	1		80-85	Pottery	Sherd	Body	4	0.249	Pottery				G4
2012.3.3485	NW	1		80-85	Lithic	Debitage		1	0.589	PDC			1	G3
2012.3.3486	NW	1		80-85	Lithic	Debitage		3	0.890	PDC			1	G4
2012.3.3487	NW	1		60-65	Pottery	Sherd	Body	1	0.432	Pottery				G3
2012.3.3488	NW	1		60-65	Pottery	Sherd	Body	1	0.118	Pottery				G4
2012.3.3489	NW	1		60-65	Lithic	Tool	Perforator	1	1.867	PDC		1	1	G2
2012.3.3490	NW	1		60-65	Lithic	Debitage		1	0.259	PDC			1	G4
2012.3.3491	NW	1		60-65	Lithic	Debitage		1	0.020	PDC				G4
2012.3.3492	NW	1		65-70	Pottery	Sherd	Body	2	1.287	Pottery				G3
2012.3.3493	NW	1		65-70	Pottery	Sherd	Body	2	0.149	Pottery				G4
2012.3.3494	NW	1		65-70	Lithic	Debitage	Utilized Flake	1	0.806	GM				G3
2012.3.3495	NW	1		65-70	Lithic	Debitage		1	0.940	PDC			1	G3
2012.3.3496	NW	1		65-70	Pottery	Sherd	Body	1	0.212	Pottery				G3
2012.3.3497	NW	1		65-70	Pottery	Sherd	Body	3	0.097	Pottery				G4
2012.3.3498	NW	1		65-70	Lithic	Debitage		2	0.042	GM				G4
2012.3.3499	NW	1		70-75	Pottery	Sherd	Body	3	0.711	Pottery				G3
2012.3.3500	NW	1		70-75	Pottery	Sherd	Body	7	0.539	Pottery				G4
2012.3.3501	NW	1		70-75	Lithic	Debitage		1	0.879	PDC				G3
2012.3.3502	NW	1		70-75	Lithic	Debitage		1	0.495	PDC			1	G3
2012.3.3503	NW	1		70-75	Lithic	Debitage		1	0.070	GM		1		G1
2012.3.3504	NW	1		65-70	Pottery	Sherd	Body	3	7.101	Pottery				G2
2012.3.3505	NW	1		65-70	Pottery	Sherd	Body	5	2.132	Pottery				G3
2012.3.3506	NW	1		65-70	Pottery	Sherd	Body	8	0.358	Pottery				G4
2012.3.3507	NW	1		65-70	Lithic	Debitage		2	0.057	PDC			1	G4
2012.3.3508	NW	1		65-70	Lithic	Debitage		1	0.090	Hixton Orthoquartzite		1		G4

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.3509	NW	1		75-80	Pottery	Sherd	Neck	1	16.300	Pottery				G1
2012.3.3510	NW	1		75-80	Pottery	Sherd	Body	2	3.824	Pottery				G2
2012.3.3511	NW	1		75-80	Pottery	Sherd	Body	1	2.483	Pottery				G2
2012.3.3512	NW	1		75-80	Pottery	Sherd	Body	5	1.929	Pottery				G3
2012.3.3513	NW	1		75-80	Lithic	Debitage		2	0.914	PDC		1	1	G3
2012.3.3514	NW	1		75-80	Lithic	Debitage		2	0.112	PDC			1	G4
2012.3.3515	NW	1		75-80	Lithic	Debitage		1	0.026	PDC				G4
2012.3.3516	NW	1		75-80	Pottery	Sherd	Body	8	0.361	Pottery				G4
2012.3.3517	NW	1		70-75	Pottery	Sherd	Body	4	0.816	Pottery				G3
2012.3.3518	NW	1		70-75	Lithic	Debitage		1	0.012	PDC			1	G4
2012.3.3519	NW	1		70-75	Lithic	Debitage		1	0.009	GM			1	G4
2012.3.3520	NW	1		70-75	Lithic	Debitage		1	0.023	GM				G4
2012.3.3521	NW	1		75-80	Pottery	Sherd	Body	2	3.993	Pottery				G2
2012.3.3522	NW	1		75-80	Pottery	Sherd	Body	2	1.122	Pottery				G3
2012.3.3523	NW	1		75-80	Pottery	Sherd	Body	4	0.126	Pottery				G4
2012.3.3524	NW	1		75-80	Lithic	Debitage		1	0.115	PDC		1	1	G4
2012.3.3525	NW	1		75-80	Lithic	Debitage		4	0.035	PDC				G4
2012.3.3526	NW	1		80-85	Pottery	Sherd	Body	3	1.096	Pottery				G3
2012.3.3527	NW	1		80-85	Lithic	Debitage		1	0.678	PDC				G3
2012.3.3528	NW	1		60-65	Pottery	Sherd	Body	2	1.271	Pottery				G2
2012.3.3529	NW	1		60-65	Pottery	Sherd	Body	5	1.881	Pottery				G3
2012.3.3530	NW	1		60-65	Pottery	Sherd	Body	12	0.787	Pottery				G4
2012.3.3532	NW	1		60-65	Lithic	Debitage		1	6.963	GM				G2
2012.3.3533	NW	1		60-65	Lithic	Debitage		1	0.268	PDC				G3
2012.3.3534	NW	1		60-65	Lithic	Debitage		2	0.241	PDC		1	1	G3
2012.3.3535	NW	1		60-65	Lithic	Debitage		2	0.726	PDC			1	G3
2012.3.3536	NW	1		60-65	Lithic	Debitage		1	0.042	GM		1		G4
2012.3.3537	NW	1		60-65	Lithic	Debitage		7	0.287	PDC				G4
2012.3.3538	NW	1		60-65	Lithic	Debitage		17	0.859	PDC			1	G4
2012.3.3539	NW	1		60-65	Lithic	Manuport		1	1.676	Indeterminate			1	G1
2012.3.3540	NW	1		60-65	Pottery	Sherd	Body	1	2.248	Pottery				G2
2012.3.3541	NW	1		60-65	Pottery	Sherd	Body	10	3.804	Pottery				G3
2012.3.3542	NW	1		60-65	Pottery	Sherd	Body	20	0.891	Pottery				G4
2012.3.3545	NW	1		60-65	Lithic	Debitage		2	1.373	PDC				G3
2012.3.3546	NW	1		60-65	Lithic	Debitage		1	0.786	PDC		1	1	G3
2012.3.3547	NW	1		60-65	Lithic	Debitage		3	0.922	GM				G3
2012.3.3548	NW	1		60-65	Lithic	Debitage		4	0.146	GM				G4
2012.3.3549	NW	1		60-65	Lithic	Debitage		4	0.224	PDC				G4
2012.3.3550	NW	1		60-65	Lithic	Debitage		8	0.337	PDC			1	G4
2012.3.3551	NW	1		55-60	Pottery	Sherd	Shoulder	1	3.605	Pottery				G1
2012.3.3552	NW	1		55-60	Pottery	Sherd	Body	6	14.428	Pottery				G1
2012.3.3553	NW	1		55-60	Pottery	Sherd	Body	42	2.572	Pottery				G4
2012.3.3555	NW	1		55-60	Lithic	Tool	Projectile Point Frag	1	0.240	PDC				G3
2012.3.3556	NW	1		55-60	Lithic	Tool	Projectile Point Frag	1	0.477	GM				G3
2012.3.3557	NW	1		55-60	Lithic	Debitage		2	0.649	GM				G3
2012.3.3558	NW	1		55-60	Lithic	Debitage		2	0.181	GM			1	G3
2012.3.3559	NW	1		55-60	Lithic	Debitage		12	4.655	PDC				G3
2012.3.3560	NW	1		55-60	Lithic	Debitage		4	9.606	PDC		1		G3
2012.3.3561	NW	1		55-60	Lithic	Debitage		1	1.897	PDC			1	G2
2012.3.3562	NW	1		55-60	Lithic	Debitage		1	1.336	GM		1		G3
2012.3.3563	NW	1		55-60	Lithic	Debitage		1	1.091	PDC		1	1	G3
2012.3.3564	NW	1		55-60	Lithic	Debitage		5	20.356	PDC		1	1	G2

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2012.3.3565	NW	1		55-60	Lithic	Debitage		1	2.094	PDC		1		G2
2012.3.3566	NW	1		55-60	Lithic	Debitage		11	5.488	PDC			1	G3
2012.3.3567	NW	1		55-60	Lithic	Debitage		5	0.274	GM				G4
2012.3.3568	NW	1		55-60	Lithic	Debitage		5	0.340	PDC		1		G4
2012.3.3569	NW	1		55-60	Lithic	Debitage		24	1.190	PDC				G4
2012.3.3570	NW	1		55-60	Lithic	Debitage		25	1.831	PDC			1	G4
2012.3.3571	NW	1		55-60	Lithic	Debitage		1	0.071	GM				G4
2012.3.3572	NW	1		55-60	Pottery	Sherd	Body	18	5.853	Pottery				G3
2012.3.3577	NW	1		50-55	Pottery	Sherd	Body	1	5.990	Pottery				G1
2012.3.3578	NW	1		50-55	Pottery	Sherd	Body	2	2.410	Pottery				G2
2012.3.3579	NW	1		50-55	Pottery	Sherd	Body	21	6.620	Pottery				G3
2012.3.3580	NW	1		50-55	Pottery	Sherd	Body	32	2.076	Pottery				G4
2012.3.3581	NW	1		50-55	Lithic	Debitage		4	11.575	PDC		1	1	G1
2012.3.3582	NW	1		50-55	Lithic	Debitage		2	0.858	PDC			1	G1
2012.3.3583	NW	1		50-55	Lithic	Debitage		2	1.897	PDC		1		G1
2012.3.3584	NW	1		50-55	Lithic	Debitage	Utilized Flake	1	1.847	PDC			1	G1
2012.3.3585	NW	1		50-55	Lithic	Debitage		3	0.221	PDC		1		G4
2012.3.3586	NW	1		50-55	Lithic	Debitage		3	0.086	GM				G4
2012.3.3587	NW	1		50-55	Lithic	Debitage		3	0.119	GM			1	G4
2012.3.3588	NW	1		50-55	Lithic	Debitage		17	0.992	PDC			1	G4
2012.3.3589	NW	1		50-55	Lithic	Debitage		18	1.346	PDC				G4
2012.3.3590	NW	1		55-60	Pottery	Sherd	Body	1	0.783	Pottery				G2
2012.3.3591	NW	1		55-60	Pottery	Sherd	Body	6	3.093	Pottery				G3
2012.3.3592	NW	1		55-60	Pottery	Sherd	Body	21	1.469	Pottery				G4
2012.3.3593	NW	1		55-60	Lithic	Debitage		2	21.626	PDC		1	1	G1
2012.3.3594	NW	1		55-60	Lithic	Debitage		2	10.522	PDC		1	1	G2
2012.3.3595	NW	1		55-60	Lithic	Debitage		1	1.256	PDC		1		G2
2012.3.3596	NW	1		55-60	Lithic	Debitage		1	1.677	PDC				G2
2012.3.3597	NW	1		55-60	Lithic	Debitage		4	0.822	PDC				G3
2012.3.3598	NW	1		55-60	Lithic	Debitage		2	0.653	PDC			1	G3
2012.3.3599	NW	1		55-60	Lithic	Debitage		6	2.424	PDC		1	1	G3
2012.3.3600	NW	1		55-60	Lithic	Debitage		1	0.007	Cedar Valley				G4
2012.3.3601	NW	1		55-60	Lithic	Debitage		16	0.889	PDC			1	G4
2012.3.3602	NW	1		55-60	Lithic	Debitage		1	0.403	PDC		1	1	G4
2012.3.3603	NW	1		55-60	Lithic	Debitage		1	0.046	GM		1	1	G4
2012.3.3604	NW	1		55-60	Lithic	Debitage		1	0.118	GM			1	G4
2012.3.3605	NW	1		55-60	Lithic	Debitage		24	1.377	PDC				G4
2012.3.3606	NW	1		45-50	Pottery	Sherd	Body	1	2.410	Pottery				G2
2012.3.3607	NW	1		45-50	Pottery	Sherd	Body	1	0.411	Pottery				G3
2012.3.3608	NW	1		45-50	Pottery	Sherd	Body	15	0.816	Pottery				G4
2012.3.3609	NW	1		45-50	Lithic	Debitage		1	1.005	GM				G2
2012.3.3610	NW	1		45-50	Lithic	Debitage		1	2.527	PDC		1	1	G2
2012.3.3611	NW	1		45-50	Lithic	Debitage		3	1.183	PDC			1	G3
2012.3.3612	NW	1		45-50	Lithic	Debitage		2	0.111	GM				G4
2012.3.3613	NW	1		45-50	Lithic	Debitage		3	0.211	PDC			1	G4
2012.3.3614	NW	1		45-50	Lithic	Debitage		2	0.075	PDC				G4
2012.3.3615	NW	1		45-50	Lithic	Debitage		1	0.019	Cedar Valley				G4
2012.3.3616	NW	1		45-50	Pottery	Sherd	Body	1	1.709	Pottery				G2
2012.3.3617	NW	1		45-50	Pottery	Sherd	Body	4	0.956	Pottery				G3
2012.3.3618	NW	1		45-50	Pottery	Sherd	Body	37	1.627	Pottery				G4
2012.3.3619	NW	1		45-50	Lithic	Debitage		1	2.587	PDC		1		G2
2012.3.3620	NW	1		45-50	Lithic	Debitage		3	0.261	PDC			1	G4

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2012.3.3621	NW	1		45-50	Lithic	Debitage		3	0.109	PDC				G4
2012.3.3622	NW	1		45-50	Lithic	Debitage		2	0.177	GM				G4
2012.3.3623	NW	1		45-50	Lithic	Debitage		1	0.049	GM			1	G4
2012.3.3624	NW	1		45-50	Pottery	Sherd	Body	2	3.349	Pottery				G2
2012.3.3625	NW	1		45-50	Pottery	Sherd	Body	12	3.640	Pottery				G3
2012.3.3626	NW	1		45-50	Pottery	Sherd	Body	22	1.369	Pottery				G4
2012.3.3627	NW	1		45-50	Lithic	Tool	Perforator	1	3.145	PDC	1		1	G2
2012.3.3628	NW	1		45-50	Lithic	Debitage		2	5.720	PDC			1	G2
2012.3.3629	NW	1		45-50	Lithic	Debitage		1	0.395	PDC			1	G3
2012.3.3630	NW	1		45-50	Lithic	Debitage		2	0.557	PDC		1	1	G3
2012.3.3631	NW	1		45-50	Lithic	Debitage		1	0.288	PDC				G3
2012.3.3632	NW	1		45-50	Lithic	Debitage		1	0.546	GM				G3
2012.3.3633	NW	1		45-50	Lithic	Debitage		4	0.136	PDC			1	G4
2012.3.3634	NW	1		45-50	Lithic	Debitage		5	0.234	PDC				G4
2012.3.3635	NW	1		45-50	Lithic	Debitage		1	0.142	GM			1	G4
2012.3.3636	NW	1		45-50	Lithic	Debitage		3	0.298	GM				G4
2012.3.3637	NW	1		50-55	Pottery	Sherd	Body	2	16.935	Pottery				G1
2012.3.3638	NW	1		50-55	Pottery	Sherd	Body	4	10.286	Pottery				G2
2012.3.3639	NW	1		50-55	Pottery	Sherd	Body	12	5.342	Pottery				G3
2012.3.3640	NW	1		50-55	Pottery	Sherd	Body	55	4.575	Pottery				G4
2012.3.3642	NW	1		50-55	Lithic	Debitage		1	1.966	PDC		1	1	G2
2012.3.3643	NW	1		50-55	Lithic	Debitage		6	2.769	PDC				G2
2012.3.3644	NW	1		50-55	Lithic	Debitage		2	0.366	PDC			1	G3
2012.3.3645	NW	1		50-55	Lithic	Debitage		1	0.757	PDC	1			G3
2012.3.3646	NW	1		50-55	Lithic	Debitage		2	1.240	PDC		1	1	G3
2012.3.3647	NW	1		50-55	Lithic	Debitage		2	1.600	GM		1		G3
2012.3.3648	NW	1		50-55	Lithic	Debitage		1	0.436	GM		1	1	G3
2012.3.3649	NW	1		50-55	Lithic	Debitage		9	0.496	PDC				G4
2012.3.3650	NW	1		50-55	Lithic	Debitage		3	0.212	PDC		1		G4
2012.3.3651	NW	1		50-55	Lithic	Debitage		6	0.370	GM				G4
2012.3.3652	NW	1		50-55	Lithic	Debitage		20	0.801	GM				G4
2012.3.3653	NW	1		50-55	Lithic	Debitage		1	0.024	Cedar Valley				G4
2012.3.3654	NW	1		35-40	Pottery	Sherd	Body	4	2.264	Pottery				G3
2012.3.3655	NW	1		35-40	Pottery	Sherd	Body	12	0.659	Pottery				G4
2012.3.3656	NW	1		35-40	Lithic	Debitage		2	0.061	PDC			1	G4
2012.3.3657	NW	1		35-40	Lithic	Debitage		9	0.253	GM				G4
2012.3.3658	NW	1		35-40	Lithic	Debitage		1	0.035	PDC			1	G4
2012.3.3659	NW	1		35-40	Lithic	Tool	Projectile Point Frag	1	0.022	PDC				G4
2012.3.3660	NW	1		40-45	Pottery	Sherd	Body	4	5.430	Pottery				G2
2012.3.3661	NW	1		40-45	Pottery	Sherd	Body	9	2.937	Pottery				G3
2012.3.3662	NW	1		40-45	Pottery	Sherd	Body	11	0.972	Pottery				G4
2012.3.3663	NW	1		40-45	Lithic	Debitage		1	0.820	PDC		1	1	G3
2012.3.3664	NW	1		40-45	Lithic	Debitage		1	0.281	PDC			1	G3
2012.3.3665	NW	1		40-45	Lithic	Debitage		1	0.152	PDC				G3
2012.3.3666	NW	1		40-45	Lithic	Debitage		4	0.308	PDC			1	G4
2012.3.3667	NW	1		40-45	Lithic	Debitage		3	0.159	GM				G4
2012.3.3668	NW	1		40-45	Lithic	Debitage		2	0.081	PDC				G4
2012.3.3669	NW	1		40-45	Lithic	Debitage		1	0.340	PDC		1		G4
2012.3.3670	NW	1		40-45	Lithic	Debitage		3	0.148	PDC				G4
2012.3.3671	NW	1		40-45	Lithic	Debitage		1	0.079	PDC			1	G4
2012.3.3672	NW	1		40-45	Lithic	Debitage		1	0.031	GM				G4
2012.3.3673	NW	1		40-45	Pottery	Sherd	Body	1	1.037	Pottery				G2

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.3674	NW	1		40-45	Pottery	Sherd	Body	9	3.656	Pottery				G3
2012.3.3675	NW	1		40-45	Pottery	Sherd	Body	22	1.209	Pottery				G4
2012.3.3676	NW	1		40-45	Lithic	Debitage		2	3.918	PDC			1	G2
2012.3.3677	NW	1		40-45	Lithic	Debitage		1	2.573	PDC		1	1	G2
2012.3.3678	NW	1		40-45	Lithic	Debitage		1	0.753	PDC	1		1	G3
2012.3.3679	NW	1		40-45	Lithic	Debitage		1	0.185	PDC			1	G3
2012.3.3680	NW	1		40-45	Lithic	Debitage		2	0.560	PDC				G3
2012.3.3681	NW	1		40-45	Lithic	Debitage		1	0.213	GM				G3
2012.3.3682	NW	1		40-45	Lithic	Tool	Projectile Point Frag	1	0.286	GM				G3
2012.3.3683	NW	1		40-45	Lithic	Debitage		2	0.074	Hixton Orthoquartzite				G4
2012.3.3684	NW	1		40-45	Lithic	Debitage		2	0.174	PDC				G4
2012.3.3685	NW	1		40-45	Lithic	Debitage		6	0.354	PDC			1	G4
2012.3.3686	NW	1		40-45	Lithic	Debitage		10	0.571	GM				G4
2012.3.3687	NW	1		35-40	Pottery	Sherd	Body	6	1.338	Pottery				G3
2012.3.3688	NW	1		35-40	Pottery	Sherd	Body	6	0.384	Pottery				G4
2012.3.3689	NW	1		35-40	Lithic	Debitage		1	4.907	PDC		1	1	G1
2012.3.3690	NW	1		35-40	Lithic	Debitage		1	1.049	PDC			1	G2
2012.3.3691	NW	1		35-40	Lithic	Debitage		1	0.263	PDC				G3
2012.3.3692	NW	1		35-40	Lithic	Debitage		1	1.945	PDC		1	1	G3
2012.3.3693	NW	1		35-40	Lithic	Debitage		1	0.078	PDC		1	1	G4
2012.3.3694	NW	1		35-40	Lithic	Debitage		3	0.128	PDC				G4
2012.3.3695	NW	1		35-40	Lithic	Debitage		3	0.099	PDC			1	G4
2012.3.3696	NW	1		35-40	Lithic	Debitage		1	0.058	GM			1	G4
2012.3.3697	NW	1		35-40	Lithic	Debitage		2	0.164	GM				G4
2012.3.3698	NW	1		35-40	Pottery	Sherd	Body	4	0.255	Pottery				G4
2012.3.3699	NW	1		35-40	Lithic	Debitage		1	0.463	PDC				G2
2012.3.3700	NW	1		35-40	Lithic	Debitage		1	0.404	PDC			1	G2
2012.3.3701	NW	1		35-40	Lithic	Debitage		2	0.198	PDC				G3
2012.3.3702	NW	1		35-40	Lithic	Debitage		2	0.047	PDC			1	G4
2012.3.3703	NW	1		35-40	Lithic	Debitage		2	0.064	Hixton Orthoquartzite				G4
2012.3.3704	NW	1		35-40	Lithic	Debitage		3	0.108	GM				G4
2012.3.3705	NW	1		35-40	Lithic	Debitage		2	0.867	GM				G2
2012.3.3706	NW	1		35-40	Lithic	Debitage		1	0.017	GM		1		G4
2012.3.3707	NW	1		30-35	Pottery	Sherd	Body	1	0.198	Pottery				G3
2012.3.3708	NW	1		30-35	Pottery	Sherd	Body	4	0.340	Pottery				G4
2012.3.3709	NW	1		30-35	Lithic	Debitage		1	0.804	GM		1	1	G3
2012.3.3710	NW	1		30-35	Lithic	Debitage		1	0.220	GM				G3
2012.3.3711	NW	1		30-35	Lithic	Debitage		5	0.372	PDC				G3
2012.3.3712	NW	1		30-35	Lithic	Debitage		1	0.034	Hixton Orthoquartzite				G4
2012.3.3713	NW	1		30-35	Lithic	Debitage		2	0.058	PDC			1	G4
2012.3.3714	NW	1		30-35	Lithic	Debitage		2	0.016	PDC				G4
2012.3.3715	NW	1		30-35	Lithic	Debitage		1	0.013	GM				G4
2012.3.3716	NW	1		30-35	Lithic	Debitage		1	0.034	GM		1		G4
2012.3.3717	NW	1		25-30	Pottery	Sherd	Shoulder	1	4.006	Pottery				G1
2012.3.3718	NW	1		25-30	Pottery	Sherd	Body	1	0.496	Pottery				G2
2012.3.3719	NW	1		25-30	Pottery	Sherd	Body	2	0.349	Pottery				G3
2012.3.3720	NW	1		25-30	Pottery	Sherd	Body	10	0.622	Pottery				G4
2012.3.3721	NW	1		25-30	Lithic	Debitage		2	0.617	PDC				G3
2012.3.3722	NW	1		25-30	Lithic	Debitage		1	0.997	PDC		1		G3
2012.3.3723	NW	1		25-30	Lithic	Debitage		2	1.281	PDC			1	G3
2012.3.3724	NW	1		25-30	Lithic	Debitage		2	0.597	Hixton Orthoquartzite				G3
2012.3.3725	NW	1		25-30	Lithic	Debitage		2	0.116	PDC				G4

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.3726	NW	1		25-30	Lithic	Debitage		1	0.019	Hixton Orthoquartzite				G4
2012.3.3727	NW	1		25-30	Lithic	Debitage		4	0.169	GM				G4
2012.3.3728	NW	1		25-30	Lithic	Debitage		4	0.067	PDC			1	G4
2012.3.3729	NW	1		30-35	Pottery	Sherd	Body	4	5.296	Pottery				G2
2012.3.3730	NW	1		30-35	Lithic	Debitage		1	1.287	GM		1		G2
2012.3.3731	NW	1		30-35	Lithic	Tool	Biface Frag	1	1.146	GM				G3
2012.3.3732	NW	1		30-35	Lithic	Debitage		4	0.405	PDC			1	G4
2012.3.3733	NW	1		30-35	Lithic	Debitage		2	0.064	GM				G4
2012.3.3734	NW	1		30-35	Lithic	Debitage		1	0.108	GM	1			G4
2012.3.3735	NW	1		30-35	Lithic	Debitage		3	0.099	PDC				G4
2012.3.3736	NW	1		30-35	Lithic	Debitage		1	0.034	Hixton Orthoquartzite				G4
2012.3.3737	NW	1		30-35	Pottery	Sherd	Body	2	8.031	Pottery				G2
2012.3.3738	NW	1		30-35	Pottery	Sherd	Body	1	0.303	Pottery				G3
2012.3.3739	NW	1		30-35	Pottery	Sherd	Body	4	0.256	Pottery				G4
2012.3.3740	NW	1		30-35	Lithic	Debitage		1	0.175	PDC			1	G2
2012.3.3741	NW	1		30-35	Lithic	Debitage		1	0.902	PDC				G2
2012.3.3742	NW	1		30-35	Lithic	Debitage		1	0.037	Hixton Orthoquartzite				G4
2012.3.3743	NW	1		30-35	Lithic	Debitage		1	0.025	GM			1	G4
2012.3.3744	NW	1		30-35	Lithic	Debitage		3	0.082	PDC				G4
2012.3.3745	NW	1		30-35	Lithic	Debitage		5	0.161	PDC			1	G4
2012.3.3746	NE	1		40-45	Pottery	Sherd	Body	14	1.024	Pottery				G2
2012.3.3747	NE	1		40-45	Pottery	Sherd	Body	1	1.440	Pottery				G2
2012.3.3748	NE	1		40-45	Pottery	Sherd	Shoulder	1	0.356	Pottery				G3
2012.3.3749	NE	1		40-45	Pottery	Sherd	Body	2	0.169	Pottery				G4
2012.3.3750	NE	1		40-45	Lithic	Debitage		1	0.229	PDC				G3
2012.3.3751	NE	1		40-45	Lithic	Debitage		1	0.767	PDC			1	G3
2012.3.3752	NE	1		40-45	Lithic	Debitage		1	0.211	PDC				G4
2012.3.3753	NE	1		40-45	Lithic	Debitage		1	0.036	PDC		1		G4
2012.3.3754	NE	1		40-45	Lithic	Debitage		1	0.528	PDC		1		G3
2012.3.3755	NE	1		40-45	Pottery	Sherd	Body	4	4.635	Pottery				G2
2012.3.3756	NE	1		40-45	Pottery	Sherd	Body	7	2.234	Pottery				G3
2012.3.3757	NE	1		40-45	Pottery	Sherd	Body	56	3.031	Pottery				G4
2012.3.3758	NE	1		40-45	Lithic	Tool	Projectile Point	1	0.816	PDC				G3
2012.3.3759	NE	1		40-45	Lithic	Tool	Projectile Point	1	0.706	PDC				G3
2012.3.3760	NE	1		40-45	Lithic	Debitage		3	1.494	PDC				G3
2012.3.3761	NE	1		40-45	Lithic	Debitage		1	0.552	PDC			1	G3
2012.3.3762	NE	1		40-45	Lithic	Debitage		1	0.847	PDC				G2
2012.3.3763	NE	1		40-45	Lithic	Debitage		1	0.373	Hixton Orthoquartzite				G3
2012.3.3764	NE	1		40-45	Lithic	Debitage		1	0.169	GM		1		G4
2012.3.3765	NE	1		40-45	Lithic	Debitage		1	0.043	GM			1	G4
2012.3.3766	NE	1		40-45	Lithic	Debitage		1	0.139	GM		1	1	G4
2012.3.3767	NE	1		40-45	Lithic	Debitage		7	0.307	GM				G4
2012.3.3768	NE	1		40-45	Lithic	Debitage		2	0.155	PDC		1	1	G4
2012.3.3769	NE	1		40-45	Lithic	Debitage		4	0.190	PDC			1	G4
2012.3.3770	NE	1		40-45	Lithic	Debitage		9	0.626	PDC				G4
2012.3.3771	NE	1		40-45	Lithic	Debitage		1	0.009	Cedar Valley				G4
2012.3.3772	NE	1		40-45	Lithic	Debitage		1	0.067	Hixton Orthoquartzite				G4
2012.3.3773	NE	1		40-45	Lithic	Debitage		1	0.354	PDC		1		G3
2012.3.3775	NE	1		50-55	Pottery	Sherd	Body	1	1.780	Pottery				G2
2012.3.3776	NE	1		50-55	Pottery	Sherd	Body	5	2.013	Pottery				G3
2012.3.3777	NE	1		50-55	Pottery	Sherd	Body	15	1.453	Pottery				G4
2012.3.3778	NE	1		50-55	Lithic	Debitage		1	2.266	PDC		1	1	G2

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.3779	NE	1		50-55	Lithic	Debitage		1	0.695	PDC			1	G2
2012.3.3780	NE	1		50-55	Lithic	Debitage		5	3.094	PDC			1	G3
2012.3.3781	NE	1		50-55	Lithic	Debitage		3	2.319	PDC		1	1	G3
2012.3.3782	NE	1		50-55	Lithic	Debitage		2	2.170	PDC		1		G3
2012.3.3783	NE	1		50-55	Lithic	Debitage		8	4.359	PDC				G3
2012.3.3784	NE	1		50-55	Lithic	Debitage		2	0.059	GM				G4
2012.3.3785	NE	1		50-55	Lithic	Debitage		2	0.306	PDC		1	1	G4
2012.3.3786	NE	1		50-55	Lithic	Debitage		6	0.506	PDC			1	G4
2012.3.3787	NE	1		50-55	Lithic	Debitage		23	1.571	PDC				G4
2012.3.3788	NE	1		45-50	Pottery	Sherd	Body	3	1.229	Pottery				G3
2012.3.3789	NE	1		45-50	Pottery	Sherd	Body	7	0.347	Pottery				G4
2012.3.3790	NE	1		45-50	Lithic	Tool	Biface Frag	1	2.164	GM				G2
2012.3.3791	NE	1		45-50	Lithic	Debitage		1	3.435	PDC		1	1	G2
2012.3.3792	NE	1		45-50	Lithic	Debitage		1	0.230	PDC		1	1	G3
2012.3.3793	NE	1		45-50	Lithic	Debitage		1	0.237	PDC		1		G3
2012.3.3794	NE	1		45-50	Lithic	Debitage		2	0.411	PDC			1	G3
2012.3.3795	NE	1		45-50	Lithic	Debitage		1	0.293	PDC				G3
2012.3.3796	NE	1		45-50	Lithic	Debitage		1	0.601	GM			1	G3
2012.3.3797	NE	1		45-50	Lithic	Debitage		1	0.470	GM		1		G3
2012.3.3798	NE	1		45-50	Lithic	Debitage		1	0.046	PDC		1		G4
2012.3.3799	NE	1		45-50	Lithic	Debitage		4	0.889	PDC			1	G4
2012.3.3800	NE	1		45-50	Lithic	Debitage		1	0.029	GM				G4
2012.3.3801	NE	1		45-50	Lithic	Debitage		11	0.445	PDC				G4
2012.3.3802	NE	1		50-55	Pottery	Sherd	Body	1	4.212	Pottery				G1
2012.3.3803	NE	1		50-55	Pottery	Sherd	Body	2	4.371	Pottery				G2
2012.3.3804	NE	1		50-55	Pottery	Sherd	Body	5	1.810	Pottery				G3
2012.3.3805	NE	1		50-55	Pottery	Sherd	Body	8	0.707	Pottery				G4
2012.3.3806	NE	1		50-55	Lithic	Debitage		2	2.981	PDC		1	1	G2
2012.3.3807	NE	1		50-55	Lithic	Debitage		2	1.251	PDC				G2
2012.3.3808	NE	1		50-55	Lithic	Debitage		7	2.288	PDC			1	G3
2012.3.3809	NE	1		50-55	Lithic	Debitage		5	3.644	PDC		1	1	G3
2012.3.3810	NE	1		50-55	Lithic	Debitage		3	1.088	PDC		1		G3
2012.3.3811	NE	1		50-55	Lithic	Debitage		7	1.946	PDC				G3
2012.3.3812	NE	1		50-55	Lithic	Debitage		1	0.259	GM			1	G3
2012.3.3813	NE	1		50-55	Lithic	Debitage		3	0.169	GM			1	G4
2012.3.3814	NE	1		50-55	Lithic	Debitage		2	0.040	GM				G4
2012.3.3815	NE	1		50-55	Lithic	Debitage		14	1.293	PDC				G4
2012.3.3816	NE	1		50-55	Lithic	Debitage		9	0.660	PDC			1	G4
2012.3.3817	NE	1		50-55	Lithic	Debitage		1	0.250	GM				G3
2012.3.3818	NE	1		50-55	Pottery	Sherd		4	6.561	Pottery				G2
2012.3.3819	NE	1		50-55	Pottery	Sherd		9	3.607	Pottery				G3
2012.3.3820	NE	1		50-55	Pottery	Sherd		19	1.209	Pottery				G4
2012.3.3822	NE	1		50-55	Lithic	Debitage		3	5.895	PDC		1	1	G2
2012.3.3823	NE	1		50-55	Lithic	Debitage		3	7.978	PDC			1	G2
2012.3.3824	NE	1		50-55	Lithic	Tool	Biface Frag	1	1.071	PDC				G3
2012.3.3825	NE	1		50-55	Lithic	Debitage		12	6.282	PDC				G3
2012.3.3826	NE	1		50-55	Lithic	Debitage		4	1.818	PDC			1	G3
2012.3.3827	NE	1		50-55	Lithic	Debitage		4	1.249	PDC		1	1	G3
2012.3.3828	NE	1		50-55	Lithic	Debitage		1	0.781	PDC		1	1	G3
2012.3.3829	NE	1		50-55	Lithic	Debitage		1	0.204	GM		1		G3
2012.3.3830	NE	1		50-55	Lithic	Debitage		1	1.171	GM	1	1		G3
2012.3.3831	NE	1		50-55	Lithic	Debitage		1	0.098	GM				G3

Catalog ID	Quad	Feature Number	Deposit / Window Number	Level (centimeters)	Artifact Class	Artifact Type	Morphology	Count	Weight (g)	Material	Rind	Cortex	Heat Treated	Artifact Size Grade
2012.3.3832	NE	1		50-55	Lithic	Debitage		4	0.206	GM			1	G4
2012.3.3833	NE	1		50-55	Lithic	Debitage		9	0.322	GM				G4
2012.3.3834	NE	1		50-55	Lithic	Debitage		1	0.165	GM		1	1	G4
2012.3.3835	NE	1		50-55	Lithic	Debitage		4	0.343	PDC		1		G4
2012.3.3836	NE	1		50-55	Lithic	Debitage		2	0.193	PDC		1	1	G4
2012.3.3837	NE	1		50-55	Lithic	Debitage		25	2.318	PDC			1	G4
2012.3.3838	NE	1		50-55	Lithic	Debitage		40	2.218	PDC				G4
2012.3.3839	NE	1		50-55	Pottery	Sherd	Body	1	17.070	Pottery				G1
2012.3.3840	NE	1		45-50	Pottery	Sherd	Body	1	0.706	Pottery				G2
2012.3.3841	NE	1		45-50	Pottery	Sherd	Body	2	0.572	Pottery				G3
2012.3.3842	NE	1		45-50	Pottery	Sherd	Body	13	0.636	Pottery				G4
2012.3.3843	NE	1		45-50	Lithic	Debitage		1	0.169	PDC				G3
2012.3.3844	NE	1		45-50	Lithic	Debitage		1	0.149	PDC		1		G4
2012.3.3845	NE	1		45-50	Lithic	Debitage		2	0.165	PDC		1	1	G4
2012.3.3846	NE	1		45-50	Lithic	Debitage		1	0.017	Cedar Valley		1	1	G4
2012.3.3847	NE	1		45-50	Lithic	Debitage		3	0.127	GM				G4
2012.3.3848	NE	1		45-50	Lithic	Debitage		2	0.133	GM			1	G4
2012.3.3849	NE	1		45-50	Lithic	Debitage		7	0.268	PDC				G4
2012.3.3850	NE	1		45-50	Pottery	Sherd	Body	1	3.180	Pottery				G2
2012.3.3851	NE	1		45-50	Pottery	Sherd	Body	2	0.647	Pottery				G3
2012.3.3852	NE	1		45-50	Pottery	Sherd	Body	11	1.190	Pottery				G4
2012.3.3853	NE	1		45-50	Lithic	Debitage		1	2.650	PDC	1		1	G2
2012.3.3854	NE	1		45-50	Lithic	Debitage		2	2.288	PDC		1	1	G2
2012.3.3855	NE	1		45-50	Lithic	Debitage		1	1.293	GM		1	1	G3
2012.3.3856	NE	1		45-50	Lithic	Debitage		2	0.934	PDC				G3
2012.3.3857	NE	1		45-50	Lithic	Debitage		2	0.669	PDC			1	G4
2012.3.3858	NE	1		45-50	Lithic	Debitage		1	0.092	Hixton Orthoquartzite			1	G4
2012.3.3859	NE	1		45-50	Lithic	Debitage		3	0.102	GM				G4
2012.3.3860	NE	1		45-50	Lithic	Debitage		5	0.438	PDC			1	G4
2012.3.3861	NE	1		45-50	Lithic	Debitage		12	0.756	PDC				G4
2012.3.3862	NE	1		45-50	Pottery	Sherd	Body	2	0.486	Pottery				G2
2012.3.3863	NE	1		45-50	Pottery	Sherd	Body	12	3.712	Pottery				G3
2012.3.3864	NE	1		45-50	Pottery	Sherd	Body	40	2.330	Pottery				G4
2012.3.3866	NE	1		45-50	Lithic	Debitage		1	2.255	PDC			1	G2
2012.3.3867	NE	1		45-50	Lithic	Debitage	Utilized Flake	1	3.339	PDC		1		G2
2012.3.3868	NE	1		45-50	Lithic	Debitage		7	1.527	PDC				G3
2012.3.3869	NE	1		45-50	Lithic	Debitage		1	0.431	PDC		1	1	G3
2012.3.3870	NE	1		45-50	Lithic	Debitage		2	0.196	PDC		1	1	G3
2012.3.3871	NE	1		45-50	Lithic	Debitage		3	0.453	PDC			1	G4
2012.3.3872	NE	1		45-50	Lithic	Debitage		1	0.013	GM			1	G4
2012.3.3873	NE	1		45-50	Lithic	Debitage		1	0.013	GM				G4
2012.3.3874	NE	1		45-50	Lithic	Debitage		1	0.084	Cedar Valley		1	1	G4
2012.3.3875	NE	1		45-50	Lithic	Debitage		2	0.066	PDC		1	1	G4
2012.3.3876	NE	1		45-50	Lithic	Debitage		3	0.357	PDC		1		G4
2012.3.3877	NE	1		45-50	Lithic	Debitage		14	0.732	PDC			1	G4
2012.3.3878	NE	1		45-50	Pottery	Sherd	Body	1	0.140	Pottery				G2
2012.3.3879	NE	1		45-50	Pottery	Sherd	Body	6	2.116	Pottery				G3
2012.3.3880	NE	1		45-50	Pottery	Sherd	Body	6	0.486	Pottery				G4
2012.3.3881	NE	1		45-50	Lithic	Debitage		1	6.156	PDC		1	1	G1
2012.3.3882	NE	1		45-50	Lithic	Debitage		1	2.240	PDC		1	1	G2
2012.3.3883	NE	1		45-50	Lithic	Debitage		6	3.358	PDC				G3
2012.3.3884	NE	1		45-50	Lithic	Debitage		1	0.376	PDC			1	G3

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2012.3.3885	NE	1		45-50	Lithic	Debitage		9	6.004	PDC		1	1	G3
2012.3.3886	NE	1		45-50	Lithic	Debitage		1	0.618	GM			1	G3
2012.3.3887	NE	1		45-50	Lithic	Debitage		1	0.187	GM				G3
2012.3.3888	NE	1		45-50	Lithic	Debitage	Utilized Flake	1	1.100	PDC		1	1	G3
2012.3.3889	NE	1		45-50	Lithic	Debitage		1	0.072	PDC		1	1	G4
2012.3.3890	NE	1		45-50	Lithic	Debitage		6	0.200	PDC			1	G4
2012.3.3891	NE	1		45-50	Lithic	Debitage		4	0.242	GM				G4
2012.3.3892	NE	1		45-50	Lithic	Debitage		2	0.208	GM			1	G4
2012.3.3893	NE	1		45-50	Lithic	Debitage		14	0.845	PDC				G4
2012.3.3894	NE	1		60-65	Pottery	Sherd	Body	7	2.818	Pottery				G3
2012.3.3895	NE	1		60-65	Pottery	Sherd	Body	4	0.321	Pottery				G4
2012.3.3896	NE	1		60-65	Lithic	Debitage	Utilized Flake	1	0.357	PDC			1	G3
2012.3.3897	NE	1		60-65	Lithic	Debitage		1	0.129	PDC		1	1	G3
2012.3.3898	NE	1		60-65	Lithic	Debitage		1	0.061	PDC	1		1	G4
2012.3.3899	NE	1		60-65	Lithic	Debitage		1	0.017	PDC				G4
2012.3.3900	NE	1		60-65	Lithic	Debitage		1	0.004	PDC			1	G4
2012.3.3901	NE	1		60-65	Lithic	Debitage		1	0.000	GM			1	G4
2012.3.3902	NE	1		60-65	Pottery	Sherd	Body	1	2.502	Pottery				G2
2012.3.3903	NE	1		60-65	Pottery	Sherd	Body	3	0.526	Pottery				G3
2012.3.3904	NE	1		60-65	Pottery	Sherd	Body	6	0.342	Pottery				G4
2012.3.3905	NE	1		60-65	Lithic	Debitage		1	0.082	PDC				G4
2012.3.3906	NE	1		60-65	Lithic	Debitage		1	0.089	PDC			1	G4
2012.3.3907	NE	1		60-65	Lithic	Debitage		1	0.050	Hixton Orthoquartzite				G4
2012.3.3908	NE	1		55-60	Pottery	Sherd	Body	1	2.921	Pottery				G2
2012.3.3909	NE	1		55-60	Pottery	Sherd	Body	1	0.346	Pottery				G3
2012.3.3910	NE	1		55-60	Pottery	Sherd	Body	3	0.147	Pottery				G4
2012.3.3911	NE	1		55-60	Pottery	Sherd	Body	2	0.651	Pottery				G3
2012.3.3912	NE	1		55-60	Pottery	Sherd	Body	4	0.363	Pottery				G4
2012.3.3913	NE	1		55-60	Lithic	Debitage		1	0.531	PDC		1		G3
2012.3.3914	NE	1		55-60	Lithic	Debitage		1	0.573	PDC			1	G3
2012.3.3915	NE	1		55-60	Lithic	Debitage		2	0.088	PDC				G4
2012.3.3916	NE	1		55-60	Lithic	Debitage		3	0.183	PDC			1	G4
2012.3.3917	NE	1		55-60	Lithic	Debitage		1	0.092	GM			1	G4
2012.3.3918	NE	1		55-60	Pottery	Sherd	Body	2	5.265	Pottery				G2
2012.3.3919	NE	1		55-60	Pottery	Sherd	Body	4	1.349	Pottery				G3
2012.3.3920	NE	1		55-60	Pottery	Sherd	Body	7	0.473	Pottery				G4
2012.3.3921	NE	1		55-60	Lithic	Debitage		1	0.054	PDC				G4
2012.3.3922	NE	1		55-60	Lithic	Debitage		1	0.033	GM				G4
2012.3.3923	NE	1		55-60	Pottery	Sherd	Body	2	9.164	Pottery				G2
2012.3.3924	NE	1		55-60	Pottery	Sherd	Body	3	1.765	Pottery				G3
2012.3.3925	NE	1		55-60	Pottery	Sherd	Body	25	1.569	Pottery				G4
2012.3.3926	NE	1		55-60	Lithic	Debitage		2	10.650	PDC		1	1	G2
2012.3.3927	NE	1		55-60	Lithic	Debitage		1	4.857	PDC		1		G2
2012.3.3928	NE	1		55-60	Lithic	Debitage		1	2.720	PDC			1	G2
2012.3.3929	NE	1		55-60	Lithic	Debitage		3	1.671	PDC			1	G3
2012.3.3930	NE	1		55-60	Lithic	Debitage		1	19.406	PDC		1	1	G1
2012.3.3931	NE	1		55-60	Lithic	Debitage		1	1.714	GM		1		G3
2012.3.3932	NE	1		55-60	Lithic	Debitage		3	0.602	PDC		1	1	G4
2012.3.3933	NE	1		55-60	Lithic	Debitage		2	0.121	GM				G4
2012.3.3934	NE	1		55-60	Lithic	Debitage		5	0.388	PDC				G4
2012.3.3935	NE	1		55-60	Lithic	Debitage		6	0.718	PDC			1	G4
2012.3.3936	NE	1		50-55	Pottery	Sherd	Body	1	1.815	Pottery				G2

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2012.3.3937	NE	1		50-55	Pottery	Sherd	Body	3	1.837	Pottery				G3
2012.3.3938	NE	1		50-55	Pottery	Sherd	Body	9	0.801	Pottery				G4
2012.3.3940	NE	1		50-55	Lithic	Debitage		1	0.643	PDC				G3
2012.3.3941	NE	1		50-55	Lithic	Debitage		1	0.519	PDC		1	1	G3
2012.3.3942	NE	1		50-55	Lithic	Debitage		1	0.115	PDC			1	G3
2012.3.3943	NE	1		50-55	Lithic	Debitage		1	0.023	Hixton Orthoquartzite				G4
2012.3.3944	NE	1		50-55	Lithic	Debitage		3	0.143	PDC				G4
2012.3.3945	NE	1		50-55	Lithic	Debitage		1	0.042	GM		1		G4